Town of Johnstown

TOWN COUNCIL REGULAR MEETING

450 S. Parish, Johnstown, CO
Monday, November 01, 2021 at 7:00 PM

MISSION STATEMENT: Enhancing the quality of life of our residents, businesses, and visitors through community focused leadership.

AGENDA

CALL TO ORDER

Pledge of Allegiance

ROLL CALL

AGENDA APPROVAL

SPECIAL PRESENTATIONS

1. November 11, 2021 Veterans Day Proclamation
2. Business of the Month - Presented by Sarah Crosthwaite, Economic Development Manager
3. Johnstown Downtown Development Association - 3rd Quarter Presentation

PUBLIC COMMENT

Members of the audience are invited to speak at the Council meeting. Public Comment is reserved for citizen comments on items not contained on the printed agenda. Citizen comments are limited to three (3) minutes per speaker. When several people wish to speak on the same position on a given item, they are requested to select a spokesperson to state that position.

CONSENT AGENDA

The Consent Agenda is a group of routine matters to be acted on with a single motion and vote. Council or staff may request an item be removed from the Consent Agenda and placed on the Regular Agenda for discussion.

4. Minutes - October 18, 2021
5. First Amendment To Subdivision Development And Improvement Agreement For Town Of Johnstown (Johnstown Farms Filing No. 3)
6. Second Reading Ordinance No. 2021-211, Approving P.U.D. Outline Development Plan Amendment 1 for Welty Ridge located in the Northeast Quarter of Section 10, Township 4 North, Range 68 West of the 6th P.M. County of Weld, State of Colorado Except that portion conveyed in Book 1570 at Page 620, consisting of approximately 144 acres.
7. Resolution 2021-41 Adopting Weld County Multi-Jurisdictional Hazard Mitigation Plan (2021)

TOWN MANAGER REPORT

8. Town Manager's Report

TOWN ATTORNEY REPORT

PUBLIC HEARING

9. Resolution 2021-42 Approving the 2021 Johnstown Area Comprehensive Plan

10. Ordinance 2021-213 Approving the Rezoning of the Riverbend Estates to Planned Unit Development - Residential (PUD-R)
11. Ordinance 2021-214 Approving P.U.D. Outline Development Plan for Riverbend Estates PUD
12. Public Hearing: First Reading of Ordinance 2021-215 Repealing and Readopting Article IV Of Chapter 7 Of The Johnstown Municipal Code Concerning Waste Collection
13. Public Hearing - 2022 Proposed Budget

NEW BUSINESS

14. Johnstown Reservoir Dam Repair
15. Award South Tank Waterline Distribution System Construction Project
16. Award Bid for Downtown Johnstown Parklet Project

COUNCIL REPORTS AND COMMENTS

MAYOR'S COMMENTS

EXECUTIVE SESSION

17. An Executive Session to discuss the purchase of real property pursuant to C.R.S. Section 24-6-402(4)(a).

INFORMATIONAL ITEMS

ADJOURN

WORK SESSION

19. Home Rule Charter Amendment

AMERICANS WITH DISABILITIES ACT NOTICE

In accordance with the Americans with Disabilities Act, persons who need accommodation in order to attend or participate in this meeting should contact Town Hall at (970) 587-4664 within 48 hours prior to the meeting in order to request such assistance.

Town of Johnstown

Proclamation

VETERAN'S DAY

November 11, 2021

WHEREAS, in 1954, President Dwight D. Eisenhower signed the first Veteran's Day Proclamation calling on the citizens of the United States to "pay appropriate homage to the veterans of all its wars who have contributed so much to the preservation of this Nation;" and

WHEREAS, as our Nation has fought and continues to fight battles around the world, the words of the first proclamation still ring true: "let us solemnly remember the sacrifices of all those who fought so valiantly, on the seas, in the air, and on foreign shores, to preserve our heritage of freedom, and let us reconsecrate ourselves to the task of promoting and enduring peace so that their efforts shall not have been in vain;" and

WHEREAS, as citizens of this great Nation, we remember with grateful hearts those men and women who served in the United States Armed Forces with distinction and valor as sailors, soldiers, airmen and marines and offer our sincere prayers for the safety of those who continue to defend the principles on which our country was founded; and

WHEREAS, the Town of Johnstown is proud to recognize our Nation's Veterans and extend the appreciation of our citizens to those who wear the uniforms of the United States Armed Forces and serve on the front lines preserving freedom and liberty.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF JOHNSTOWN, COLORADO, THAT I, Gary L. Lebsack, on behalf of the Town Council of the Town of Johnstown, hereby:

PROCLAIM November 11, 2021, as VETERANS DAY in the Town of Johnstown; and

ENCOURAGE all citizens of the Town of Johnstown to observe and appreciate the sacrifices and contributions of veterans who have fought for peace and the defense of democracy in the United States and abroad.

PROCLAIMED this 1st day of November, 2021.

By: _____
Gary L. Lebsack, Mayor

Quarterly Report for the Town of Johnstown
From the Johnstown Downtown Development Association

JDDA Financials

2021 Q3 Financials – Attachments Included
Starting Balance: $17,435.00
Cash In: $6,870.70
Expenditures: $8,465.28
Ending Balance: $15,840.42

2021 Q2 Financials – Attachments Included
Starting Balance: $5,905.98
Cash In: $15,750.00
Expenditures: $4,220.98
Ending Balance: $17,435.00

2021 Q1 Financials – Attachments Included
Starting Balance: $6,485.30
Cash In: $1,575.00 (1) Monthly Quarterly Treasurer's Report
Expenditures: $2,154.32 (2) Monthly Quarterly Treasurer's Report
Ending Balance: $5,905.98

Upcoming Expenses:

Financial Request from the Town of Johnstown: $15,000 for 2022 financial support

Strategic plan to revitalize the Town's historic downtown

The JDDA would still like to have a committee that would work alongside the Economic Development Manager to collaborate for future downtown projects. Currently we have a great working relationship with Sarah and appreciate her involvement with the JDDA as well as the communication between the businesses in Johnstown and the town!

Events

Previous Events including the Results/Outcome of the Event:

1. Fall Festival was a great success, we believe we had over 4000 people in attendance. This was also our first time doing the beer garden which was another source of income for the event. After all of our expenses and with the money we brought in from vendors and the beer garden the total cost for the event was $1,324.67.

Upcoming Events for 2021 including how we plan to support and/or sponsor the event as well as how we plan to promote/market the upcoming event:

1. Trick or Treat Street – Saturday, October 30th – 10am-12pm
   – This event is available to all downtown businesses and our partnered members to participate in. We will be creating a map of who all will be participating and where they will be located during the event.

2. Small Business Saturday – November 27, 2021 – We will market and promote all Small Business Saturday promotions/specials that all of our members are offering.

3. Johnstown Jingle including an annual Toy Drive in early December

Other Event Ideas we are considering

1. Car Show
2. Street Dance
3. Taste of Johnstown

Other than events, things we are doing to position downtown as the focal point of Johnstown:

1. Welcome Bags – We average roughly 40-50 welcome bags to new residents monthly with JDDA business information.

2. We purchased General Liability Insurance for our special events. This policy will also cover the Homecoming Parade and our Liability Limits are 1,000,000 per occurrence and 3,000,000 aggregate.

Social Media/Website

1. We currently have 2072 Facebook followers.

2. Our website www.visitdowntownjohnstown.com is up and running. All members are updated on the website and all known events are posted.

Downtown Businesses Update – Q1 2021

JDDA Members: 25 paid members with 10-20 interested in joining in 2022
Membership Dues are $125 for Downtown Johnstown Businesses and Partnered Member Dues will be $250

New businesses/relocated businesses in Downtown Johnstown: Wing Shack is moving in to the old 21 North, Los Rudos opened up at the old Nacho Y Kikas.

Businesses that have closed/moved out of Downtown Johnstown: 21 North Sold and temporarily closed

Employment opportunities available: Johnstown Barber Shop is looking for more Barbers, Johnstown Nails is looking for more Nail Technicians

Johnstown Downtown Development Association
Quarterly Treasurer's Report
For 3rd quarter Ending 9/30/2021

Beginning Cash	$	17,435.00	
Cash In	$	6,870.70	(1)
Cash Out	$	8,465.28	(2)
Ending Cash	$	15,840.42	

(1)
Cash In :
Event booth income, Dues income and beer garden sales

(2)
Cash out :
Marketing banners, flyers and postage for mailers; Insurance for events; Bank charges, supplies and event expenses

* NET DECREASE IN CASH in 3rd quarter of $1594.58
** NET INCREASE IN CASH YTD 2021 is $9,355.12

***BBQ Days Acct 8128 - The BBQ days is not an actual entity so JDDA is holding the money for that committee

Johnstown Downtown Development Association

Item #3.

Statement of Activity

July - September, 2021

	TOTAL
Revenue	
Beer Garden Sales	2,130.70
Dues income	1,225.00
Event Income	3,150.00
Non-Profit Revenue	0.00
Services	300.00
Unapplied Cash Payment Revenue	65.00
Total Revenue	**$6,870.70**
GROSS PROFIT	**$6,870.70**
Expenditures	
Advertising	
Marketing	1,054.75
Total Advertising	**1,054.75**
Bank Charges	80.43
Event Expenses	4,564.41
Insurance	2,277.00
Legal, Accounting and Professional	250.00
Licenses, Fees and Filing Fees	115.00
Office Supplies	52.14
Postage	11.60
QuickBooks Payments Fees	59.95
Unapplied Cash Bill Payment Expenditure	0.00
Total Expenditures	**$8,465.28**
NET OPERATING REVENUE	**$ -1,594.58**
NET REVENUE	**$ -1,594.58**

Johnstown Downtown Development Association

Item #3.

Statement of Financial Position

As of September 30, 2021

	TOTAL
ASSETS	
Current Assets	
Bank Accounts	
BBQ Days acct 8128	34,476.84
General Fund	15,694.42
Petty Cash	146.00
Total Bank Accounts	**$50,317.26**
Accounts Receivable	
Accounts Receivable (A/R)	0.00
Total Accounts Receivable	**$0.00**
Other Current Assets	
Undeposited Funds	0.00
Total Other Current Assets	**$0.00**
Total Current Assets	**$50,317.26**
TOTAL ASSETS	**$50,317.26**
LIABILITIES AND EQUITY	
Liabilities	
Current Liabilities	
Other Current Liabilities	
BBQ Days holding account	34,476.84
Total Other Current Liabilities	**$34,476.84**
Total Current Liabilities	**$34,476.84**
Total Liabilities	**$34,476.84**
Equity	
Retained Earnings	6,485.30
Net Revenue	9,355.12
Total Equity	**$15,840.42**
TOTAL LIABILITIES AND EQUITY	**$50,317.26**

Johnstown Downtown Development Association

Event: 2021 Fall Festival
Date: 9/19/2021

Total Budget: **$ 5,820.00**

Description	Vendor	Budg Amount	Actual Amount	Due Date
Insurance	Johnstown Insurance	$ 600.00	$ 372.00	On top of this we did purchase $1905 of ANNUAL event insurance
License and Application Fees	FRFD/Town of Jtown	$ 100.00	$ 100.00	Pd to johnstown
Entertainment				
Folk Bands	Not avail	$ 500.00	$ 400.00	Loose Change
Polka Bands	Not avail	$ 500.00	$ 200.00	Daniel Boose
Banner	Ed 2 Design 4 U	$ 120.00	$ 208.89	adding sponsored by and beer garden
Posters	Ed 2 Design 4 U	$ 100.00	$ 47.48	
Cleaning supplies		$ 100.00	$ -	
Supplies Other			$ 747.00	
Decorations		$ 250.00	$ 250.00	
Police Officers	Jtown PD	$ 450.00	$ 800.00	
Porta Potty	Republic Services	$ 1,900.00	$ 1,900.00	they gave us 15% off for non-profit plus first event
Trash Recepticles	Republic Services	$ -	$ -	included in potty quote
Tables and Chairs	TRPR	$ -	$ -	Donated by TRPR and setup Interract club
Bar Tables for Garden	Front Range Rental	$ -	$ 80.00	
Breeze Ad	Breeze	$ 400.00	$ -	NOT THIS TIME $400 is too much for what we can do
Kegs (Purchase 5, 1 Donated)	High Country Bev.	$ 650.00	$ 1,500.00	This is an estimate as we have not received the final bill as of 10/13/21
FaceBook Boost cost	FaceBook	$ 150.00	$ -	
		$ 5,820.00	**$ 6,605.37**	
			$ 3,150.00	This is what has been billed for booths for this event
			$ 2,130.70	Beer Sales
			$ (1,324.67)	Net Cash out for Fall Fest Event

Town of Johnstown

TOWN COUNCIL REGULAR MEETING

450 S. Parish, Johnstown, CO
Monday, October 18, 2021 at 7:00 PM

MINUTES

CALL TO ORDER

Mayor Lebsack called the meeting to order at 7:00 p.m. and led the Pledge of Allegiance.

ROLL CALL

PRESENT
Mayor Gary Lebsack
Councilmember Damien Berg
Councilmember Troy Mellon
Councilmember Jesse Molinar
Councilmember Chad Young

ABSENT
Councilmember Bill Stevens
Councilmember Amy Tallent

Staff Present: Matt LeCerf, Town Manager, Avi Rocklin, Town Attorney, Mitzi McCoy, Finance Director, Kim Meyer, Planning Director, Sarah Crosthwaite, Economic Development Manager and Brian Phillips, Chief of Police.

AGENDA APPROVAL

Motion made by Councilmember Mellon, seconded by Councilmember Berg to approve the agenda. Motion carried with a unanimous vote.

PUBLIC COMMENT

Chad Croft at 1125 North Park Avenue requested Council consider replacing his curb, gutter and sidewalk because of deteriation from storm water run off.

Deb Riddell at 1116 Cottonwood Court expressed concerns the pedestrian crossing light on Telep Avenue is difficult to see during the day.

CONSENT AGENDA

Motion made by Councilmember Mellon, seconded by Councilmember Molinar Jr. to approve the Consent Agenda. Motion carried with a unanimous vote.

- Minutes - September 20, 2021
- List of Bills - October 2021
- September 2021 Financial Statements
- Second Reading Ordinance No. 2021-207 - Annexing certain unincorporated lands located in the Southwest Quarter of Section 4, Township 4 North, Range 67 West of the 6th P.M., County of Weld, State of Colorado, known by site address as 8062 County Road 48 1/2, County of Weld,

State of Colorado, consisting of approximately 122.71 acres and known as the Held Farm Annexation

- Second Reading Ordinance No. 2021-208 - Approval of H-A Zoning of the property known as the Held Farm Annexation located in the Southwest Quarter of Section 4, Township 4 North, Range 67 West of the 6th P.M., County of Weld, State of Colorado, known by site address as 8062 County Road 48 1/2, County of Weld, State of Colorado, consisting of approximately 122.71 acres.
- Second Reading Ordinance No. 2021-209 - Annexing certain unincorporated lands located in the East Half of the Southwest Quarter and Southeast Quarter of Section 12, Township 4 North, Range 68 West of the 6th P.M., County of Weld, State of Colorado, known by site address as 5631 County Road 46, County of Weld, State of Colorado, consisting of approximately 240.96 acres, and known as the Whitehall Annexation
- Second Reading Ordinance No. 2021-210 - Approval of PUD-MU Zoning of the property known as the Whitehall Annexation located in the East Half of the Southwest Quarter and Southeast Quarter of Section 12, Township 4 North, Range 68 West of the 6th P.M., County of Weld, State of Colorado, known by site address as 5631 County Road 46, County of Weld, State of Colorado, consisting of approximately 240.96 acres.
- Annexation Agreement for Whitehall Annexation
- Annexation Agreement for Held Farm Annexation
- Agreement for ProCode Inc. to Provide Building Division Services
- Water and Sewer Service Agreement - Crowne Apartments at 2534
- Water & Sewer Service Agreement - Limelight Properties at 2534
- Resolution 2021-37 Acknowledging Receipt of the Fiscal Year 2022 Preliminary Budget
- Fourth Amended Intergovernmental Agreement for the Establishment of Larimer Emergency Telephone Authority
- Colorado Opioid Settlement Memorandum of Understanding Authorization, Participation Forms, and Escrow Agreement

PUBLIC HEARING

1. Public Hearing to consider Resolution 2021-38 Approving the Uncle Benny's Marketplace Resubdivision to create four commercial lots - Mayor Lebsack opened the public hearing at 7:10 p.m. and heard from staff. Johnson-Taylor Family Properties, LLLP submitted an application for approval of a Final Subdivision Plat for Uncle Benny's Marketplace Re-Subdivision consisting of approximately 18.450 acres. The proposed subdivision plat encompasses two existing lots, to create a total of four lots for commercial and light industrial development. A representative from Uncle Benny's was present to answer questions. Having no public comment, the hearing closed at 7:21 p.m. Based upon findings and analysis presented at the meeting a motion was made by Councilmember Mellon, seconded by Councilmember Berg to approve Resolution 2021-38 approving Uncle Benny's Marketplace Re-subdivision Final Subdivision Plat with conditions as stated within the resolution. Motion carried with a unanimous vote.

2. Public Hearing for Ordinance 2021-211 Approving the Welty Ridge Outline Development Plan Amendment 1- Mayor Lebsack opened the public hearing at 7:22 p.m. and heard from staff. The applicant Buc-ee's, Ltd. is requesting an amendment to the original Welty Ridge Outline Development Plan. The proposed amendments modify the size and configuration of the mixed-use planning areas on

the north and includes a change to the circulation plan to incorporate a roundabout on CR 48 at Gateway Circle. Mr. Stan Beard representing Buc-ee's was present to answer questions. Representatives of businesses in the Gateway Center spoke in opposition of the ODP. The following individuals addressed Council with concerns of the proposed roundabout: Mike Serba, Doug Widland, Shauna Bezio and Alexandra Haggerty representing Loaf N Jug, Scott Smith, representing Smith Acres, LLC and Suzanne Hull, representing Red Barn Liquors. Steve Spaur reminded Council there is an easement through the property which carries irrigation water for the farm he owns immediately to the south. Having no further comments, the hearing closed at 8:11 p.m. Based on findings and analysis presented at the meeting a motion was made by Councilmember Mellon, seconded by Councilmember Molinar to approve Ordinance 2021-211 approving the Welty Ridge Outline Development Plan 1 on first reading. Motion carried with a unanimous vote.

3. Public Hearing to consider Resolution 2021-39 Approving the Final Subdivision Plat and Final Development Plans for the 1st Replat of Block 1 of Mountain View West Subdivision Replat Amendment No. 1 to create 143 Townhome Lots – Mayor Lebsack opened the public hearing at 8:20 p.m. and heard from staff. The applicant Townhome Developers, LLC is requesting approval of a final subdivision plat and final development plan to replat Block 1 of the Mountain View West Subdivision creating 143 attached single-family homes (townhomes). The proposed subdivision plat includes a 12-acre lot for the 143 attached residential townhomes and the 5-acre tract would be created for future development. Mr. Andy Gerk, representing the applicant was present to answer any questions. Having no public comment, the hearing was closed at 8:31 p.m. Based on findings and analysis presented at the meeting a motion was made by Councilmember Berg, seconded by Councilmember Young to approve Resolution 2021-39 Approving Final Subdivision Plat and Final Development Plan for the 1st Replat of Block 1 Mountain View West Subdivision Replat Amendment No. 1. Motion carried with a unanimous vote.

4. Ordinance 2021-212 Amending Sections 7-121 And 7-138 Of the Johnstown Municipal Code Prohibiting Roosters in The Town – Mayor Lebsack opened the public hearing at 8:32 p.m. and heard from staff. Ordinance 2021-212 amends the municipal code to make it unlawful for any person to keep roosters in the Town limits. Having no public comment, the hearing closed at 8:45 p.m. Motion made by Councilmember Mellon, seconded by Councilmember Berg to deny approving Ordinance 2021-212, An Ordinance Amending Section 7-121 and 7-138 of the Johnstown Municipal Code Prohibiting Roosters in the Town. Voting Yea: Mayor Lebsack, Councilmember Berg, Councilmember Mellon, Councilmember Molinar Voting Nay: Councilmember Young

NEW BUSINESS

1. Development Agreement - 1st Replat of Block 1 of Mountain View West Subdivision Replat Amendment No. 1- The agreement is the Town's standard agreement and requires construction of all improvements in accordance with approved development plans and construction plans. Motion made by Councilmember Mellon, seconded by Councilmember Molinar to approve the Subdivision Development and Improvement Agreement for 1st Replat of Block 1 of Mountain View West Replat. Motion carried with a unanimous vote.

2. Water and Sewer Service Agreement - First Amendment to WSSA with Parish LLC, for Mountain View Subdivision - Motion made by Councilmember Berg, seconded by Councilmember Mellon to approve the First Amendment to Water and Sewer Service Agreement for Mountain View West Subdivision. Motion carried with a unanimous vote.

3. Water and Sewer Service Agreement - 1st Replat of Block 1 of Mountain View West Subdivision Replat Amendment No. 1- Motion made by Councilmember Mellon, seconded by Councilmember Young to approve the Water and Sewer Service Agreement for Mountain View Land Developers, Inc. Motion carried with a unanimous vote.

4. Resolution 2021-40 Approving Economic Incentive Agreement with Buc-ee's LLC - Buc-ee's is in negotiations to purchase 28.22 acres of property located within the Town at the southwest corner of I-25 and Hwy 60 for development to build a convenience store and gas station as their first location in Colorado. In order to facilitate the development, the Town has offered incentives: Expedited Planning & Development Review, sales tax revenue share back, and implementation of a public improvement fee to assist in funding onsite and offsite public improvements. Mr. Stan Beard, Director of Real Estate was present to answer questions. Motion made by Councilmember Berg, seconded by Councilmember Young to approve Resolution 2021-40 Approving the Economic Incentive Agreement between the Town of Johnstown and Buc-ee's Colorado. Motion carried with a unanimous vote.

ADJOURN

The meeting adjourned at 9:14 p.m.

Mayor

Town Clerk

Town of Johnstown

TOWN COUNCIL AGENDA COMMUNICATIONS

AGENDA DATE: November 1, 2021

SUBJECT: First Amendment to the Subdivision and Development Improvement Agreement for Johnstown Farms Filing No. 3

ACTION PROPOSED: Consider Approval of the First Amendment to the Subdivision and Development Improvement Agreement for Johnstown Farms Filing No. 3

ATTACHMENTS: 1. First Amendment to Subdivision and Development Improvement Agreement for Johnstown Farms Filing No. 3

PRESENTED BY: Matt LeCerf, Town Manager

AGENDA ITEM DESCRIPTION:

Proposed for your review and consideration, is the first amendment to the Subdivision and Development improvement agreement for Johnstown Farms filing number 3. The agreement contemplates three proposed revisions for your consideration. The items are as follows:

- Undergrounding of Utilities – Paragraph six of the original agreement is deleted and replaced with language included in the amended agreement with respect to undergrounding of electric utilities. Improvements to the bridge on 46.5 are not an obligation for Johnstown Farms III, but instead were a cash-in-lieu obligation. Since the improvement to the bridge are delayed based on future traffic, a segment of the electrical undergrounding is also being delayed and these two project scopes will happen concurrently in the future. To accommodate the utility undergrounding, Starwood is providing us with a payment of $270,208.06. This represents 115% of current costs to underground the utility.
- Regional Sidewalk Connectivity – This section deletes a previous paragraph from the original agreement and places the construction responsibility of the sidewalk crossing over the railroad onto the developer. The developer will complete the sidewalk and they are providing us with payment for the licensing agreement as required in the amendment.

- Railroad Utility Crossings – As part of the utility crossings, the developer will compensate the Town for a portion of the fees associated with these crossings due to Great Western Railroad.

LEGAL ADVICE:

The Town Attorney in concert with the Town Manager and Developer collaborated on this amendment as presented.

FINANCIAL ADVICE:

There will be financial outlays and responsibilities of the Town as the property develops, the majority of which is being collected as fee-in-lieu of the improvements described above.

RECCOMMENDED ACTION: Approve the First Amendment to the Subdivision and Development Improvement Agreement for Johnstown Farms Filing No. 3 as presented.

Reviewed and Approved for Presentation,

Town Manager

FIRST AMENDMENT TO SUBDIVISION DEVELOPMENT AND IMPROVEMENT AGREEMENT FOR TOWN OF JOHNSTOWN (Johnstown Farms Filing No. 3)

FIRST AMENDMENT TO SUBDIVISION DEVELOPMENT AND IMPROVEMENT AGREEMENT FOR TOWN OF JOHNSTOWN (Johnstown Farms Filing No. 3) (this "**Amendment**") is made and entered into the _____ day of _____, 2021 by and between the TOWN OF JOHNSTOWN, COLORADO, a municipal corporation (the "**Town**"), TF JOHNSTOWN FARMS, L.P., a Delaware limited partnership ("**Developer**") and JOHNSTOWN FARMS METROPOLITAN DISTRICT , a quasi-municipal corporation and political subdivision of the State of Colorado (the "**District**" and together with the Town and the Developer, the "**Parties**").

Recitals

WHEREAS, the Parties previously entered into that certain Subdivision Development and Improvement Agreement for Town of Johnstown (Johnstown Farms Filing No. 3) dated December 2, 2019 and recorded in the real property records of the Clerk and Recorder for Weld County, Colorado on February 21, 2020 at Reception No. 4568151 (the "**Agreement**"); and

WHEREAS, the Developer has commenced construction of the Public Improvements as contemplated by the Agreement; and

WHEREAS, in connection with certain development and construction matters relating to the Public Improvements, the Parties have determined that certain Developer obligations cannot reasonably be satisfied as contemplated by the Agreement; and

WHEREAS, the Parties now desire to amend the Agreement to modify and/or address certain obligations related to the inverted siphon, electric utility undergrounding, Weld County Road 46 ½ improvements, regional trail/sidewalk railroad crossing and certain railroad crossing agreements relating to the Development, as set forth herein.

Amendment

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby agree as follows:

1. Amendments.

1.1 Inverted Siphon. Paragraph 1 of Exhibit B-3 of the Agreement is hereby deleted in its entirety.

1.2 Electric Utility Weld County Road 46 ½. Paragraph 6 of Exhibit B-3 of the Agreement is hereby deleted in its entirety and in its place inserted the following:

6. **Electric Utility Weld County Road 46 ½**. Except as provided in this Paragraph 6, as part of the Public Improvements, Developer shall underground the electric utility on the south side of Weld County Road 46 ½ adjacent to the Property. Notwithstanding the foregoing, the Developer and the Town acknowledge and agree that a portion of such undergrounding comprising approximately 300 linear feet along the Weld County Road 46 ½ bridge adjacent to the Property (as generally depicted on Schedule 1 attached to this Exhibit B-3, the "**Phase 2 Undergrounding Improvements**") is not feasible until such time as the Town completes the contemplated widening of the Weld County Road 46 ½ bridge adjacent to the Property as set forth in Paragraph 5 to this Exhibit B-3. In lieu of Developer completing such undergrounding, Developer shall pay the Town cash-in-lieu in the amount of $270,208.06 (as described on Schedule 1) for the Town to underground, or cause the undergrounding of, the Phase 2 Undergrounding Improvements at such time as the Town undertakes widening of the Weld County Road 46 ½ bridge adjacent to the Property (the "**Undergrounding Fee**"). The Town hereby agrees that the Developer's payment of the Undergrounding Fee shall fully satisfy Developer's and the Subject Property's obligations relating to the Phase 2 Undergrounding Improvements. Unless otherwise agreed by the Town Manager in writing, the Undergrounding Fee shall be paid prior to the Town's Initial Acceptance of the Public Improvements.

1.3 Regional Sidewalk Connectivity. Paragraph 7 of Exhibit B-3 of the Agreement is hereby deleted in its entirety and in its place inserted the following:

7. **Regional Sidewalk Connectivity**. Connectivity of a regional trail system is a priority for the Town and, accordingly, the Developer shall construct as a part of the Public Improvements, in accordance with the *revised* approved Civil Engineering Construction Plans, a sidewalk along a portion of the southern one-half of the Weld County Road 46 ½ adjacent to the Property and along a portion of the northern one-half of Weld County Road 46 ½ as depicted in Schedule 2 attached to this Exhibit B-3 ("**WCR 46 ½ Sidewalk**"). The Town, at its sole expense, shall promptly repair any damage to WCR 46 ½ Sidewalk resulting from the Town's Weld County Road 46 ½ roadway and bridge construction. Notwithstanding any contrary provision of this Paragraph 7, the Town and Developer acknowledge that the portion of WCR 46 ½ Sidewalk crossing the railroad right-of-way adjacent to the Development shall require the approval of Great Western Railroad, as the owner of the railroad right-of-way (the "**Railroad ROW**"), and the entering into of a *Public Roadway Crossing License* or similar such agreement (a "**License Agreement**") by the Town and Great Western Railroad. The Town and the Developer anticipate that the License Agreement shall require the payment to Great Western Railroad of: (i) an initial application fee and (ii) annual license fees or a lump sum license fee. The Developer represents the Developer has paid the initial application fee to Great Western Railroad. If the License Agreement requires an annual license fee, Developer shall pay the first annual license fee and all subsequent annual licenses fees as required under the License Agreement until the Town provides notice of Initial Acceptance of the WCR 46 ½ Sidewalk, after which time the Town shall pay the annual license fee. If the License Agreement requires

a lump sum license fee, Developer shall pay a contribution to the Town for such lump sum fee in the amount of $6,000 not later than thirty (30) after the Town's written request therefor to Developer. The Town hereby agrees that the Developer's payment of the initial application fee and license fees, as provided herein, shall fully satisfy Developer's and the Subject Property's obligations to make such payments under the License Agreement.

1.4 Railroad Utility Crossings. A new Paragraph 10 is hereby inserted into Exhibit B-3 of the Agreement as follows:

10. Railroad Utility Crossings. The Town and Developer acknowledge that two water lines and one sanitary sewer line (each, a "**Utility Crossing**") shall cross the Railroad ROW and, as such, shall require the approval of Great Western Railroad and the entering into of three crossing licenses or similar such agreements (each, a "**Utility Crossing License**") (one Utility Crossing License for each Utility Crossing) by the Town and Great Western Railroad. The Town and Developer anticipate that each of the Utility Crossing Licenses shall require the payment to Great Western Railroad of: (i) an initial application fee and (ii) annual license fees or a lump sum license fee. The Developer represents the Developer has paid the initial application fee to Great Western Railroad. If the Utility Crossing Licenses require an annual license fee, Developer shall pay the first annual license fee and all subsequent annual licenses fees as required under the applicable Utility Crossing License for each Utility Crossing until the Town provides notice of Initial Acceptance of such Utility Crossing, after which time the Town shall pay the annual license fee. If the Utility Crossing Licenses require a lump sum license fee, Developer shall pay a contribution to the Town for such lump sum fee in the amount of $8,000 not later than thirty (30) after the Town's written request therefor to Developer. The Town hereby agrees that the Developer's payment of the initial application fee and license fees, as provided herein, shall fully satisfy Developer's and the Subject Property's obligations to make such payments under the Utility Crossing Licenses.

1.5 Weld County Road 46 ½. The Town and Developer acknowledge and agree that unforeseen circumstances have resulted in delays, outside of the control of the Town and Developer, to the construction of improvements to Weld County Road 46 ½ pursuant to the approved Civil Engineering Construction Plans ("**WCR Improvements**") as contemplated by the Agreement. Notwithstanding any provision of the Agreement to the contrary, Developer's construction, and the Town's Initial Acceptance, of the WCR Improvements shall not be a condition precedent to the Town's issuance of building permits for phase 1 of the Development; provided however, such construction and Initial Acceptance shall be a condition precedent to the Town's issuance of certificates of occupancy, temporary or final, for such phase 1.

2. Effect of Amendment. Except as expressly provided in this Amendment, the Agreement has not been amended, supplemented or altered in any way by this Amendment and the Agreement shall remain in full force and effect in accordance with its terms. If there is any

inconsistency between the terms of the Agreement and the terms of this Amendment, the provisions of this Amendment will govern and control.

[signature pages follow this page]

IN WITNESS WHEREOF, the Parties have executed this Amendment as of the date and year first set forth above.

DEVELOPER:

TF JOHNSTOWN FARMS, L.P.,
a Delaware limited partnership

By:_____
Craig Campbell, Authorized Signatory

STATE OF COLORADO)
) ss:
[CITY AND] COUNTY OF _____)

The foregoing instrument was acknowledged before me this ____ day of _____, 2021, by Craig Campbell as Authorized Signatory of S TF JOHNSTOWN FARMS, L.P., a Delaware limited partnership.

Witness my hand and official seal.

My commission expires: _____.

_____
Notary Public

TOWN:

TOWN OF JOHNSTOWN, COLORADO,
a municipal corporation

By:_____
Gary Lebsack, Mayor

ATTEST:

_____
Diana Steele, Town Clerk

APPROVED AS TO SECTION 1.1 OF THIS AMENDMENT:

DISTRICT:

JOHNSTOWN FARMS METROPOLITAN DISTRICT,
a quasi-municipal corporation and political subdivision of the State of Colorado

By:_____
Craig Campbell, Authorized Signatory

ATTEST:

_____
Secretary

STATE OF COLORADO)
) ss:
[CITY AND] COUNTY OF _____)

The foregoing instrument was acknowledged before me this ____ day of _____, 2021, by Craig Campbell as Authorized Signatory and _____ as Secretary of JOHNSTOWN FARMS METROPOLITAN DISTRICT, a quasi-municipal corporation and political subdivision of the State of Colorado.

Witness my hand and official seal.

My commission expires: _____.

_____
Notary Public

SCHEDULE 1
Phase 2 Undergrounding Improvements

[follows this page]

September 10, 2021

STARWOOD LAND ADVISORS
385 INVERNESS PKWY
ENGLEWOOD, CO 80112-5853

Subject: Request For Electric OH-UG conversion at COUNTY ROAD 46 1/2, JOHNSTOWN, WELD, Colorado

Dear Kurt Jones,

I have completed the engineering design and cost estimate to provide Electric OH-UG conversion based upon information you have provided. This design is based upon Electric OH-UG conversion, as shown on the enclosed drawing. The cost to provide the requested Electric OH-UG conversion is $234,963.53, which is non-refundable and payable in advance.

This proposal is contingent upon the following:

- All work performed during our normal work hours.
- Obtaining "Right-of-Way" at no cost to us.
- Obtaining permits as needed.
- No frost, in the ground, during construction or agreeing to pay for additional costs during frost conditions.
- There is an additional charge to open the transformer.
- Providing final grade elevations, at our equipment locations.
- Grade at trench location to be within 6 inches of the final grade.

If necessary our right-of-way agent will mail the right-of-way or easement documents to the appropriate landowners for their signature. This proposal is contingent upon receiving easements at no cost to us. Our right-of-way agent will need a copy of the Warranty Deed, the legal description, and the site drawing in order to prepare the easement for the landowner's signature.

NOTE: You must personally contact the local telephone company, the local cable TV company and/or any other utility company to arrange for the installation and payment of any costs of their facilities if they need to be relocated or disconnected along with the relocation.

If you accept the above costs and system design, please sign and date the second page of this letter and return this document to Public Service Company of Colorado, at the address shown below. After the signed and dated documents and total payment of $234,963.53 are received via the payment process, a work order will be issued and released so your project can be placed on the construction schedule. If a check is sent via the new payment process we are unable to accept checks with any sort of Lien Waiver because our Tariffs do not make an allowance for PSCo to accept checks printed or stamped with a lien waiver. Our current lead-time to begin work after

receiving the payment and signed documents is approximately 8-10 weeks. You will be notified of the week that our construction is scheduled to begin as soon as it is available.

This proposal will be valid until 11/10/21. If you have any questions regarding this project, please call me at 303-437-7862.

Sincerely,

Chase Cronic

Chase Cronic
Pike Engineering

Mailing address: Pike Engineering
5245 Ronald Reagan Blvd Suite 104
Johnstown, CO 80534

2021.09.14 07:29:11
-06'00'

Name:
Shayla Montano
Title: Design Supervisor

Re: Electric, OH-UG conversion, COUNTY ROAD 46 1/2, JOHNSTOWN

I have reviewed and approve of the enclosed design. I accept the cost of $234,963.53 and this amount will be paid to Xcel Energy in full prior to the scheduled construction date. The Construction Cost stated above does not include special items such as but not limited to frost or rock conditions. In the event the Company encounters any special items during construction, the Company shall bill Applicant for such special items as a non-refundable contribution in aid of construction.
I will send a signed copy of this letter with the applicable agreements.

Date: _____

*Customer Signature: _____

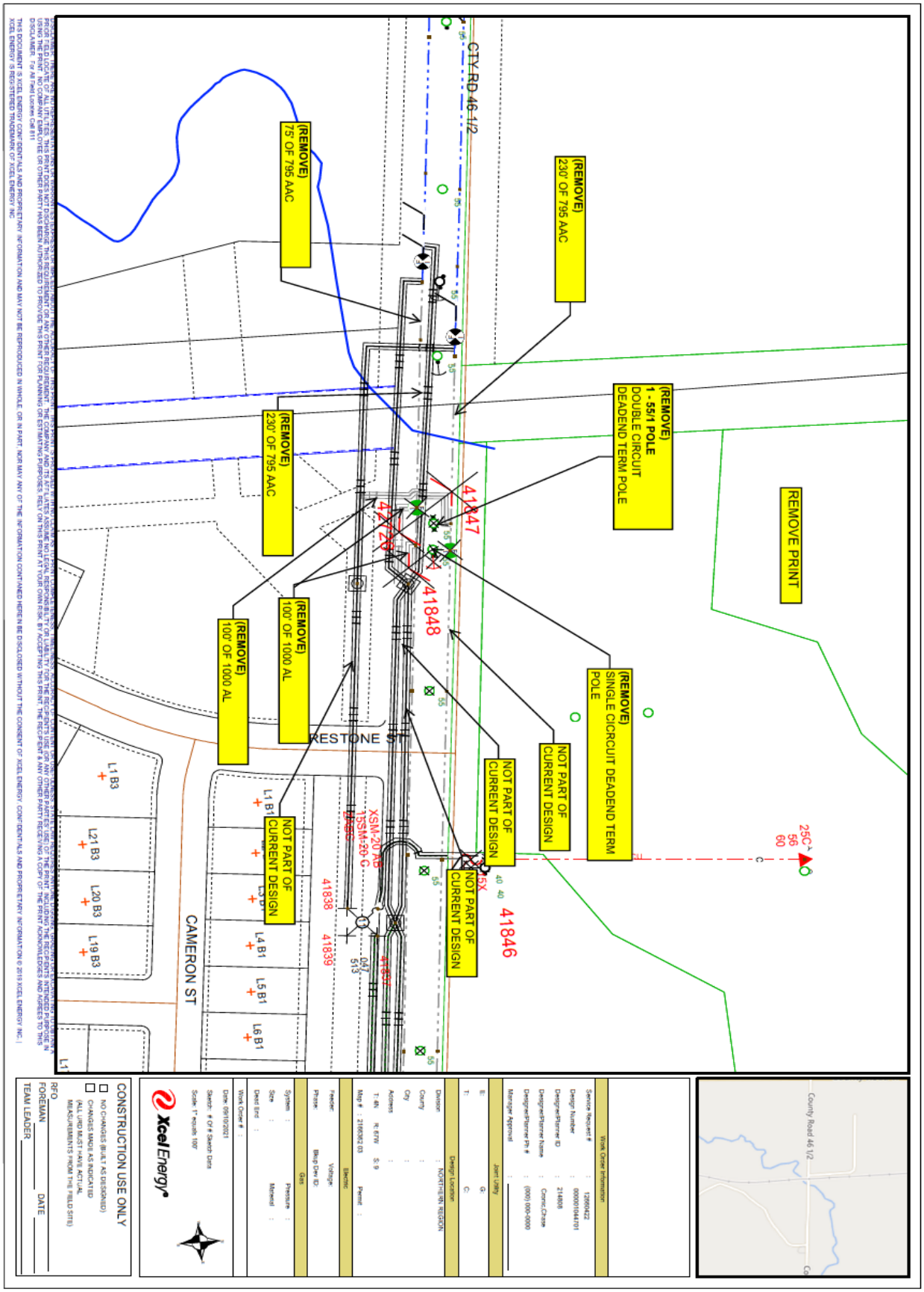
Title: _____

Mailing address: _____

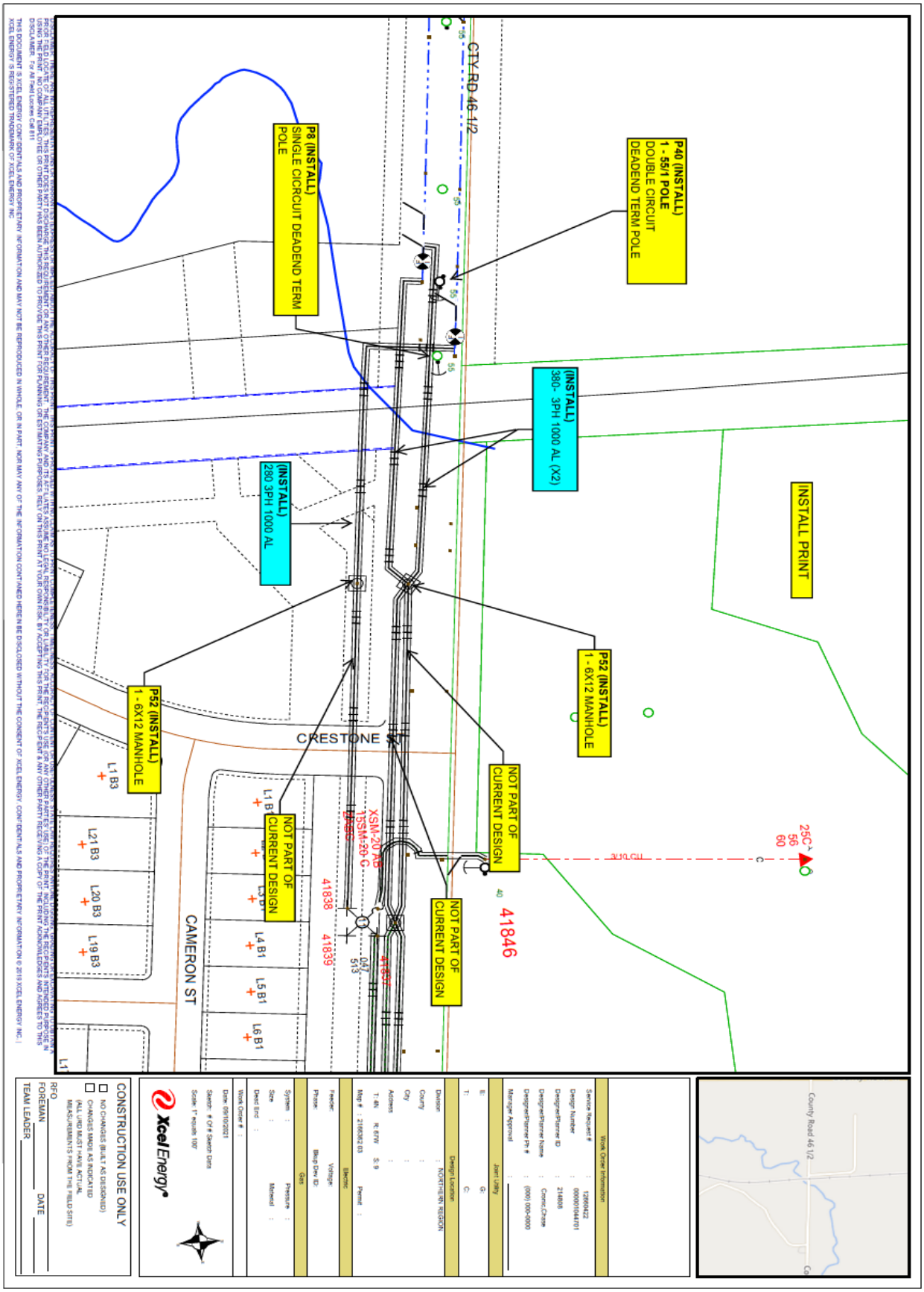
_____

_____

* Confidential Information



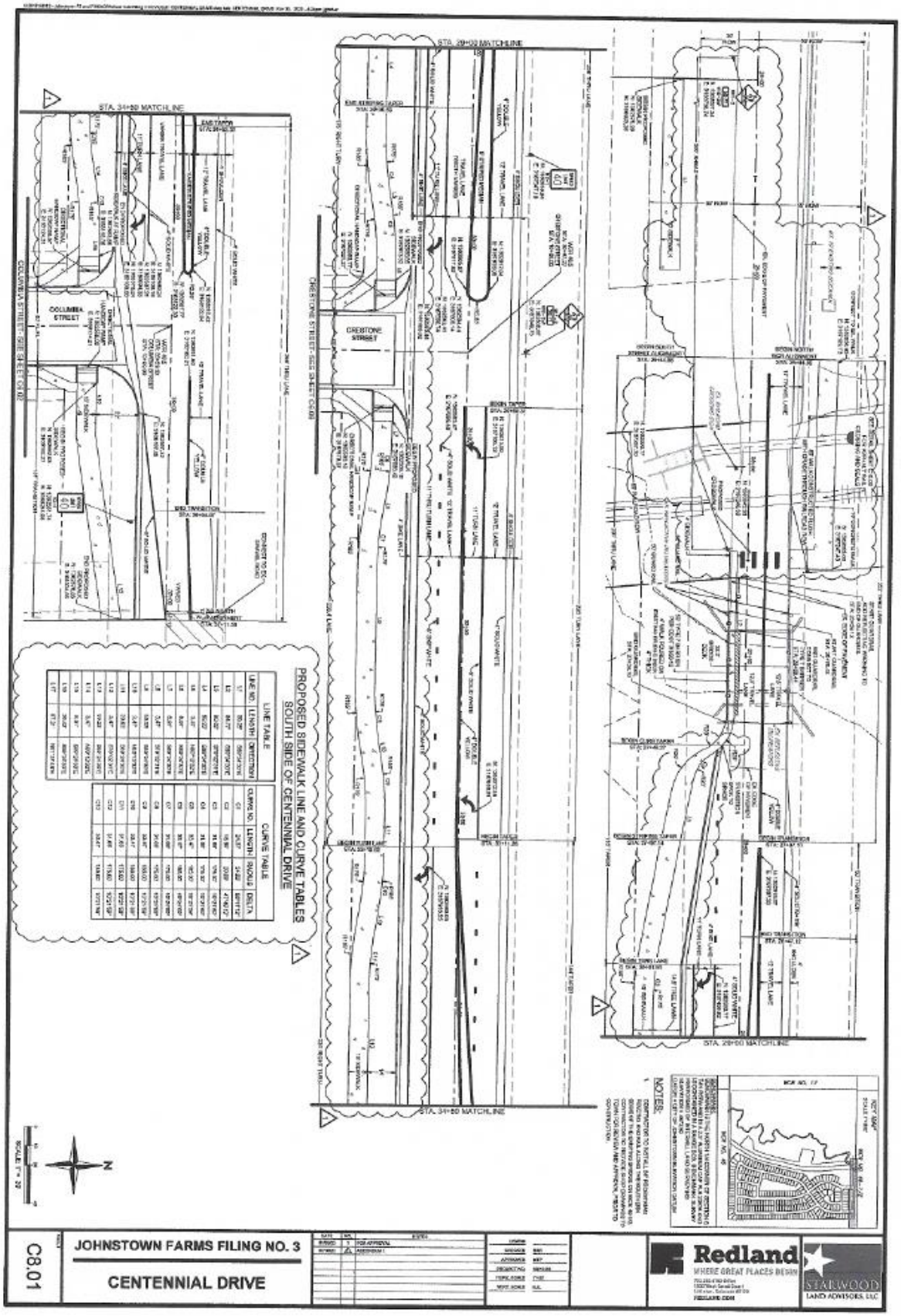
Schedule 1 – Page 4



Schedule 1 – Page 5

SCHEDULE 2
Depiction of Sidewalk

[follows this page]



Schedule 2 – Page 2

Town of Johnstown

TOWN COUNCIL AGENDA COMMUNICATIONS

AGENDA DATE: November 1, 2021

SUBJECT: Ordinance 2021-211 Approving the Welty Ridge Outline Development Plan Amendment 1

ACTION PROPOSED: Consider Ordinance 2021-211 on Second Reading - Approving the Welty Ridge Outline Development Plan Amendment 1

ATTACHMENTS:
1. Vicinity Map
2. Ordinance 2021-211
3. Proposed Welty Ridge ODP Amendment 1

PRESENTED BY: Kim Meyer, Planning & Development Director

AGENDA ITEM DESCRIPTION:

Public Hearing held, Council approved the first reading on October 18, 2021.

LEGAL ADVICE:

The Town Attorney drafted the Ordinance.

FINANCIAL ADVICE:
NA

RECOMMENDED ACTION:

Approve Ordinance 2021-211 approving Welty Ridge Outline Development Plan Amendment 1, on first reading.

Reviewed and Approved for Presentation,

Town Manager

VICINITY MAP

TOWN OF JOHNSTOWN, COLORADO
ORDINANCE NO. 2021-211

APPROVING P.U.D. OUTLINE DEVELOPMENT PLAN AMENDMENT 1 FOR WELTY RIDGE LOCATED IN THE NORTHEAST QUARTER OF SECTION 10, TOWNSHIP 4 NORTH, RANGE 68 WEST OF THE 6TH P.M., COUNTY OF WELD, STATE OF COLORADO, EXCEPT THAT PORTION CONVEYED IN BOOK 1570 AT PAGE 620, CONSISTING OF APPROXIMATELY 144 ACRES.

WHEREAS, the Town of Johnstown, Colorado ("Town") is a Colorado home rule municipality, duly organized and existing under the laws of the State of Colorado and the Town's Home Rule Charter; and

WHEREAS, the Town Council is vested with authority to administer the affairs of the Town; and

WHEREAS, Buc-ee's Ltd., a Texas limited partnership, submitted an application to the Town for approval of the P.U.D. Outline Development Plan Amendment 1 for a subdivision known as Welty Ridge, located in the Northeast Quarter of Section 10, Township 4 North, Range 68 West of the 6th Principal Meridian, Town of Johnstown, County of Weld, State of Colorado, except that portion conveyed in Book 1570 at Page 620, consisting of approximately 144 acres; and

WHEREAS, on October 13, 2021, the Planning and Zoning Commission held a public hearing and recommended approval of the P.U.D. Outline Development Plan Amendment 1 for Welty Ridge; and

WHEREAS, on October 18, 2021, the Town Council held a public hearing concerning approval of the P.U.D. Outline Development Plan Amendment 1 for Welty Ridge; and

WHEREAS, after considering the Planning and Zoning Commission's recommendation for approval, reviewing the file and conducting such public hearing, Town Council finds that the P.U.D. Outline Development Plan Amendment 1 for Welty Ridge is consistent with, and furthers the goals of, the *Johnstown Area Comprehensive Plan* goals and is compatible with all other applicable Town standards and regulation; and

WHEREAS, based on the foregoing, Town Council desires to approve the P.U.D. Outline Development Plan Amendment 1 for Welty Ridge.

NOW, THEREFORE, BE IT ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF JOHNSTOWN, COLORADO, THAT:

Section 1. P.U.D. Outline Development Plan Approval. The P.U.D. Outline Development Plan Amendment 1 for Welty Ridge, located in the Northeast Quarter of Section 10, Township 4 North, Range 68 West of the 6th Principal Meridian, Town of Johnstown, County of Weld, State of Colorado, except that portion conveyed in Book 1570 at Page 620, consisting of approximately 144 acres, attached hereto and incorporated herein by reference as Exhibit A, is hereby approved.

Section 2. Amendment. The P.U.D. Outline Development Plan Amendment 1 for Welty Ridge adopted herein shall amend certain portions of the Welty Ridge P.U.D. Outline Development Plan approved on January 22, 2020.

Section 3. Effective Date. This Ordinance, after its passage on final reading, shall be numbered, recorded, published and posted as required by the Home Rule Charter of the Town of Johnstown, Colorado ("Charter") and the adoption, posting and publication shall be authenticated by the signature of the Mayor and the Town Clerk and by the Certificate of Publication. This Ordinance shall become effective upon final passage as provided by the Charter. Copies of the entire Ordinance are available at the office of the Town Clerk.

INTRODUCED AND APPROVED on first reading by the Town Council of the Town of Johnstown, Colorado, this 18th day of October, 2021.

TOWN OF JOHNSTOWN, COLORADO

ATTEST:

By: _____
Diana Seele, Town Clerk

By: _____
Gary Lebsack, Mayor

PASSED UPON FINAL APPROVAL AND ADOPTED on second reading by the Town Council of the Town of Johnstown, Colorado, this _____ day of _____, 2021.

TOWN OF JOHNSTOWN, COLORADO

ATTEST:

By: _____
Diana Seele, Town Clerk

By: _____
Gary Lebsack, Mayor

OUTLINE DEVELOPMENT PLAN AMENDMENT 1
WELTY RIDGE

LOCATED IN SECTION 10, TOWNSHIP 4 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, IN JOHNSTOWN, COUNTY OF WELD, STATE OF COLORADO

ODP REVISION 02/23/2021

Item #6.

PROJECT INTENT

THE INTENT OF THIS OUTLINE DEVELOPMENT PLAN (ODP) IS TO PROVIDE OVERLAY ZONING TO THE 140+ ACRE WELTY RIDGE PROPERTY. WELTY RIDGE IS ENVISIONED AS A MIXED USE DEVELOPMENT WHICH INCLUDES PLANNING AREAS DESIGNATED FOR RESIDENTIAL, RETAIL, COMMERCIAL, LIGHT INDUSTRIAL, AND OFFICE USES. THIS DOCUMENT WILL GUIDE THE OVERALL CHARACTER OF WELTY RIDGE TO ENSURE THE QUALITY AND COHESIVENESS DESIRED IN THIS EMERGING PART OF NORTHERN COLORADO.

LEGAL DESCRIPTION

THE NE ¼ OF SECTION 10, TOWNSHIP 4 NORTH, RANGE 68 WEST OF THE 6TH P.M., COUNTY OF WELD, STATE OF COLORADO, EXCEPT THAT PORTION CONVEYED IN BOOK 1570 AT PAGE 620.

GENERAL NOTES

A. COMMERCIAL, OFFICE OR MULTI-FAMILY DEVELOPMENTS CAN OCCUPY THE SAME LOT, MIXED HORIZONTALLY OR VERTICALLY.

B. ALL UNPLATTED PROPERTY (PER THE FINAL PLAT SUBDIVISION PROCESS) WITHIN THIS PUD MAY REMAIN IN AGRICULTURAL USE UNTIL SUCH TIME AS DEVELOPMENT OF THAT AREA BEGINS.

C. LANDSCAPING, SIGNAGE, ARCHITECTURE, NON-RESIDENTIAL PARKING, FENCING AND LIGHTING FOR DEVELOPMENT WITH THIS PUD SHALL EITHER FOLLOW THOSE APPLICABLE STANDARDS IN THE TOWN OF JOHNSTOWN MUNICIPAL CODE OR THE DEVELOPER MAY FORMULATE DESIGN STANDARDS REGULATING THE DESIGN, CHARACTER, LOCATION AND OTHER DETAILS OF THESE ELEMENTS PRIOR TO THEIR IMPLEMENTATION. THE DEVELOPER-FORMULATED DESIGN STANDARDS MUST RECEIVE TOWN APPROVAL PRIOR TO IMPLEMENTATION.

D. WHERE A PROPOSED USE IS NOT LISTED IN THE ODP, IT MAY BE ALLOWED IF DETERMINED IN WRITING BY PLANNING AND DEVELOPMENT DIRECTOR TO BE SIMILAR IN CHARACTER AND OPERATION, AND HAVING THE SAME OR LESSER IMPACT, AS USES THAT ARE ALLOWED.

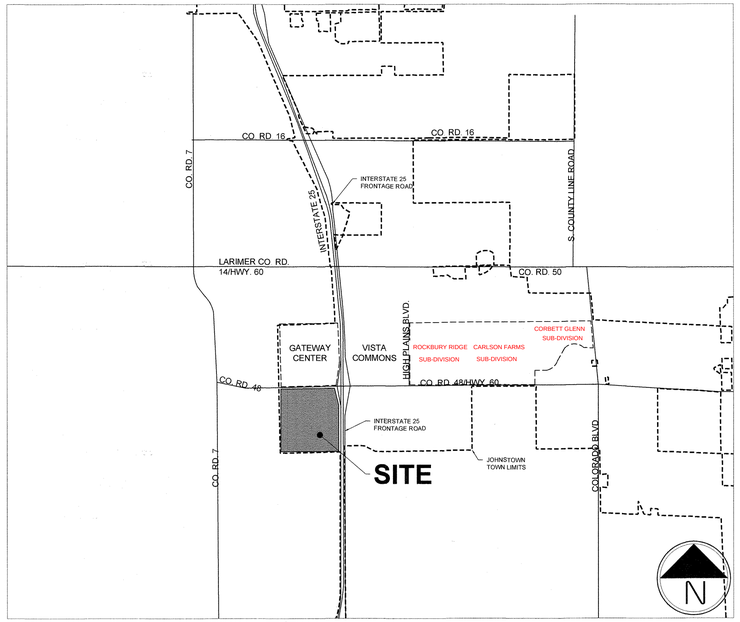
E. ALL DRAINAGE ELEMENTS ARE CONCEPTUAL IN NATURE AND FINAL DETERMINATIONS OF THE DRAINAGE SYSTEM, TO INCLUDE THE PLACEMENT OF DETENTION/RETENTION PONDS, CHANNELS, AND STORM SEWER, WILL BE MADE IN ACCORDANCE WITH THE APPLICABLE FINAL DRAINAGE REPORTS AND PLANS.

DEVELOPMENT PHASING

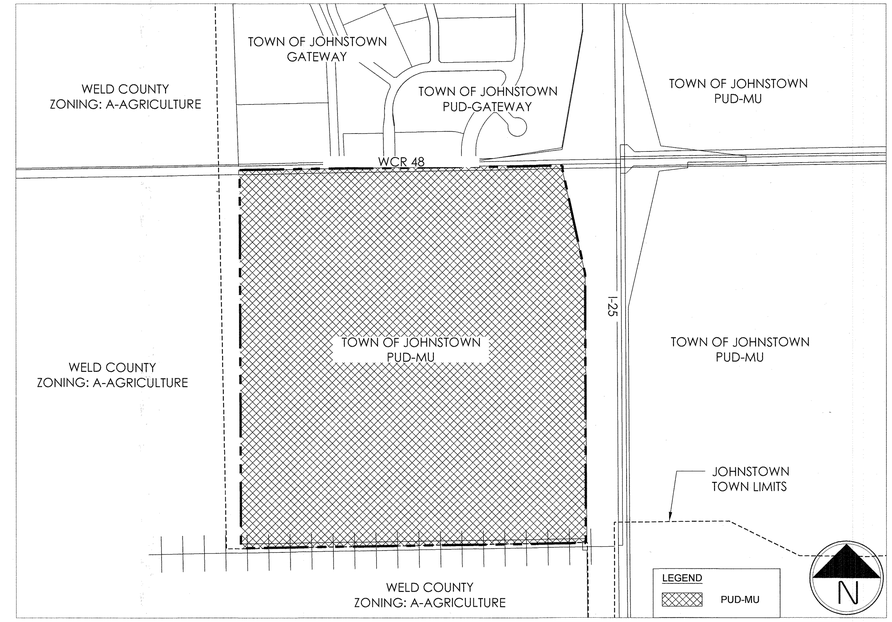
PHASING WILL OCCUR IN A LOGICAL AND COST EFFECTIVE MANNER BASED ON INFRASTRUCTURE EXTENSION, AVAILABILITY OF UTILITY SERVICE, AND MARKET CONDITIONS. THE PROJECT WILL BE BUILT IN MULTIPLE PHASES, AS CONDITIONS DICTATE.

RELATIONSHIP TO TOWN CODE & DEVELOPMENT STANDARDS

THE PROVISIONS OF THIS PUD SHALL PREVAIL AND GOVERN DEVELOPMENT TO THE EXTENT PERMITTED BY THE TOWN OF JOHNSTOWN MUNICIPAL CODE. WHERE STANDARDS, DETAILS, AND GUIDELINES OF THE PUD - OUTLINE, PRELIMINARY, OR FINAL DEVELOPMENT PLANS - DO NOT CLEARLY ADDRESS A SPECIFIC SUBJECT OR ARE SILENT, THE JOHNSTOWN MUNICIPAL AND OTHER STANDARDS, REGULATIONS, AND GUIDELINES SHALL BE USED. ALL PROPOSED DEVELOPMENT IS SUBJECT TO TOWN OF JOHNSTOWN REVIEW PROCEDURES.



VICINITY MAP 1"=3000'



EXISTING ZONING 1"=500'

APPROVALS

TOWN COUNCIL

THIS OUTLINE DEVELOPMENT PLAN, TO BE KNOWN AS WELTY RIDGE ODP, IS APPROVED AND ACCEPTED BY THE TOWN OF JOHNSTOWN, BY ORDINANCE NUMBER 2020-167 PASSED AND ADOPTED ON FINAL READING AT A REGULAR MEETING OF THE TOWN COUNCIL OF THE TOWN OF JOHNSTOWN, COLORADO HELD ON THE 05 DAY OF January, 2020.

BY: _____ MAYOR ATTEST: _____ TOWN CLERK

AMENDMENT 1

THIS OUTLINE DEVELOPMENT PLAN, TO BE KNOWN AS AMENDMENT 1, IS APPROVED AND ACCEPTED BY THE TOWN OF JOHNSTOWN, BY ORDINANCE NUMBER _____ PASSED AND ADOPTED ON FINAL READING AT A REGULAR MEETING OF THE TOWN COUNCIL OF THE TOWN OF JOHNSTOWN, COLORADO HELD ON THE _____ DAY OF _____, 20____

BY: _____ MAYOR ATTEST: _____ TOWN CLERK

OWNER
PLATTE LAND & WATER, LLC
210 UNIVERSITY BLVD.
SUITE 710
DENVER, CO 80206
303-263-2105

PROJECT MANAGER
ERIK HALVERSON
LAND ASSET STRATEGIES, LLC
15400 WEST 64TH AVENUE
UNIT E9-123
ARVADA, CO 80007
970-319-5836
ehalverson@landassetstrategies.com

ENGINEER
KEVIN ROHRBOUGH
CORE CONSULTANTS
1950 W LITTLETON BLVD.
SUITE 109
LITTLETON, CO 80120
303-703-4444
rohrbough@corecivil.com

PLANNER
JEFF MARCK
TERRACINA DESIGN
10200 E. GIRARD AVENUE
BLDG. A, SUITE 314
DENVER, CO 80231
303-632-8867
jmarck@terracinadesign.com

AMENDMENT ENGINEER
KYLE WATSON
KIMLEY-HORN & ASSOCIATES
4582 S ULSTER STREET
ST. 1500
DENVER, CO 80210
720-943-5665
kyle.watson@kimley-horn.com

SHEET INDEX

☐= Sheets being amended

1	COVER
2	LAND USE PLAN
3-4	LAND USE MATRIX
5	CIRCULATION PLAN
6	STREET SECTIONS
7	TRAILS & OPEN SPACE PLAN
8	CONCEPTUAL UTILITY PLAN
9	CONCEPTUAL GRADING PLAN
10	DEVELOPMENT STANDARDS
11-12	DESIGN GUIDELINES

Kimley»Horn

terracina design
10200 E. Girard Ave, Bldg A-314
Denver, CO 80231
ph: 303.632.8867

PLATTE LAND & WATER, LLC

CORE CONSULTANTS

#	REVISION DESCRIPTION	DATE	BY
1	APPROVED ODP	JANUARY 22, 2020	

WELTY RIDGE
JOHNSTOWN, CO
OUTLINE DEVELOPMENT PLAN
COVER

DESIGNED BY: JM
DRAWN BY: KB
CHECKED BY: JM

AMENDED SHEET 1 OF 12

1/29/2020 10:21 AM , P:\PLATTE LAND & WATER\GREAT PLAINS - WELTY\CAD\SUBMITTALS\WELTY ODP\WELTY-ODP-COVER.DWG.

4575191 Pages: 2 of 12
03/18/2020 10:59 AM R Fee:$123.00
Carly Koenes, Clerk and Recorder, Weld County, CO

OUTLINE DEVELOPMENT PLAN AMENDMENT 1
WELTY RIDGE

LOCATED IN SECTION 10, TOWNSHIP 4 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, IN JOHNSTOWN, COUNTY OF WELD, STATE OF COLORADO

A. INTRODUCTION

THE PURPOSE OF THIS SECTION IS TO ESTABLISH GENERAL PROVISIONS AND CLARIFY STANDARDS AND REQUIREMENTS FOR DEVELOPMENT WITHIN THE WELTY RIDGE PUD. DUE TO THE SIZE OF LAND AREA CONTAINED WITHIN THIS PUD AND THE CORRESPONDING LONG TERM BUILD OUT THAT IS ANTICIPATED, A RATHER BROAD RANGE OF DENSITIES AND/OR SQUARE FOOTAGES HAVE BEEN PROPOSED FOR EACH LAND USE PARCEL. THESE RANGES WILL ALLOW A VARIETY OF COMMERCIAL, LIGHT INDUSTRIAL, AND HOUSING PRODUCTS. IN ADDITION TO PROMOTING LAND USE AND DENSITY FLEXIBILITY, RANGES WILL ACCOMMODATE HOUSING PRODUCT, LAND PLANNING, MARKET AND TECHNOLOGICAL CHANGES INTO THE FUTURE. REFER TO THE PLANNING AREA SUMMARY FOR SPECIFIC DENSITIES AND SQUARE FOOTAGES.

B. DENSITY RANGES

RESIDENTIAL DENSITY RANGES ARE SPECIFIED WITHIN EACH ZONE AS LABELED ON THE LAND USE PLAN (REFER TO THE PLANNING AREA SUMMARY WITHIN THIS DOCUMENT FOR DENSITY RANGES). THE FINAL AVERAGE DENSITY OF A DEVELOPMENT PARCEL MUST BE WITHIN 10% THE SPECIFIED DENSITY RANGE INDICATED FOR THAT PLANNING AREA. THE FINAL AVERAGE DENSITY OF A PLANNING AREA SHALL BE BASED ON ALL RESIDENTIAL UNITS APPROVED THROUGH THE FINAL PLAT PROCESS WITHIN THE PLANNING AREA, WHETHER APPROVED AS A SINGLE PLAT OR AS MULTIPLE PLATS.

C. MAXIMUM RESIDENTIAL UNITS PER AREA

TRANSFER(S) OF RESIDENTIAL UNITS FROM PLANNING AREA TO PLANNING AREA (TRANSFER OF UNITS MAY NOT EXCEED 30% OF THE RECIPIENT PLANNING AREA MAX UNITS PER AREA) MAY BE PERMITTED BY THE DEVELOPER WITH APPROVAL BY THE PLANNING AND DEVELOPMENT DIRECTOR. UNIT TRANSFERS SHALL BE TRACKED BY THE DEVELOPER AND PROVIDED TO THE PLANNING AND DEVELOPMENT DIRECTOR WITH EACH SUCH TRANSFER AT THE FINAL PLAT STAGE OF THE SUBDIVISION PROCESS. HOWEVER, AT NO TIME SHALL THE TOTAL RESIDENTIAL UNITS WITHIN THIS PUD EXCEED 850 WITHOUT AN AMENDMENT TO THE ODP, APPROVED BY TOWN COUNCIL.

D. RESIDENTIAL UNITS TRANFERS

ONCE A PLANNING AREA HAS BEEN FULLY PLATTED THROUGH THE FINAL PLAT PROCESS, ANY REMAINING RESIDENTIAL DENSITY/UNITS DESIGNATED ON THE PUD ZONE DOCUMENT WITHIN SAID PLANNING AREA SHALL REMAIN AVAILABLE FOR TRANSFER TO OTHER REMAINING RECIPIENT PLANNING AREAS.

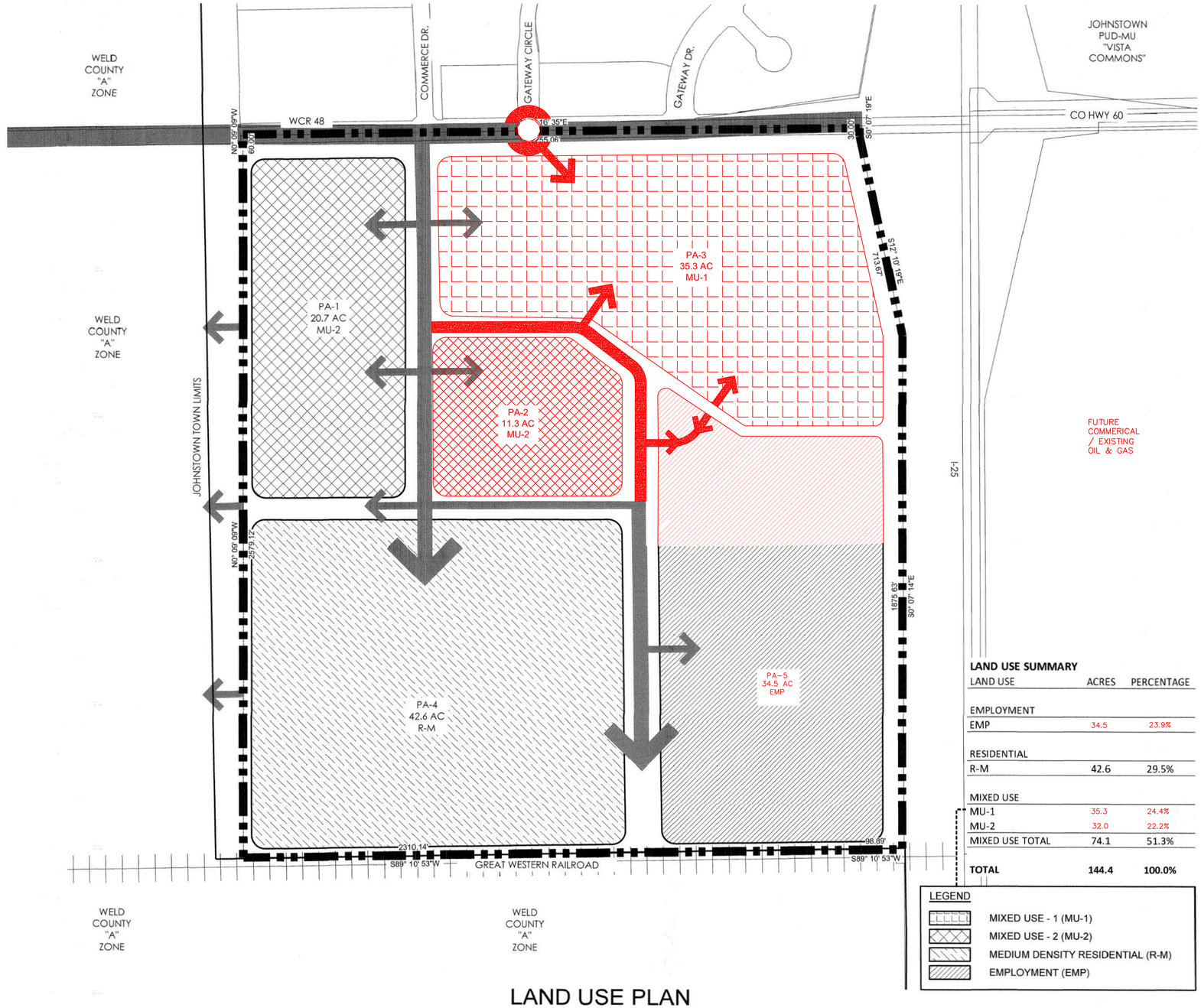
E. PLANNING AREA BOUNDARIES

PLANNING AREA ACREAGES AND BOUNDARIES ARE CONCEPTUAL AND SUBJECT TO CHANGE WITH DETAILED PLANNING. PLANNING AREA ACREAGES MAY CHANGE UP TO 30% WITH APPROVAL BY THE PLANNING AND DEVELOPMENT DIRECTOR. SUCH CHANGES WILL RESULT IN CORRESPONDING CHANGES TO THE MAX SQ. FT./AREA OR MAX UNITS/AREA SHOWN IN THE PLANNING AREA SUMMARY.

IF PLANNING AREA CHANGES ARE MADE, ALL STREET CLASSIFICATIONS (AS SHOWN ON SHEET 6) ARE SUBJECT TO CHANGE.

F. MAXIMUM COMMERCIAL SQUARE FOOTAGE PER AREA

TRANSFER(S) OF COMMERCIAL SQUARE FOOTAGE FROM PLANNING AREA TO PLANNING AREA (TRANSFER OF SQUARE FOOTAGE MAY NOT EXCEED 30% OF THE RECIPIENT PLANNING AREA MAX SQ. FT. PER AREA) MAY BE PERMITTED WITH APPROVAL BY THE PLANNING AND DEVELOPMENT DIRECTOR. SQUARE FOOTAGE TRANSFERS SHALL BE TRACKED BY THE DEVELOPER AND PROVIDED TO THE PLANNING AND DEVELOPMENT DIRECTOR WITH EACH SUCH TRANSFER AT THE FINAL PLAT STAGE OF THE SUBDIVISION PROCESS. HOWEVER, AT NO TIME SHALL THE OVERALL PUD COMMERCIAL SQUARE FOOTAGE EXCEED 700,000 SQUARE FEET WITHOUT AN AMENDMENT TO THE ODP, APPROVED BY TOWN COUNCIL.



LAND USE PLAN

LAND USE SUMMARY

LAND USE	ACRES	PERCENTAGE
EMPLOYMENT		
EMP	34.5	23.9%
RESIDENTIAL		
R-M	42.6	29.5%
MIXED USE		
MU-1	35.3	24.4%
MU-2	32.0	22.2%
MIXED USE TOTAL	74.1	51.3%
TOTAL	**144.4**	**100.0%**

LEGEND
- MIXED USE - 1 (MU-1)
- MIXED USE - 2 (MU-2)
- MEDIUM DENSITY RESIDENTIAL (R-M)
- EMPLOYMENT (EMP)

PLANNING AREA SUMMARY

PLANNING AREA	LAND USE	APPROX. ACRES	COMMERCIAL MAX SQ.FT./AREA	RESIDENTIAL MIN. DU /ACRE	RESIDENTIAL MAX. DU /ACRE	RESIDENTIAL MAX UNITS/AREA
PA-1	MIXED USE-2	20.7	270508.00	3	15	311
PA-2	MIXED USE-2	11.3	147668.00	3	15	170
PA-3	MIXED USE-1	35.3	461301.00			243
PA-4	MEDIUM DENSITY RESIDENTIAL	42.6		3	6	256
PA-5	EMPLOYMENT	34.5	450846.00			

DENSITY TRANSFER TRACKING CHART

PLANNING AREA	APPROVED DENSITY PRIOR TO TRANSFER: ACRES	APPROVED DENSITY PRIOR TO TRANSFER: RESIDENTIAL UNITS	APPROVED DENSITY AFTER TRANSFER: DENSITY TRANSFER	APPROVED DENSITY AFTER TRANSFER: RESIDENTIAL UNITS
X				
Y				
Z				
TOTAL				

Scale: 1"= 200'-0"
0 100 200 400
N

ODP REVISION 02/23/2021

Kimley»Horn
terracina design 10200 E. Girard Ave, Ste A-314 Denver, CO 80231 ph: 303.632.8867
PLATTE LAND & WATER, LLC
CORE CONSULTANTS

#	REVISION DESCRIPTION	DATE	BY
1	APPROVED ODP	JANUARY 22, 2020	

WELTY RIDGE
JOHNSTOWN, CO
OUTLINE DEVELOPMENT PLAN
LAND USE PLAN

DESIGNED BY: JM
DRAWN BY: KB
CHECKED BY: JM

AMENDED
SHEET 2 OF 12

1/29/2020 10:22 AM - P:\PLATTE LAND & WATER\GREAT PLAINS - WELTY\CAD\SUBMITTALS\WELTY ODP\WELTY-ODP-LAND-USE-PLAN.DWG;

OUTLINE DEVELOPMENT PLAN AMENDMENT 1
WELTY RIDGE

LOCATED IN SECTION 10, TOWNSHIP 4 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, IN JOHNSTOWN, COUNTY OF WELD, STATE OF COLORADO

LAND USE CLASSIFICATION	SPECIFIC USE TYPE				
AGRICULTURAL USES		**MU-1**	**MU-2**	**EMP**	**R-M**
Agriculture or Ranch Use	Agriculture	X	X	X	X
	Community Gardens	X	X	X	X
Accessory Structures	Accessory Structures for Agriculture/ Ranching Operations	X	X	X	X
Animals / Livestock	Farm or Ranch Animal Center*	C	-	C	-
	Rodeos*	-	-	C	-
	Commercial Stables*	-	-	C	-
	Private Stables*	-	-	C	-
Horticulture and Nurseries	Outdoor Nursery / Tree Production	C	-	X	-
	Greenhouse/nursery/tree production	C	-	X	-
Markets	Farmers Markets	X	X	X	C
COMMERCIAL USES		**MU-1**	**MU-2**	**EMP**	**R-M**
Animal Services	Animal boarding (indoor) and training**	C	C	C	C
	Veterinary offices or clinics	X	X	X	-
Vehicle Parking	Vehicle parking lot	A	A	C	A
	Private park & ride lot, car pool lot or equivalent	X	X	X	-
Building Materials & Services (Retail)	Landscape equipment, hardscape materials (with outdoor storage)	C	-	C	-
Eating and Drinking Establishments	Bar, Tavern/Pub, Beer Tasting/Tap Room	X	X	X	-
	Catering services	X	X	X	-
	Restaurant with or without drive-thru / up	X	X	X	-
Office	Business or professional office (including medical / dental office / clinics)	X	X	X	-
	Call Centers	X	-	X	-
	Courier services	X	X	X	-
	Home Occupations	X	X	-	A
	Temporary Construction offices	X	X	X	X
	Temporary Sales Offices	X	X	X	X
Personal Services	Instructional services, studios, photography, salons/spas	X	X	X	-

*ANIMAL/LIVESTOCK USES ARE CONDITIONAL USES IF WITHIN 250 FEET OF A RESIDENTIAL USE, BUT ARE PERMITTED USE-BY-RIGHT OUTSIDE OF THE 250 FOOT LIMIT FROM RESIDENTIAL USES.
**ANIMAL BOARDING AND TRAINING IS A CONDITIONAL USE IF WITHIN 250 FEET OF A RESIDENTIAL USE, BUT IS A PERMITTED USE-BY-RIGHT OUTSIDE OF THE 250 FOOT LIMIT FROM RESIDENTIAL USES.

LAND USE CLASSIFICATION	SPECIFIC USE TYPE				
COMMERCIAL USES		**MU-1**	**MU-2**	**EMP**	**R-M**
Recreation / Amusement Facilities	Permanent or Seasonal Amusement Parks	C	-	X	-
	Entertainment - Indoor	X	X	X	-
	Entertainment - Outdoor	X	X	X	-
	Movie theaters or Drive-in Theater	C	-	X	-
	Health clubs	X	X	X	-
	Parks and dog parks	X	X	X	X
	Public and Private Golf Courses and Related Facilities	X	X	X	X
	Outdoor Skateboard Parks	X	X	X	C
	Community / Neighborhood Recreation Center	X	X	X	X
	Small Theaters (Outdoor Performances)	X	X	X	X
Retail	Convenience store / grocery store *** (with or without gas)	X	X	X	-
	Ground floor retail with office or residential on upper levels	X	X	-	-
	Retail	X	X	X	-
Repair Services (Not Including Vehicles)	Furniture or major household appliance or electronics repair	X	-	X	-
	Machinery, excluding truck trailers, heavy equipment, and farm machinery	-	-	X	-
Vehicle / Equipment Sales and Services	Vehicle rentals with lot	C	-	C	-
	Auto Sales and Repair (equal to or less than 4 repair bays)	X	-	X	-
	Auto Sales and Repair (more than 4 repair bays)	C	-	X	-
	Car Wash	X	X	X	-
	RV's, Trailer, Camper, and Limited Equipment (U-Haul type business) rentals	C	-	C	-
	Major vehicle/equipment repair with outdoor storage (includes auto body repair, paint shops, and incidental sales of parts)	-	-	C	-
	Major vehicle/equipment repair without outdoor storage (includes auto body repair, paint shops, and incidental sales of parts)	-	-	X	-
	Motor vehicle dealer / sales, new and used RV's, trailers, and campers)	C	-	C	-
	Automotive service stations	X	X	X	-
Visitor Accommodations	Hotel or motel lodging establishments	X	X	X	-
	Overnight Campground with RV parking	C	-	C	-

*** the 5,000 SF limitation has been removed in the convenience store/gas station land use table

LEGEND

X PRINCIPAL PERMITTED USE
A ACCESSORY USE
\- EXCLUDED USE
C CONDITIONAL USE

LAND USE

MIXED USE 1 (MU-1)
MIXED USE 2 (MU-2)
MEDIUM DENSITY RESIDENTIAL (R-M)
EMPLOYMENT (EMP)

MIXED USE 1 (MU-1): PREDOMINANTLY A LARGE COMMERCIAL/LIGHT INDUSTRIAL FOCUS. THIS ZONE ALLOWS FOR LIGHT INDUSTRIAL AND WAREHOUSING USES ALONG WITH COMMERCIAL AND MULTI-FAMILY USES.

MIXED USE 2 (MU-2): PREDOMINANTLY A NEIGHBORHOOD COMMERCIAL / RESIDENTIAL FOCUS. THIS ZONE PRIMARILY ALLOWS FOR COMMERCIAL USES ALONG WITH HIGH DENSITY RESIDENTIAL.

MEDIUM DENSITY RESIDENTIAL (R-M): THE INTENT IS TO ALLOW FOR SINGLE FAMILY DETACHED HOMES AND SINGLE FAMILY ATTACHED HOMES.

EMPLOYMENT (EMP): THE INTENT IS TO PROVIDE AREAS THAT WILL SERVE AS AN EMPLOYMENT CENTER OR OFFICE PARK THAT CAN ACCOMMODATE BUT NOT LIMITED TO CORPORATE CAMPUS, RESEARCH AND DEVELOPMENT, LIGHT INDUSTRIAL, OFFICE/FLEX, RETAIL, COMMERCIAL, WAREHOUSE AND DISTRIBUTION.

DEFINITIONS:

1. LIGHT INDUSTRIAL - LABOR-INTENSIVE OPERATIONS THAT TYPICALLY PRODUCE PRODUCTS THAT ARE TARGETED TOWARD END CONSUMERS RATHER THAN OTHER BUSINESSES (I.E. CONSUMER ELECTRONICS, CLOTHING MANUFACTURING, ETC.)
2. CLUSTER HOMES - ANY RESIDENTIAL GROUPING OF AT LEAST TWO HOMES WHICH ACCESS OFF A COMMON/SHARED DRIVE OR ALLEY.
3. MOTOR COURT - A TYPE OF CLUSTER HOME WITH A SHARED DRIVEWAY IN WHICH SOME OR ALL FRONT DOORS ACCESS OFF SHARED DRIVEWAY.
4. GREEN COURT - A TYPE OF CLUSTER HOME WITH SHARED DRIVEWAY AND COMMON OPEN AREA.
5. OPEN AREA - A PRIVATELY OR PUBLICLY OWNED AND MAINTAINED LAND AREA OR BODY OF WATER OR BOTH WITHIN A DEVELOPMENT UPON WHICH THERE ARE NO STRUCTURES, PARKING AREAS, OR DRIVEWAYS. OPEN AREA MAY BE A LANDSCAPED AREA, PLAZA, RECREATIONAL AREA, SIDEWALKS, OR SUCH OTHER AREAS. LANDSCAPE AND WALKS LOCATED IN RIGHT-OF-WAY CAN NOT BE COUNTED TOWARDS OPEN AREA REQUIREMENT.
6. USABLE OPEN AREA - A PARCEL OF LAND OWNED AND MAINTAINED BY A TOWN, METRO DISTRICT, OR HOME OWNERS' ASSOCIATION WHICH MEETS THE CRITERIA OF OPEN AREA AND IS PROGRAMMED AS AN ACTIVE OR PASSIVE AREA IN WHICH RESIDENTS CAN UTILIZE THE SPACE FOR, BUT IS NOT LIMITED TO, SEATING, SPORTS, PARKS, TRAILS, OR GARDENS.
7. A LIVE/WORK UNIT IS DEFINED AS A SINGLE UNIT CONSISTING OF BOTH A COMMERCIAL/OFFICE AND A RESIDENTIAL (PRIMARY DWELLING) COMPONENT THAT IS OCCUPIED BY THE SAME RESIDENT.

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PLATTE LAND & WATER, LLC

CORE CONSULTANTS

#	REVISION DESCRIPTION	DATE	BY
1	APPROVED ODP	JANUARY 22, 2020	

WELTY RIDGE
JOHNSTOWN, CO

OUTLINE DEVELOPMENT PLAN
LAND USE MATRIX

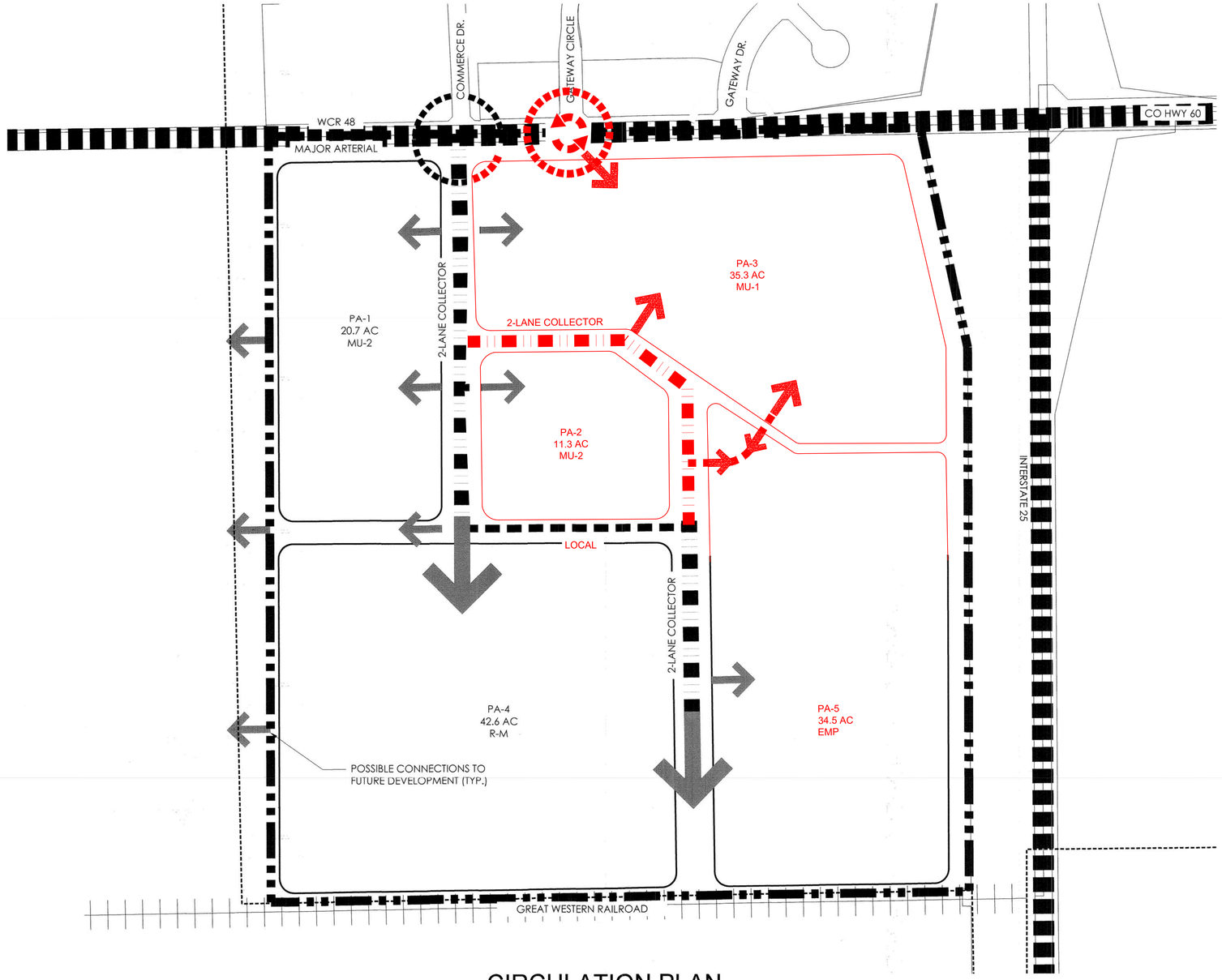
DESIGNED BY: JM
DRAWN BY: KB
CHECKED BY: JM

AMENDED
SHEET
3 OF 12

1/29/2020 10:22 AM - P:\PLATTE LAND & WATER\GREAT PLAINS -WELTY\CAD\SUBMITTALS\WELTY ODP\WELTY-ODP-LAND-USE-PLAN.DWG

4575191 Pages: 5 of 12
03/16/2020 10:59 AM R Fee:$123.00
Carly Koonce, Clerk and Recorder, Weld County, CO

OUTLINE DEVELOPMENT PLAN AMENDMENT 1
WELTY RIDGE
LOCATED IN SECTION 10, TOWNSHIP 4 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, IN JOHNSTOWN, COUNTY OF WELD, STATE OF COLORADO



CIRCULATION PLAN

Scale: 1"= 200'-0"

0 100 200 400

N

LEGEND

- COLLECTOR (2-LANE & 4-LANE)
- MAJOR ARTERIAL/HIGHWAY
- LOCAL
- PROPOSED* FULL MOVEMENT INTERSECTION
- POTENTIAL ACCESS
- PROPOSED ROUNDABOUT

*DEPENDENT ON TRAFFIC IMPACT STUDY AT TIME OF INDIVIDUAL DEVELOPMENT APPROVALS

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ODP REVISION 02/25/2021

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PLATTE LAND & WATER, LLC

CORE CONSULTANTS

#	REVISION DESCRIPTION	DATE	BY
1	APPROVED ODP	JANUARY 22, 2020	

WELTY RIDGE
JOHNSTOWN, CO

OUTLINE DEVELOPMENT PLAN
CIRCULATION PLAN

DESIGNED BY: JM
DRAWN BY: KB
CHECKED BY: JM

AMENDED
SHEET
5 OF 12

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4575191 Pages: 7 of 12
03/10/2020 10:59 AM R Fee:$123.00
Carly Koppes, Clerk and Recorder, Weld County, CO

OUTLINE DEVELOPMENT PLAN AMENDMENT 1
WELTY RIDGE

LOCATED IN SECTION 10, TOWNSHIP 4 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, IN JOHNSTOWN, COUNTY OF WELD, STATE OF COLORADO

OPEN AREA

A. FOR THE PURPOSES OF THIS PUD, "OPEN SPACE OR LANDSCAPE AREA" IS REFERRED TO AS "OPEN AREA."

B. OPEN AREA PROVIDED PER THE REQUIREMENTS OF THIS PUD WILL MEET ALL LANDSCAPE AREA, OPEN SPACE AREA, OR SIMILAR AREAS REQUIRED PER THE JOHNSTOWN CODE REQUIREMENTS.

C. SINGLE FAMILY DETACHED OR ATTACHED RESIDENTIAL DEVELOPMENT WILL REQUIRE A MINIMUM 15% OPEN AREA.

D. MULTI-FAMILY RESIDENTIAL DEVELOPMENT WILL REQUIRE A MINIMUM OF 30% OPEN AREA.

E. COMMERCIAL AND LIGHT INDUSTRIAL DEVELOPMENT WILL REQUIRE A MINIMUM 20% OPEN AREA.

F. OPEN AREA REQUIREMENTS WILL BE CALCULATED ON A NET BASIS EXCLUDING PUBLIC RIGHT OF WAY.

G. LANDSCAPE BUFFERS AND DETENTION PONDS CAN COUNT TOWARDS OPEN AREA REQUIREMENT.OPEN AREA MAY BE CUMULATIVELY GATHERED INTO LARGER PARCELS (FOR THE PURPOSES OF DEVELOPING A LARGER AND MORE FUNCTIONAL OPEN AREA) AT THE DISCRETION OF THE DEVELOPER AND WITH THE APPROVAL OF THE PLANNING AND DEVELOPER DIRECTOR. THE LOCATION(S) OF THE CUMULATIVELY GATHERED OPEN AREA SHALL BE DESIGNATED AT THE TIME OF EACH PRELIMINARY AND FINAL DEVELOPMENT PLAN THAT IS CONTRIBUTING TO THAT OPEN AREA.

H. OPEN SPACE LOCATED WITHIN A SINGLE FAMILY DETACHED OR SINGLE FAMILY ATTACHED LOT CAN NOT BE COUNTED TOWARDS OPEN AREA REQUIREMENT.

I. USABLE OPEN AREA CAN COUNT TOWARDS OPEN AREA REQUIREMENT.

USABLE OPEN AREA

A. WELTY RIDGE REQUIRES A 10% USABLE OPEN AREA FOR RESIDENTIAL AREAS. FOR PURPOSES OF THIS PUD, THE 10% USABLE OPEN AREA SHALL BE CALCULATED FROM THE TOTAL AREA OF ALL RESIDENTIAL LOTS AND ADJACENT LOCAL ROADWAYS THAT SERVE AS DIRECT ACCESS TO THE RESIDENTIAL LOTS.

B. USABLE OPEN AREA PROVIDED PER THE REQUIREMENTS OF THIS PUD WILL MEET ALL DEDICATED OPEN SPACE REQUIREMENTS PER THE JOHNSTOWN CODE.

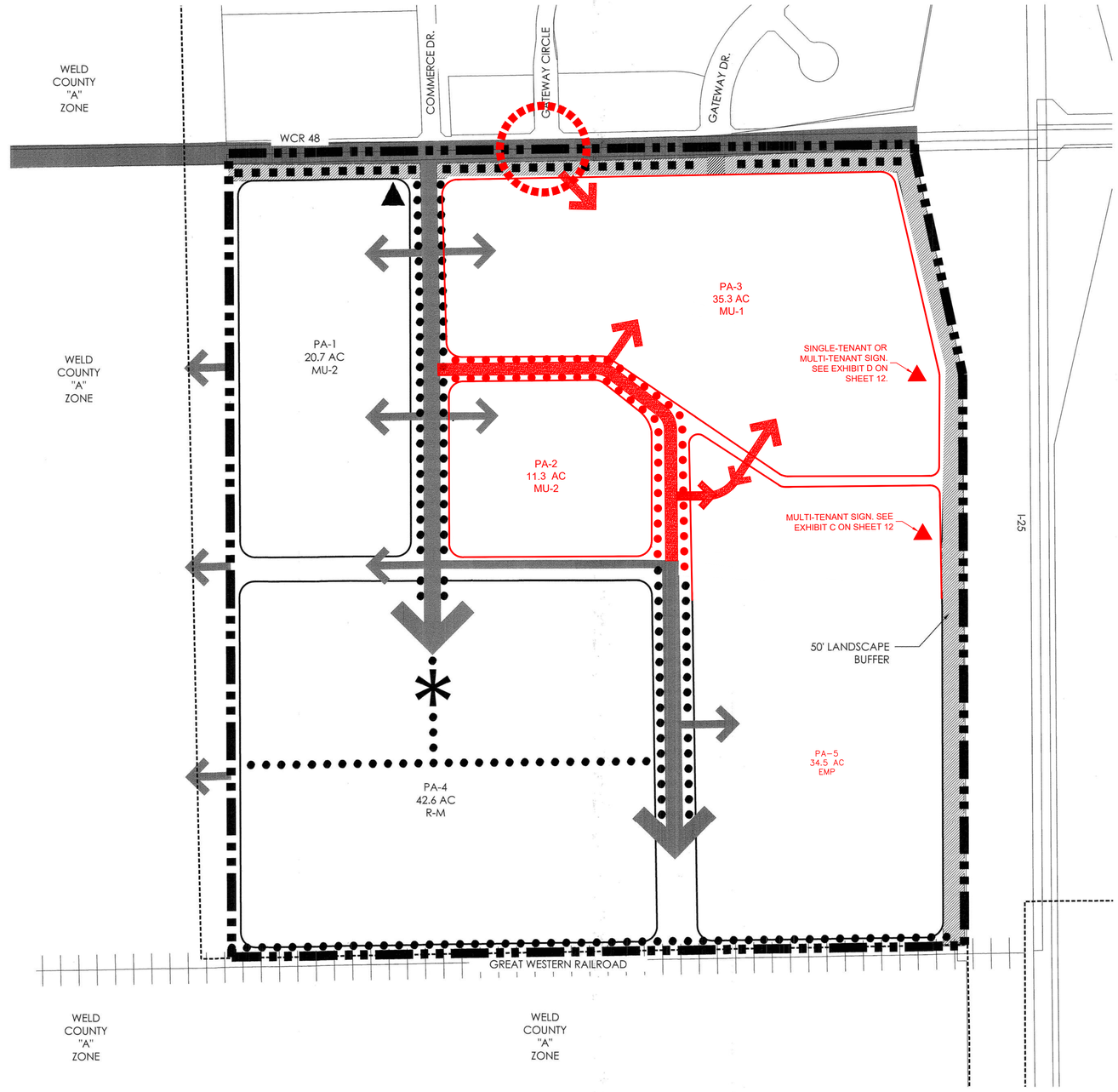
C. USABLE OPEN AREA MAY BE CUMULATIVELY GATHERED INTO LARGER PARCELS (FOR THE PURPOSES OF DEVELOPING AT LARGER AND MORE FUNCTIONAL PARK OR SIMILAR USES) AT THE DISCRETION OF THE DEVELOPER AND WITH THE APPROVAL OF THE PLANNING AND DEVELOPMENT DIRECTOR. THE LOCATION(S) OF THE CUMULATIVELY GATHERED USEABLE OPEN AREA SHALL BE DESIGNATED AT THE TIME OF EACH FINAL PLAT THAT IS CONTRIBUTING TO THAT AREA.

D. A MINIMUM OF 1 ACRE OF PARK PER 250 RESIDENTIAL UNITS IS REQUIRED.

E. USABLE OPEN AREA MAY OWNED BY THE TOWN, METRO DISTRICT, OR HOA. OWNERSHIP TO BE DETERMINED AT THE TIME OF PRELIMINARY AND FINAL DEVELOPMENT PLANS

F. WHERE PRACTICAL USABLE OPEN AREA SHOULD BE CONTIGUOUS.

G. DETENTION PONDS CAN COUNT TOWARDS USABLE OPEN AREA REQUIREMENTS AS LONG AS THEY MEET THE DEFINITION OF USABLE OPEN AREA PROVIDED IN THIS DOCUMENT. NOT MORE THAN 5% OF THE USABLE OPEN AREA REQUIREMENT CAN BE MET WITH DETENTION PONDS.



TRAILS & OPEN SPACE PLAN

LEGEND

- 5' PEDESTRIAN WALK
- 10' PEDESTRIAN WALK
- PARK
- PRIMARY MONUMENTATION
- LANDSCAPE BUFFER

Scale: 1"= 200'-0"

0 100 200 400

N

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PLATTE LAND & WATER, LLC

CORE CONSULTANTS

#	REVISION DESCRIPTION	DATE	BY
1	APPROVED ODP	JANUARY 22, 2020	

WELTY RIDGE
JOHNSTOWN, CO

OUTLINE DEVELOPMENT PLAN
TRAILS & OPEN SPACE PLAN

DESIGNED BY: JM
DRAWN BY: KB
CHECKED BY: JM

AMENDED
SHEET
7 OF 12

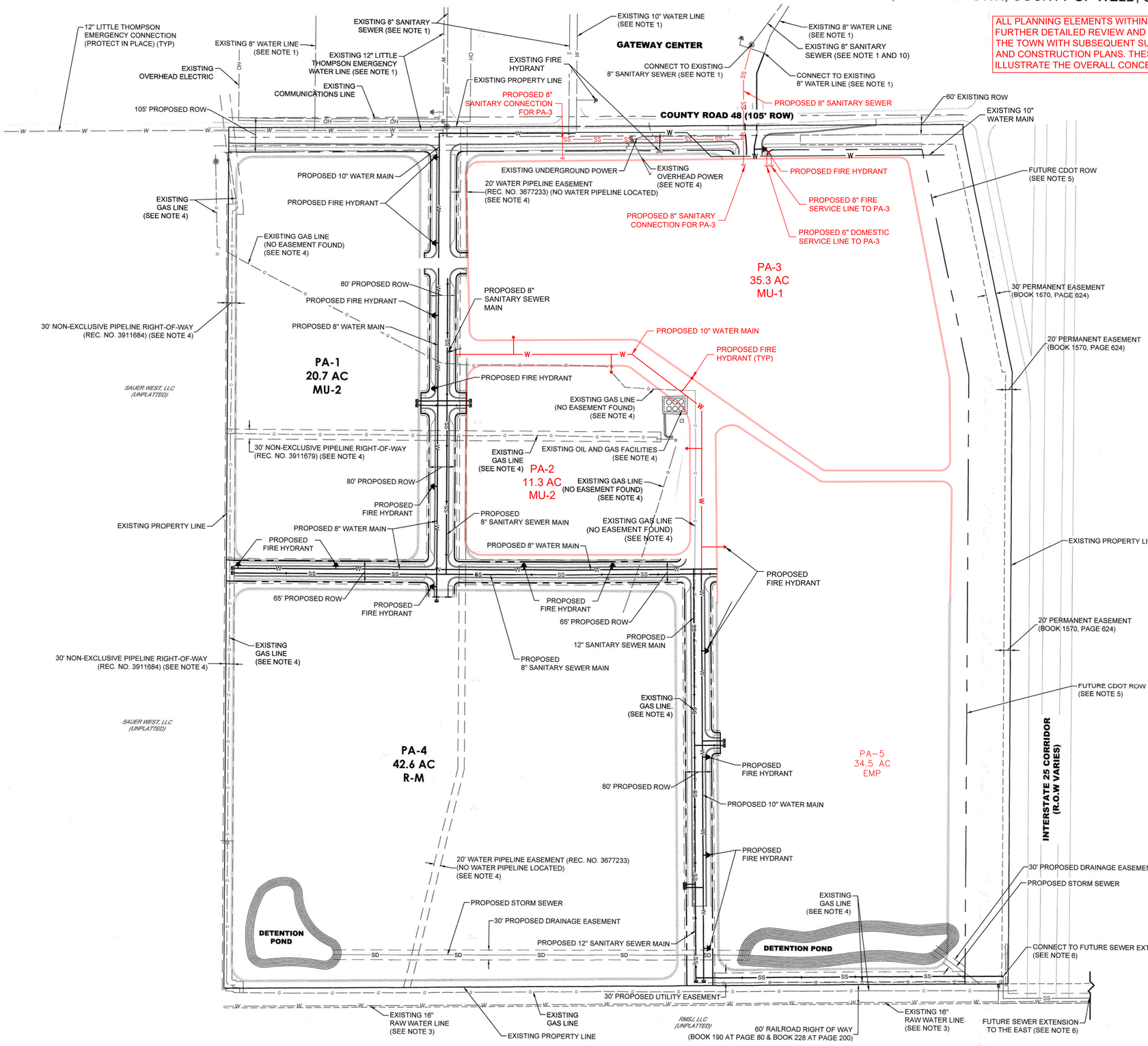
1/29/2020 10:22 AM - P:\PLATTE LAND & WATER\GREAT PLAINS -WELTY\CAD\SUBMITTALS\WELTY ODP\WELTY-ODP-TRAILS-AND-OPEN-SPACE.DWG

4575191 Pages: 8 of 12
03/10/2020 10:59 AM R Fee:$123.00
Carly Koepes, Clerk and Recorder, Weld County, CO

OUTLINE DEVELOPMENT PLAN AMENDMENT 1
WELTY RIDGE

LOCATED IN SECTION 10, TOWNSHIP 4 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, IN JOHNSTOWN, COUNTY OF WELD, STATE OF COLORADO

ALL PLANNING ELEMENTS WITHIN THIS ODP ARE SUBJECT TO FURTHER DETAILED REVIEW AND UPDATED REQUIREMENTS OF THE TOWN WITH SUBSEQUENT SUBMITTALS FOR DEVELOPMENT AND CONSTRUCTION PLANS. THESE PLANS ARE INCLUDED TO ILLUSTRATE THE OVERALL CONCEPTS ONLY.



0 150' 300'
1 inch = 150 ft.

NOTES

1. THE SIZE AND LOCATION OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE AND BASED OFF THE BEST AVAILABLE INFORMATION WHEN SHOWN ON THESE DRAWINGS. EXACT LOCATION OF EXISTING UTILITIES AND TIE–IN POINTS SHALL BE DETERMINED/CONFIRMED DURING FINAL DESIGN. BEFORE COMMENCING NEW CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UNKNOWN UTILITIES.
2. UTILITY MAINS AND SERVICES ARE SHOWN SCHEMATICALLY AND FINAL PLAT AND CONSTRUCTION DOCUMENT PROCESS THROUGH THE TOWN OF JOHNSTOWN.
3. THE 16" RAW WATER LINE TO THE SOUTH OF THE WELTY RIDGE PROPERTY IS NON–POTABLE AND WILL NOT PROVIDE A LOOPED CONNECTION TO THE SITE.
4. EXISTING EASEMENTS AND UTILITIES IN CONFLICT WITH PROPOSED DESIGN SHALL BE VACATED AND REMOVED PRIOR TO CONSTRUCTION. EXACT LIMITS WILL BE DETERMINED DURING FINAL DESIGN.
5. APPROXIMATE ROW LIMITS BASED OFF PRELIMINARY DESIGNS PROVIDED BY CDOT. FINAL LOCATION WILL BE DETERMINED DURING THE FINAL DESIGN OF THE I–25 WIDENING PROJECT.
6. AN OFFSET SEWER MAIN IS REQUIRED TO BE CONSTRUCTED TO THE EAST THAT CONNECTS INTO THE EXISTING JOHNSTOWN SANITARY SEWER SYSTEM. SEWER LINE BELOW I–25 SHALL BE BORED AND PERMITTED WITH CDOT. EXACT SIZE AND LOCATION SHALL BE DETERMINED DURING FINAL DESIGN.
7. SEE SHEET 6 FOR ROADWAY CROSS SECTIONS.

LEGEND

- PROPERTY LINE
- PROPOSED ROW
- PROPOSED UTILITY EASEMENT
- PROPOSED LANDSCAPE BUFFER
- EXISTING ROW
- EXISTING SWALE
- EX. / PR. LIGHT POLE
- EX. / PR. SIGNS
- EX. POWER POLE
- TV — CABLE TV
- E — ELECTRIC & METER
- FO — FIBER OPTIC LINE & MH
- G — GAS LINE & METER
- IRR — IRRIGATION
- OH — OVERHEAD POWER
- T — TELEPHONE LINE & MH
- S — PROPOSED SANITARY MAIN W/ FLOW ARROW
- PROPOSED SANITARY STUB
- W — PROPOSED WATER MAIN
- FIRE HYDRANT ASSEMBLY
- PROPOSED WATER STUB
- SD — PROPOSED STORM SEWER
- PROPOSED CURB & GUTTER
- PLANNING AREA DELINEATION

ODP REVISION 02/23/2021

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PLATTE LAND & WATER, LLC

CORE CONSULTANTS

#	REVISION DESCRIPTION	DATE	BY
1	APPROVED ODP	JANUARY 22, 2020	

WELTY RIDGE
JOHNSTOWN, CO

OUTLINE DEVELOPMENT PLAN
CONCEPTUAL UTILITY PLAN

DESIGNED BY: AM
DRAWN BY: AM
CHECKED BY: KR

AMENDED

SHEET 8 OF 12

1/29/2020 1:58 PM X:\18-156 GREAT PLAINS\CADD\CIVIL\2 - WELTY RIDGE\WELTY RIDGE - ODP UTILITY PLAN.DWG

Item #6.

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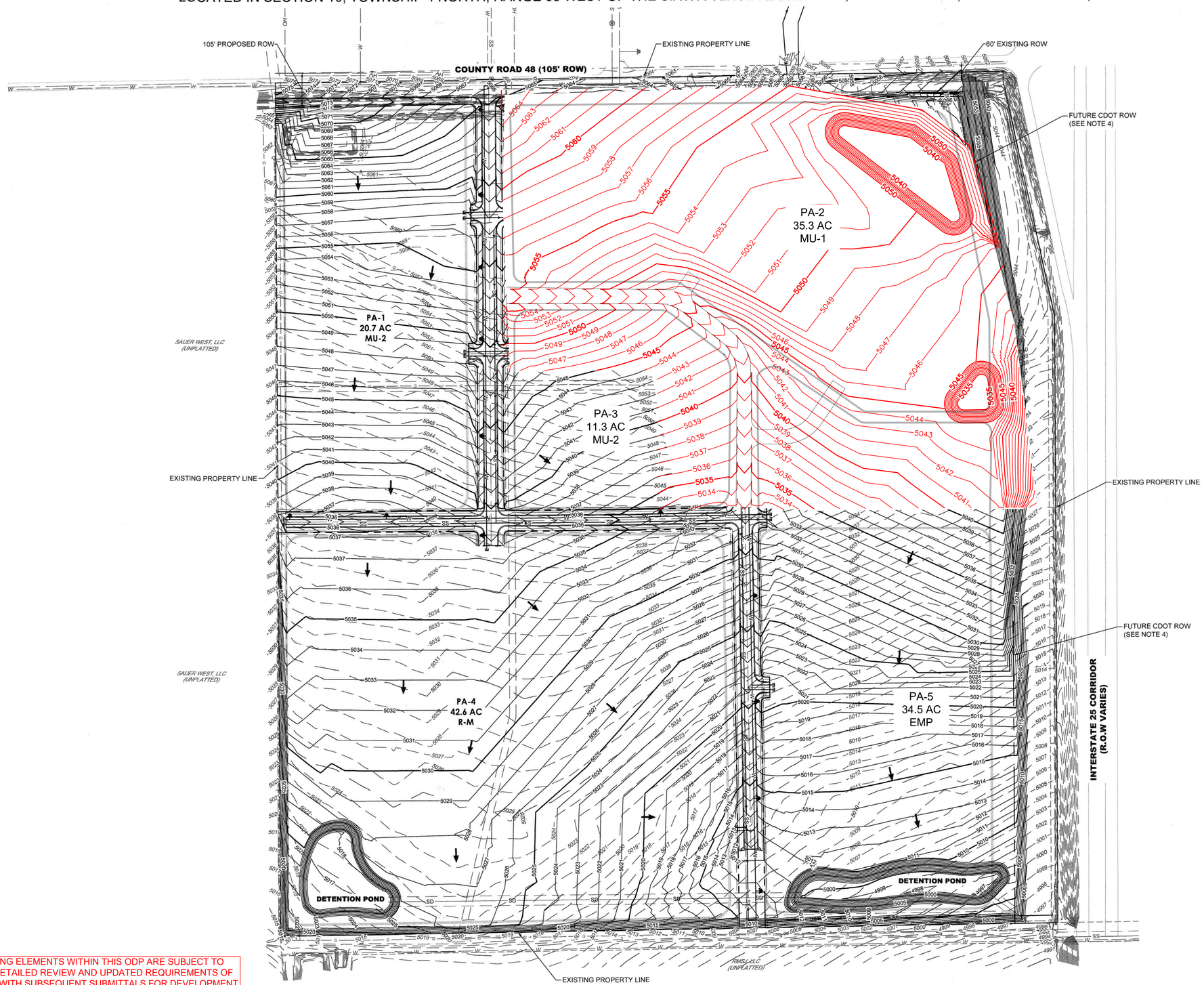
03/16/2020 10:59 AM R Fee:$123.00
Carly Koppes, Clerk and Recorder, Weld County, CO

OUTLINE DEVELOPMENT PLAN AMENDMENT 1
WELTY RIDGE

LOCATED IN SECTION 10, TOWNSHIP 4 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, IN JOHNSTOWN, COUNTY OF WELD, STATE OF COLORADO



NOTES

1. DETENTION POND SIZING AND LOCATIONS ARE CONCEPTUAL AND WILL BE DETERMINED DURING THE PLAT AND CONSTRUCTION DOCUMENT PROCESS THROUGH THE TOWN OF JOHNSTOWN.
2. THE TOPOGRAPHIC SURVEY AND BOUNDARY SHOWN ARE BASED ON THE FIELD SURVEY WORK OF PLS GROUP (PROJECT #18042.001). FIELD SURVEY WAS COMPLETED ON OR AROUND MAY 22, 2018.
3. SEE SHEET 6 FOR ROADWAY CROSS SECTIONS.
4. APPROXIMATE ROW LIMITS BASED OFF PRELIMINARY DESIGNS PROVIDED BY CDOT. FINAL LOCATION WILL BE DETERMINED DURING THE FINAL DESIGN OF THE I-25 WIDENING PROJECT.

LEGEND

- PROPERTY LINE
- PROPOSED CURB & GUTTER
- PROPOSED R.O.W.
- PROPOSED UTILITY EASEMENT
- PROPOSED LANDSCAPE BUFFER
- 5280 EXISTING MAJOR CONTOUR
- 5279 EXISTING MINOR CONTOUR
- 5280 PROPOSED MAJOR CONTOUR
- 5279 PROPOSED MINOR CONTOUR
- PLANNING AREA DELINEATION
- FLOW ARROW

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PLATTE LAND & WATER, LLC

CORE CONSULTANTS

#	REVISION DESCRIPTION	DATE	BY
1	APPROVED ODP	JANUARY 22, 2020	

WELTY RIDGE
JOHNSTOWN, CO

OUTLINE DEVELOPMENT PLAN
PRELIMINARY GRADING PLAN

DESIGNED BY: AM
DRAWN BY: AM
CHECKED BY: KR

AMENDED

SHEET 9 OF 12

1/29/2020 1:53 PM X:\18-156 GREAT PLAINS\CADD\CIVIL\2 - WELTY RIDGE\WELTY RIDGE - ODP GRADING PLAN.DWG

Item #6.

OUTLINE DEVELOPMENT PLAN AMENDMENT 1
WELTY RIDGE

LOCATED IN SECTION 10, TOWNSHIP 4 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, IN JOHNSTOWN, COUNTY OF WELD, STATE OF COLORADO

DESIGN GUIDELINES

PART 1 - INTRODUCTION

1.1 STATEMENT OF INTENT

WELTY RIDGE IS A +/- 145 ACRE MASTER-PLANNED COMMUNITY LOCATED WEST OF INTERSTATE 25 IN THE SOUTHWEST CORNER OF THE I-25 & WCR48/SH-60. THIS MIXED USE PROJECT INCLUDES PARCELS DESIGNATED FOR MULTIPLE TYPES OF RESIDENTIAL, RETAIL, COMMERCIAL, LIGHT INDUSTRIAL AND OFFICE USES. THE OVERALL CHARACTER OF WELTY RIDGE MUST BE EVIDENT AND MAINTAINED TO ENSURE THE QUALITY AND COHESIVENESS DESIRED IN THIS EMERGING PART OF NORTHERN COLORADO. THE GUIDELINES WILL SERVE AS A DESIGN CONCEPT FOR ULTIMATE DESIGN AND DEVELOPMENT. HIGH QUALITY DEVELOPMENT IS ENCOURAGED ALONG THE INTERSTATE 25 CORRIDOR IN GENERAL. WELTY RIDGE WILL BE VISIBLE FROM THE INTERSTATE, AND ITS DEVELOPMENT WILL FORM A FIRST IMPRESSION OF THE COMMUNITY.

THE DESIGN GUIDELINES SHALL BE UTILIZED BY RESIDENTS, DEVELOPERS, ARCHITECTS, ENGINEERS AND PLANNERS FOR DESIGN AND CONSTRUCTION DIRECTION WITHIN THIS PUD. ALL DEVELOPMENTS WITHIN WELTY RIDGE ARE SUBJECT TO THE DESIGN GUIDELINES CONTAINED HEREIN. IN CASES WHERE THIS DOCUMENT IS SILENT, THE TOWN OF JOHNSTOWN STANDARDS AND REGULATIONS SHALL APPLY.

PART 2 - GENERAL DESIGN GUIDELINES

2.1 APPLICABILITY

THIS SECTION APPLIES TO ALL DEVELOPMENT WITHIN WELTY RIDGE AND PROVIDES GENERAL STANDARDS UPON WHICH THE SUBSEQUENT SECTIONS WILL BUILD TO PROVIDE GREATER CLARITY FOR SPECIFIC LAND USES. ALL GOVERNING LOCAL CODES, REGULATIONS, AND STATUTES ENFORCED BY THE TOWN OF JOHNSTOWN WILL APPLY.

2.2 LANDSCAPING

2.2.1 LANDSCAPE DESIGN PRINCIPLES

ALL DEVELOPMENT SHALL DEMONSTRATE ADHERENCE TO THE FOLLOWING LANDSCAPE DESIGN PRINCIPLES:

- DESIGN TO PROVIDE AN ATTRACTIVE, COMFORTABLE ENVIRONMENT FOR USERS WHILE MINIMIZING MAINTENANCE NEEDS, IRRIGATION WATER REQUIREMENTS AND THE USE OF HERBICIDES AND PESTICIDES.
- DESIGN LANDSCAPES TO CREATE A NATURALIZED APPEARANCE. USE PLANT MATERIALS THAT ARE INDIGENOUS TO NORTHERN COLORADO WHERE POSSIBLE. ONLY USE INTRODUCED SPECIES IN ORDER TO ACHIEVE DESIGN OBJECTIVES THAT CANNOT BE ACHIEVED WITH THE USE OF NATIVE SPECIES.
- COORDINATE THE DESIGN OF THE LANDSCAPE WITH SITE EROSION PROTECTION, STORM DRAINAGE AND WATER QUALITY IMPROVEMENT SYSTEMS.
- DESIGN AND MANAGE IRRIGATION SYSTEMS TO ACHIEVE PEAK EFFICIENCY.

2.2.2 STREETSCAPE DESIGN

WELTY RIDGE ENTRIES WILL CONTAIN BOTH SIGNAGE AND LANDSCAPING THAT TIE INTO THE OVERALL STREETSCAPE DESIGN. THE LAND USE PLAN (SHEET 2) ILLUSTRATES THE MAJOR AND MINOR ENTRIES INTO THE SITE. IN ORDER TO CREATE AN APPROPRIATE LANDSCAPE CORRIDOR ALONG CR48, LARGE MASSES OF TREES AND SHRUBS ARE REQUIRED. THE RIGHT-OF-WAY (ROW) WILL BE PRIMARILY DROUGHT-TOLERANT TURF OR IRRIGATED NATIVE SEED. THIS TREATMENT WILL TRANSITION TO DRIFTS OF SHRUB/PERENNIAL BEDS AND TREE GROUPINGS THAT MEANDER FROM JUST INSIDE THE ROW TO THE EDGE OF LANDSCAPE BUFFERS AND BACK. THE GOAL IS TO AVOID A STRAIGHT-LINE TREATMENT AT THE EDGE OF THE ROW. WALKS WILL BE DETACHED AND MEANDER WITHIN THE ROW AND OUTSIDE OF THE ROW INTO THE LANDSCAPE BUFFER IF DESIRED. MEDIANS WILL BE PLANTED IN A SIMILAR FASHION OR WILL BE CONSTRUCTED OF COLORED & STAMPED CONCRETE (SHEET 12, EXHIBIT A).

COLLECTOR & ARTERIAL STREETS:
PLANTING OF ARTERIAL AND COLLECTOR STREETS WILL BE TREATED IN A SIMILAR FASHION IN ORDER TO CREATE A UNIFIED AND SIGNIFICANT STREETSCAPE IMAGE. THE STREETSCAPE DESIGN SHALL EMPHASIZE XERISCAPE PRINCIPLES AND A UNIQUE LOOK THAT SETS WELTY RIDGE APART. TREES AND PERENNIALS SHALL BE PLANTED WITHIN THE PUBLIC ROW, WHILE SHRUBS MAY BE PLANTED OUTSIDE THE PUBLIC ROW. MEDIANS WILL BE PLANTED IN A SIMILAR FASHION OR WILL BE CONSTRUCTED OF COLORED & STAMPED CONCRETE.

ARTERIAL LANDSCAPE BUFFER:
A 30' AVERAGE LANDSCAPE BUFFER WILL BE PROVIDED ALONG WCR48 WITH A MINIMUM WIDTH OF 20'.

SIGHT DISTANCE LINES:
NO PLANTING OVER 30" IN HEIGHT SHALL OCCUR WITHIN A SIGHT DISTANCE LINES. REFER TO AASHTO REQUIREMENTS REGARDING SIGHT DISTANCE TRIANGLES.

2.3 PARKS, OPEN AREA, REGIONAL DETENTION AND NATURAL AREAS

THE DESIGN OF PARKS, OPEN AREA, DETENTION AND NATURAL AREAS SHALL MEET THE CRITERIA AS ESTABLISHED IN THE JOHNSTOWN/MILLIKEN PARKS, TRAILS, RECREATION AND OPEN SPACE PLAN. FINAL DEVELOPMENT PLANS MAY BE SUBMITTED IN STAGES BY PHASE. AS SUCH, THE OPEN AREA DESIGN, APPROVAL AND LANDSCAPE INSTALLATION WILL OCCUR AS THE LOTS DEVELOP.

2.4 SITE SIGNAGE

2.4.1 PURPOSE

THE OBJECTIVE OF THE WELTY RIDGE SIGNAGE PROGRAM IS TO HELP CREATE A UNIFIED IMAGE FOR THE COMMUNITY. THE WELTY RIDGE SIGNAGE PROGRAM SHALL ADHERE TO THE FOLLOWING:

1. ALL FREESTANDING SIGNAGE (EXCEPT FOR THE SIGN ON PA-3, EXHIBIT D ON SHEET 12) WITHIN THE DEVELOPMENT WILL BEAR THE STYLE AND LOGO OF WELTY RIDGE, HOWEVER INDIVIDUAL LOGOS AND GRAPHICS ARE ALLOWED ON THE SIGN FACE. FREESTANDING SIGNS LOCATED THROUGHOUT THE DEVELOPMENT ARE UNIFIED THROUGH THE USE OF SIMILAR GEOMETRY AND A REPETITION OF A COMMON MATERIALS PALETTE.

2. BUILDING MOUNTED SIGNS ARE REGULATED BY LIMITING SIZE. HOWEVER, TENANT LOGOS AND GRAPHICS ARE ALLOWED.

3. NO BLINKING LIGHT SIGNAGE WILL BE ALLOWED

4. ONE MULTI-TENANT FREESTANDING SIGN SHALL BE ALLOWED ON I-25 WITH A MAXIMUM HEIGHT OF 45' (SHEET 12, EXHIBIT C)

5. ONE SINGLE-TENANT OR MULTI-TENANT SIGN SHALL BE ALLOWED IN PA-3 (SEE SHEET 12, EXHIBIT D).

2.5 FENCING & WALLS

CHAIN LINK IS ONLY ACCEPTABLE IN THE "EMP" AREA BY INDUSTRIAL USES AND MUST BE VINYL COATED. CHAIN LINK IS NOT PERMITTED WITH ANY OTHER USE. OTHER FENCING MATERIALS SUCH AS SIMULATED WROUGHT IRON AND / OR CONCRETE OR MASONRY MAY BE REQUIRED DEPENDING UPON SCREENING NEEDS AND COMPATIBILITY WITH ADJACENT USES. NO WOOD RETAINING WALLS ARE ALLOWED (NONRESIDENTIAL ONLY). FENCING AND WALLS SHALL MATCH PRIMARY BUILDING ARCHITECTURE.

2.6 DRIVE-THROUGH FACILITIES

DRIVE-THROUGH FACILITIES ARE A CONVENIENT SERVICE; HOWEVER, THEY CAN CREATE BARRIERS TO PEDESTRIAN MOVEMENT AND PRESENT AN UNATTRACTIVE APPEARANCE UNLESS THEY ARE THOUGHTFULLY DESIGNED AND LOCATED.

DRIVE THROUGH WINDOWS, MENU BOARDS AND STACKING AREAS SHALL BE SUBJECT TO THE SAME SETBACK AND SCREENING REQUIREMENTS AS PARKING LOTS.

PART 3 - RESIDENTIAL DISTRICTS

THESE STANDARDS REPRESENT MINIMUM ARCHITECTURE AND DEVELOPMENT STANDARDS FOR THE RESIDENTIAL DISTRICTS IN AN EFFORT TO CREATE A COHESIVE OVERALL WELTY RIDGE DEVELOPMENT ACROSS MULTIPLE BUILDERS AND PRODUCTS. ADDITIONAL ARCHITECTURAL STANDARDS MAY BE INCLUDED AS MORE DETAILED PRELIMINARY AND FINAL DEVELOPMENT PLANS ARE CREATED FOR EACH PLANNING AREA, PHASE, AND/OR RESIDENTIAL PRODUCT.

3.1 SINGLE FAMILY ATTACHED AND DETACHED ARCHITECTURAL STANDARDS

3.1.1 APPLICABILITY

ALL SINGLE-FAMILY DETACHED AND ATTACHED DWELLINGS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THESE DEVELOPMENT STANDARDS, AS WELL AS APPLICABLE REQUIREMENTS OF THE ADOPTED BUILDING CODE REQUIREMENTS.

3.1.2 EXTERIOR CHANGES

EXTERIOR MATERIAL CHANGES SHOULD OCCUR AT CHANGES IN THE PLANE OF THE BUILDING, NOT EXCLUSIVELY AT THE OUTSIDE CORNERS.

3.1.3 GARAGES

ALL SINGLE FAMILY DETACHED HOMES SHALL INCLUDE A MINIMUM 2-CAR GARAGE, EITHER ATTACHED OR DETACHED, AS PART OF THE NEW CONSTRUCTION OR PLACEMENT.

3.1.4 PRODUCT VARIATION

APPLICABILITY:
THE FOLLOWING HOUSING MODEL VARIETY STANDARDS SHALL APPLY TO ALL NEW RESIDENTIAL SUBDIVISIONS AND DEVELOPMENTS. THESE STANDARDS ARE INTENDED TO PREVENT MONOTONOUS STREETSCAPES AND OFFER CONSUMERS A WIDE CHOICE OF HOUSING STYLES.

EACH HOUSING MODEL SHALL PROVIDE AND EXHIBIT AT LEAST THREE FEATURES THAT CLEARLY AND OBVIOUSLY DISTINGUISH THEM FROM OTHER HOUSING MODELS. THESE FEATURES CAN INCLUDE ANY OF THE FOLLOWING:

1. BUILDING MASS - BUILDING MASS IS CONSIDERED TO BE THE OUTLINE OF THE STRUCTURE. THIS IS DETERMINED BY THE HEIGHT, WIDTH, AND DEPTH OF THE STRUCTURE.
2. BUILDING FORM - BUILDING FORM IS CONSIDERED TO BE THE STYLE OF THE HOME, INCLUDING RANCH, TRI-LEVEL OR TWO-STORY STRUCTURES.
3. ROOF TYPE - ROOF TYPES CONSIST OF MANSARD, HIP, GAMBREL, GABLE, AND FRONT-TO-BACK (SHED STYLE). DIFFERENTIATION MAY ALSO BE ACHIEVED THROUGH THE USE OF ROOF DORMERS, GABLES, AND HIPS. FLAT OR A-FRAMES ROOFS SHOULD BE AVOIDED UNLESS APPROPRIATE TO THE ARCHITECTURAL STYLE.
4. WINDOWS AND DOORS - THE VERTICAL OR HORIZONTAL VARIATION IN THE PLACEMENT OF AT LEAST TWO WINDOWS AND/OR DOORS ON THE FRONT FACADE ELEVATION OR WINDOW SHAPES THAT ARE SUBSTANTIALLY DIFFERENT. THIS STANDARD ALSO APPLIES TO ANY ELEVATION FACING A STREET, OPEN SPACE OR PUBLIC / PRIVATE PARK.
5. THE USE OF AT LEAST TWO DIFFERENT MATERIALS ON THE FRONT FACADE ELEVATION.
6. GARAGES. VARIATION IN THE LOCATION AND/OR PROPORTION OF GARAGES AND GARAGE DOORS, SUCH AS ALLEY-LOADED GARAGES, SIDE-LOADED GARAGES, ETC. (2-CAR GARAGE VS. 3-CAR GARAGE OF THE SAME ELEVATION DO NOT MEET THE INTENT).
7. VARIATIONS IN THE LOCATION, WIDTH, AND PROPORTION OF FRONT PORCHES (MIN. SIZE 6'x6").
8. MINOR COSMETIC CHANGES SUCH AS DIFFERENT PAINT COLOR, REVERSING OR CREATING MIRRORED IMAGES OF THE EXTERIOR ARCHITECTURAL ELEVATIONS, SHUTTERS, DECORATIVE BRACKETS, OR USING DIFFERENT BRICK OR STONE COLOR SHALL NOT MEET THE INTENT OF THIS SECTION.

THE SAME HOUSING MODEL WITH THE IDENTICAL STREET ELEVATION DESIGN (OR NEARLY IDENTICAL) SHALL NOT BE PLACED LESS THAN THREE AWAY OR DIRECTLY ACROSS THE STREET FROM ONE ANOTHER. "ACROSS THE STREET" IS DEFINED AS LOTS THAT OVERLAP EACH OTHER WHEN THE SIDE LOT LINES ARE EXTENDED ACROSS THE STREET TO THE OPPOSITE LOT. THE SAME HOUSING MODEL USED AT THE END OF ONE BLOCK SHALL NOT BE REPEATED ON THE FIRST LOT OF THE NEIGHBORING BLOCK.

IDENTICAL OR NEARLY IDENTICAL STREET ELEVATION DESIGN MEANS LITTLE OR NO VARIATION IN THE ARTICULATION OF THE FAÇADE, HEIGHT OR WIDTH OF THE FAÇADE, PLACEMENT OF THE PRIMARY ENTRANCES, PORCHES, NUMBER AND PLACEMENT OF WINDOWS, AND OTHER MAJOR ARCHITECTURAL FEATURES.

3.2 CLUSTERED SINGLE FAMILY RESIDENTIAL ARCHITECTURAL STANDARDS

3.2.1 GENERAL

CLUSTER HOMES ADJACENT TO A PUBLIC STREET AND LOCATED ON A MOTOR COURT OR GREEN COURT SHALL HAVE A SIDE FACING GARAGE. THE GARAGE SHALL FACE THE MOTOR COURT OR SHARED DRIVE NOT THE PUBLIC STREET (SHEET 12, EXHIBIT B).

3.2.2 ACCESS

IF FOUR OR FEWER UNITS ACCESS FROM A SHARED DRIVE, THE MINIMUM DRIVE WIDTH IS 16 FEET (SEE CLUSTER HOME EXAMPLE B - MOTOR COURT ON SHEET 10). IF 5 OR MORE UNITS ACCESS OFF A COMMON DRIVE THE MINIMUM DRIVE WIDTH IS 23 FEET (SEE CLUSTER HOME EXAMPLE A - GREEN COURT ON SHEET 10).

GARAGES FACING ONTO SHARED DRIVES MUST HAVE A MINIMUM FACE TO FACE SEPARATION OF 30 FEET.

3.1.3 FACADES

EXTERIOR FACADES SHALL COMPLY WITH THE CURRENT STANDARDS AND DESIGN GUIDELINES EXCEPT AS FOLLOWS:

IN ORDER TO BE CONSIDERED A DISTINCT ELEVATION, EACH ELEVATION SHALL INCORPORATE AT LEAST THREE OF THE FOLLOWING:

1. PLACEMENT OF WINDOWS ON THE FRONT FAÇADE ELEVATION INCLUDE AT LEAST A TWO-FOOT VERTICAL OR HORIZONTAL VARIATION IN SIZE OR LOCATION.
2. THE USE OF DIFFERENT MATERIALS OR VARIATIONS OF THE SAME MATERIAL ON THE FRONT FAÇADE ELEVATION.
3. VARIATIONS IN FRONT PLANE.
4. VARIATION IN ROOF TYPE, GABLE AND HIP.

NO MORE THAN TWO (2) OF THE SAME MODEL ELEVATIONS ARE PERMITTED WITHIN A MOTOR OR GREEN COURT. IF TWO MODEL ELEVATIONS ARE LOCATED WITHIN THE SAME MOTOR COURT THEY MUST USE DIFFERENT COLORS OR MATERIALS.

NO HOME MODEL ELEVATION SHALL BE REPEATED DIRECTLY ACROSS ANY STREET. THIS APPLIES TO STREET SIDE HOMES ONLY. THIS DOES NOT APPLY TO UNITS LOCATED INTERIOR TO THE MOTOR COURT OR GREEN COURT.

ALL "STREET SIDE CLUSTER HOMES" SHALL MEET THE FOLLOWING:

1. THE FRONT FAÇADE OF THE HOME INCORPORATES A COVERED PORCH.

3.3 MULTI-FAMILY RESIDENTIAL ARCHITECTURAL STANDARDS

3.3.1 BUILDING DESIGN

THE ARCHITECTURAL DESIGN APPROACH SHALL EMPHASIZE COMPATIBILITY WITH EXISTING DEVELOPMENT AND SITE DESIGN.

THE DESIGN OF NEW STRUCTURES IN OR ADJACENT TO EXISTING DEVELOPED AREAS SHALL BE COMPATIBLE WITH, OR AN UPGRADE TO, THE ESTABLISHED ARCHITECTURAL CHARACTER OF SUCH AREAS. COMPATIBILITY MAY BE ACHIEVED THROUGH TECHNIQUES SUCH AS:

1. REPETITION OF ROOF LINES.
2. USE OF SIMILAR PROPORTIONS IN BUILDING MASS AND OUTDOOR SPACES.
3. SIMILAR RELATIONSHIPS TO THE STREET.
4. SIMILAR WINDOWS AND DOOR PATTERNS.
5. BUILDING MATERIALS WITH SIMILAR COLORS AND TEXTURES.

TREAT ALL SIDES WITH SIMILAR MATERIALS. MULTI-FAMILY BUILDING FACADES SHALL BE ARTICULATED WITH PORCHES, BALCONIES, BAYS OR OTHER OFFSETS.

ACCESSORY BUILDINGS SHOULD BE SIMILAR IN CHARACTER AND MATERIALS AS PRIMARY BUILDINGS.

3.3.2 FACADES

FACADES THAT FACE A STREET OR PARKING AREA SHALL NOT HAVE A BLANK, UNINTERRUPTED LENGTH EXCEEDING 50 FEET WITHOUT INCLUDING AT LEAST TWO (2) OF THE FOLLOWING:

1. CHANGE IN PLANE.
2. CHANGE IN COLOR, TEXTURE OR PATTERN, MATERIAL.
3. WINDOWS.
4. COLUMNS, PIERS OR EQUIVALENT ELEMENT THAT SUBDIVIDES THE WALL.

FACADES GREATER THAN 150 FEET IN LENGTH SHALL INCORPORATE WALL PLANE PROJECTIONS OR RECESSES HAVING A DEPTH OF AT LEAST 2% OF THE LENGTH OF THE FACADE AND OCCUPY AT LEAST 20% OF THE LENGTH OF THE FACADE.

3.3.3 BUILDING ENTRANCES

PRIMARY BUILDING ENTRANCES SHALL BE CLEARLY DEFINED AND PROVIDE SHELTER, AND INCLUDE A MINIMUM OF TWO (2) OF THE FOLLOWING:

1. CANOPY, ARCADE OR PORTICO.
2. OVERHANG OR RECESS.
3. RAISED CORNICED PARAPET.
4. PEAKED ROOF OR ARCH.
5. ARCHITECTURAL DETAIL SUCH AS COLUMNS, TILE WORK, STONE OR MOLDINGS INTEGRATED INTO THE BUILDING STRUCTURE.
6. INTEGRAL PLANTERS OR WING WALLS THAT INCORPORATE LANDSCAPED AREAS AND/OR PLACES FOR SITTING.
7. SPECIAL LANDSCAPE OR SITE FEATURE(S).

3.3.4 ROOF AND TOP TREATMENTS

ROOFTOP MECHANICAL EQUIPMENT MUST BE NON-OBTRUSIVE, SCREENED FROM VIEW OR DESIGNED TO BE INTEGRAL COMPONENTS OF THE BUILDING.

THE AVERAGE PARAPET HEIGHT MAY NOT EXCEED 15% OF THE SUPPORTING WALL HEIGHT.

LARGE SLOPED ROOFS MUST HAVE VARIATIONS IN HEIGHT OR OFFSETS TO BREAK UP THE LARGE PLANE WITH A MAXIMUM 100 LINEAR FEET OF ONE PLANE.

ACCESSORY BUILDINGS SHALL BE OF THE SAME CHARACTER AND MATERIALS AS PRIMARY BUILDINGS.

ODP_REVISION 02/23/2021

Item #6.

Kimley»Horn

terracina design
10200 E. Girard Ave, Ste A-314
Denver, CO 80231
ph: 303.632.8867

PLATTE LAND & WATER, LLC

CORE CONSULTANTS

#	REVISION DESCRIPTION	DATE	BY
1	APPROVED ODP	JANUARY 22, 2020	

WELTY RIDGE
JOHNSTOWN, CO

OUTLINE DEVELOPMENT PLAN
DESIGN GUIDELINES

DESIGNED BY: JM
DRAWN BY: KB
CHECKED BY: JM

AMENDED
SHEET
11 OF 12

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OUTLINE DEVELOPMENT PLAN AMENDMENT 1
WELTY RIDGE

LOCATED IN SECTION 10, TOWNSHIP 4 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, IN JOHNSTOWN, COUNTY OF WELD, STATE OF COLORADO

PART 4 - COMMERCIAL, OFFICE AND LIGHT INDUSTRIAL ARCHITECTURAL STANDARDS

4.1 GENERAL

THESE DESIGN STANDARDS APPLY TO THE CREATION OF AND IMPROVEMENTS TO HIGH VISIBILITY, NEIGHBORHOOD, COMMUNITY AND REGIONAL-SCALE COMMERCIAL AREAS. REQUIREMENTS APPLICABLE TO THE OVERALL NATURE OF THE PUD CAN BE FOUND IN THE GENERAL DESIGN GUIDELINES (PART 2) AND SHOULD BE VIEWED AS COMPLEMENTARY.

4.1.1 CONTEXT/SCALE

IN ORDER TO ACHIEVE COHESIVE DESIGNS WITHIN EACH AREA OF DEVELOPMENT, ATTENTION MUST BE PAID TO BUILDINGS AND FEATURES SURROUNDING THE PROPOSED IMPROVEMENT.

THE DESIGN OF BUILDINGS WHICH FACE PUBLIC STREETS, ADJACENT DEVELOPMENTS, OR CONNECTED PEDESTRIAN SPACES, SHALL EMPLOY, ALONG A MINIMUM OF FORTY (40) PERCENT OF THE FACADE, AT LEAST TWO OF THE FOLLOWING IN AN EFFORT TO FORM COHESIVE DEVELOPMENT, DEFINE THE SPACES, AND TO BRING A PEDESTRIAN SCALE TO THE FACADES. THIS REQUIREMENT IS FOR ALL ELEVATIONS (360◦ DESIGN)

1. SIMILAR WINDOWS AND PATTERNS
2. REPETITION OF ROOF LINES
3. SIMILAR BUILDING MATERIALS AND TEXTURES
4. SHADING DEVICES (INCLUDING ARCADES, AWNINGS AND ARBORS)
5. SIMILAR PROPORTIONS OF ELEMENTS

4.1.2 ARTICULATION

WALL DESIGN FOR ALL FACADES SHALL VARY AT LEAST EVERY FIFTY (50) HORIZONTAL FEET BY USE OF AT LEAST TWO (2) OF THE FOLLOWING:

1. CHANGES IN COLOR, TEXTURE, OR MATERIALS.
2. CHANGES IN WALL PLANE PROJECTIONS, REVEALS, ENTRANCES, AND RECESSES WITH A MINIMUM CHANGE OF ONE FOOT.
3. CHANGE IN GLAZING / CURTAIN WALL
4. VARIETY IN ROOFS: SUCH AS PITCH, HEIGHT, AND STYLE.
5. ENHANCED ARTICULATION ALONG PEDESTRIAN PATHS

4.1.3 BUILDING ENTRANCES

PUBLIC BUILDING ENTRANCES SHOULD BE CLEARLY DEFINED AND FEATURE AT LEAST TWO (2) OF THE FOLLOWING ELEMENTS:

1. CANOPIES OR PORTICOS
2. OVERHANGS OR RECESSES OR PROJECTIONS
3. ARCADES
4. ARCHES
5. DISPLAY WINDOWS ALONG SIDEWALKS
6. INTEGRAL PLANTERS OR WING WALLS WITH INCORPORATED LANDSCAPE AREAS AND/OR PLACES FOR SITTING
7. DISTINCTIVE ROOF FORMS
8. AWNINGS
9. COLUMNS, TILE WORK, MOLDINGS, AND STONE INTEGRATED INTO THE DESIGN OF THE BUILDING

4.1.4 MECHANICAL EQUIPMENT, LOADING AREA, AND OUTDOOR STORAGE

ALL LOADING DOCKS, ACCESSORY OUTDOOR STORAGE AND SERVICE YARDS SHALL BE LOCATED TO THE SIDE AND REAR YARDS OF BUILDINGS.

ALL OUTDOOR STORAGE YARDS, LOADING DOCKS, SERVICE AREAS AND MECHANICAL EQUIPMENT SHALL BE CONCEALED FROM VIEW FROM RESIDENTIAL USES AND PUBLIC ROW BY A COMBINATION OF SCREENS AND SCREENING MATERIAL (PLANTS) AT LEAST AS HIGH AS THE EQUIPMENT OR AREAS THEY HIDE. THEY SHALL BE DESIGNED WITH COLORS AND MATERIALS SIMILAR TO THOSE USED ON THE BUILDING ARCHITECTURE. PLANTS USED IN COMBINATION WITH SCREENS/FENCING SHALL BE EVERGREEN.

THE OUTDOOR STORAGE REQUIREMENT DOES NOT PROHIBIT THE USE OF THE EXTERIOR SALES SUCH AS GRILLS, FIRE-PITS, ETC. EXTERIOR SALE ITEMS SHALL NOT BE REQUIRED TO BE CONCEALED FROM VIEW.

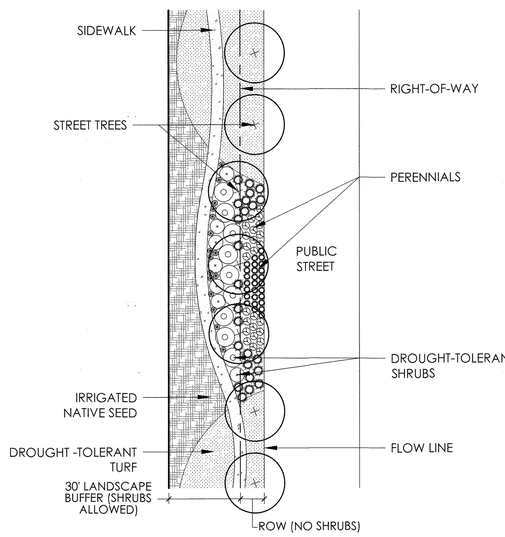
4.1.5 FENCES

ALL FENCING SHALL CONSIST OF WOODEN, STAKE, PARCEL PICKET, SPLIT RAIL, VINYL, WROUGHT IRON, AND/OR MASONRY. CHAIN LINK WILL ONLY BE ACCEPTED IN "EMP" AREAS FOR INDUSTRIAL USES.

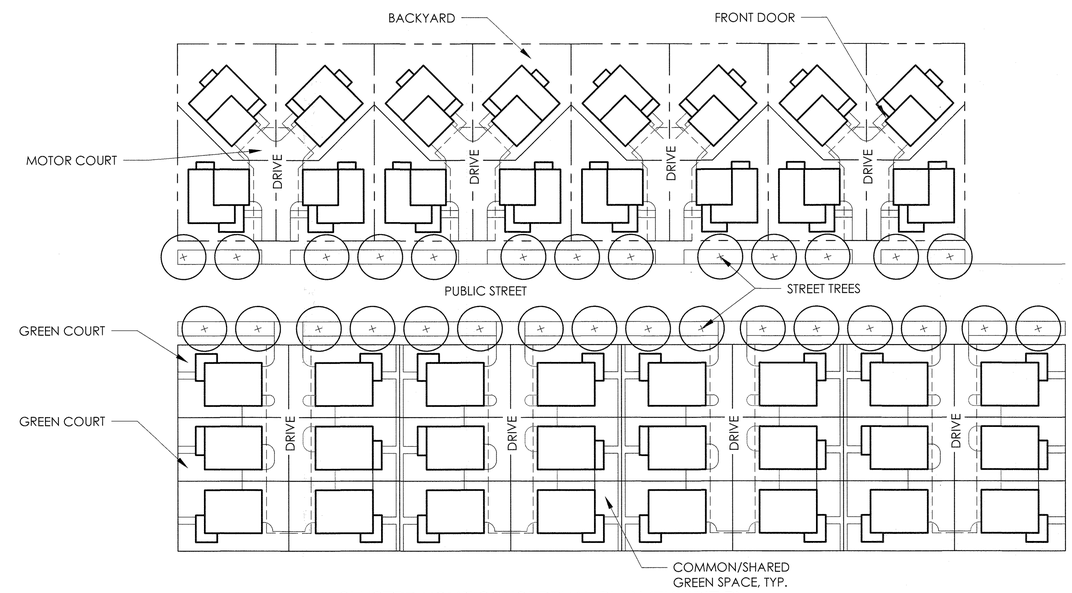
EXCESSIVE FENCING SHALL BE AVOIDED THROUGH THE USE OF STAGGERING, LANDSCAPE, BUFFER, AND ANCHOR MATERIALS.

4.1.6 RETAINING WALLS

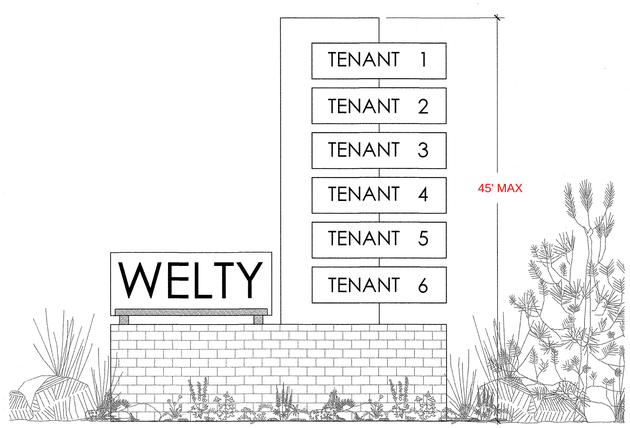
ANY PORTION OF CONCRETE OR MASONRY RETAINING WALLS VISIBLE FROM PUBLIC STREETS WILL BE COVERED WITH DECORATIVE MATERIALS SUCH AS STONE, BRICK OR STUCCO.



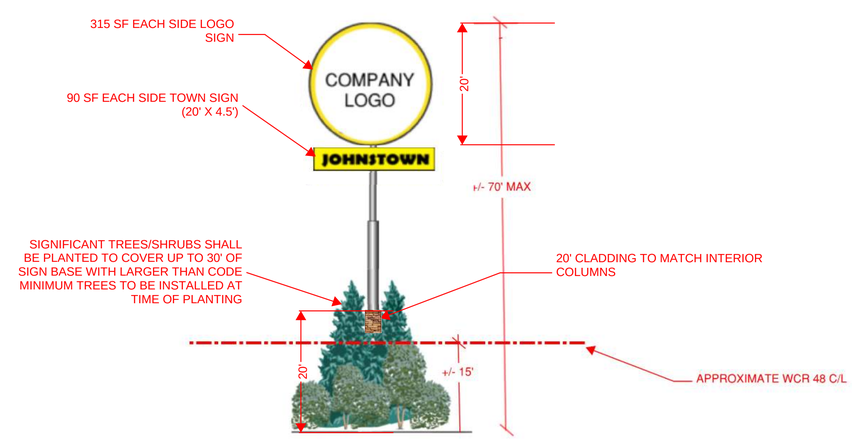
STREETSCAPE TYPICAL (EXHIBIT A)



CLUSTER HOME CONCEPTUAL PLAN (EXHIBIT B)



MULTI-TENANT HIGHWAY SIGN EXAMPLE (EXHIBIT C)



SINGLE-TENANT FREESTANDING SIGN EXAMPLE (EXHIBIT D)

Note: The proposed signage package for PA-3 shall be submitted as a master sign plan under separate cover

ODP REVISION 02/23/2021

Kimley»Horn

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PLATTE LAND & WATER, LLC

CORE CONSULTANTS

#	REVISION DESCRIPTION	DATE	BY
1	APPROVED ODP	JANUARY 22, 2020	

WELTY RIDGE
JOHNSTOWN, CO

OUTLINE DEVELOPMENT PLAN
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AMENDED
SHEET
12 OF 12

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Town of Johnstown

TOWN COUNCIL CONSENT AGENDA COMMUNICATIONS

AGENDA DATE: November 1, 2021

SUBJECT: Weld County Multi-Jurisdictional Hazard Mitigation Plan (HMP)

ACTION PROPOSED: Consider Resolution 2021-41 Adopting the Weld County Multi-Jurisdictional Hazard Mitigation Plan (HMP)

ATTACHMENTS: 1. Resolution 2021-41

PRESENTED BY: Chief Brian Phillips, Police Chief

AGENDA ITEM DESCRIPTION:

Over the past year, The Town of Johnstown participated in revising and updating the Hazard Mitigation Plan (HMP) with the Weld County Office of Emergency Management. The plan ensures local jurisdictions continually assess and evaluate hazard risks to local communities regularly and is updated every five years. In order to be eligible for FEMA funding and to be considered as an eligible jurisdiction, the Town will need to formally adopt the updated HMP Plan for our jurisdiction through this proposed resolution.

LEGAL ADVICE:

The Resolution was drafted by the Town Attorney.

FINANCIAL ADVICE:

N/A

RECOMMENDED ACTION: Approve Resolution No. 2021-41

Reviewed and Approved for Presentation,

Town Manager

TOWN OF JOHNSTOWN, COLORADO
RESOLUTION NO. 2021-41

ADOPTING WELD COUNTY
MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN (2021)

WHEREAS, the Town of Johnstown, Colorado (the "Town") is a Colorado home rule municipality, duly organized and existing under the laws of the State of Colorado and the Town's Home Rule Charter; and

WHEREAS, the Town Council is vested with authority to administer the affairs of the Town; and

WHEREAS, the Town Council recognizes the threat that natural and human-caused hazards, including flooding, wildfires and other such events, pose to public health and safety; and

WHEREAS, Weld County and jurisdictions within Weld County, including the Town, developed a hazard mitigation plan, known as the Weld County Multi-Jurisdictional Hazard Mitigation Plan (2021) ("Plan"); and

WHEREAS, the Plan sets forth mitigation actions to help minimize and reduce safety threats and damage to private and public property; and

WHEREAS, the Plan was prepared in accordance with the requirements of the Federal Emergency Management Agency at 44 C.F.R. 201.6; and

WHEREAS, the Town Council has reviewed the Plan and affirms that the Plan will be updated no less than every five (5) years; and

WHEREAS, the Town Council finds that adoption of the Plan is in the best interests of the Town and desires to adopt the Plan.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF JOHNSTOWN, COLORADO, THAT:

1. The Weld County Multi-Jurisdictional Hazard Mitigation Plan (2021) is hereby approved and adopted as the Town's hazard mitigation plan for the portions of the Town within Weld County.

2. The Town staff is directed to execute the actions in the Plan.

3. The Plan shall supersede and replace prior hazard mitigation plans adopted by the Town Council for the portions of the Town within Weld County.

PASSED, SIGNED, APPROVED, AND ADOPTED THIS ___ day of November, 2021.

ATTEST: TOWN OF JOHNSTOWN, COLORADO

By:_____ By:_____
Diana Seele, Town Clerk Gary Lebsack, Mayor

WELD COUNTY 2021 MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

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7.10 Town of Hudson 74
7.11 Town of Johnstown 82
7.12 Town of Keenesburg 88
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7.14 Town of Mead 104
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8 Appendix C: Earthquake Hazus Risk Report 1
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Professional planning services for this plan update provided by:

SYNERGY DISASTER RECOVERY

With support from:

LOGAN SIMPSON

iParametrics

1 Mitigation Strategy

This section of the Plan provides the blueprint for Weld County and its participating municipalities to become less vulnerable to hazards. The mitigation goals, objectives, and actions are based on the general consensus of the Weld County Hazard Mitigation Planning Committee (HMPC) and local stakeholder feedback, along with the findings of the Hazard Identification and Risk Assessment.

1.1 Overview

The intent of the mitigation strategy is to provide Weld County and participating jurisdictions with the goals that will serve as the guiding principles for future mitigation policy and project administration, along with a list of proposed actions deemed necessary to meet those goals and reduce the impact of hazards. It is designed to be comprehensive and strategic in nature. The development of the strategy included a thorough review of hazards and identified actions intended to reduce their future impacts, in addition to helping Weld County and participating jurisdictions achieve compatible economic, environmental, and social goals. The mitigation strategy is composed of the following three pieces:

- **Mitigation goal**s are general guidelines that explain what the County wants to achieve. Goals are usually expressed as broad policy statements representing desired long-term results.
- **Mitigation objectives** describe strategies or implementation steps to attain the identified goals. Objectives are more specific statements than goals; the described steps are usually measurable and can have a defined completion date.
- **Mitigation Actions** provide more detailed descriptions of specific efforts to help the county and its municipalities achieve prescribed goals and objectives.

Based on input from the Weld County HMPC, the mitigation strategy from the 2016 Plan has been modified and updated accordingly. The goals and objectives, while largely the same, have been revised to align with current County strategies and programs. Previously identified actions were reviewed and new actions have been identified by Weld County and its local jurisdictions.

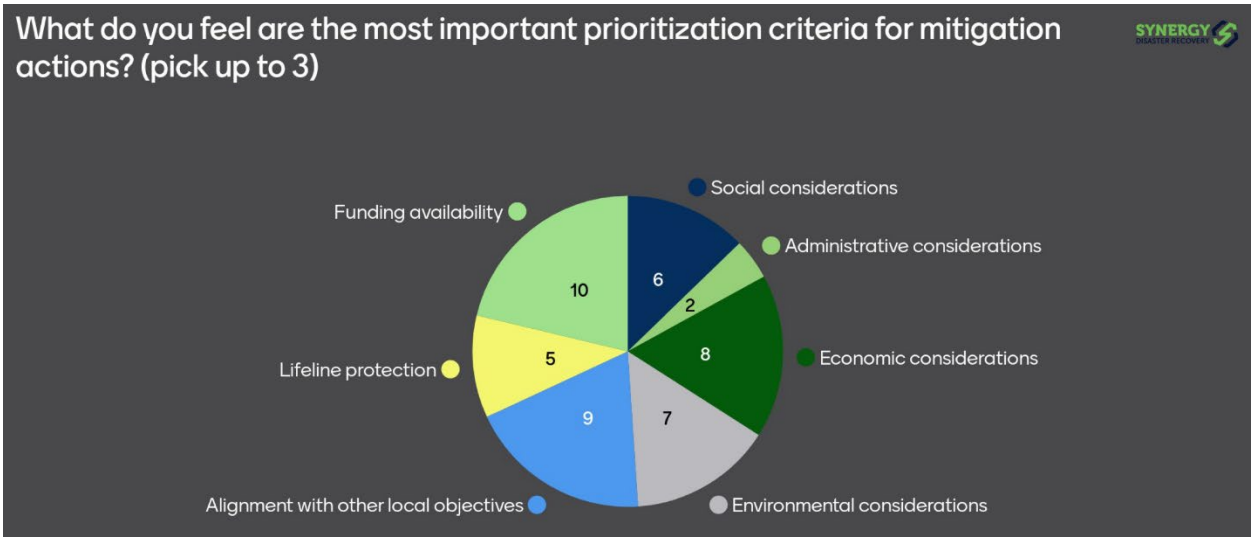
In order to prioritize the mitigation actions in this plan, the County and each participating jurisdiction referred to FEMA's STAPLEE methodology, in addition to a number of additional criteria. This allowed for a careful review of the feasibility of mitigation actions. Ultimately, mitigation actions were prioritized by each community using a three-tiered High, Medium, or Low methodology.

Following is a list of those prioritization criteria that each jurisdiction considered. FEMA mitigation planning requirements indicate that any prioritization system used shall include a special emphasis on the extent to which benefits are maximized according to a cost-benefit review of the proposed projects.

- Positive Cost-Benefit
- Social considerations – life/safety impact
- Administrative considerations – admin/technical assistance
- Economic considerations – project cost/reduce future disaster costs
- Alignment with other local objectives
- Environmental considerations
- Lifeline protection
- Social equity
- Legal considerations
- Availability of local funding

Figure 1 shows the HMPC polling results when asked about action prioritization in their communities.

Figure 1. Action Prioritization Criteria HMPC Poll



In order to ensure that a broad range of mitigation actions were considered for the Mitigation Strategy, the Weld County HMPC analyzed a comprehensive range of specific mitigation actions for each hazard after the risk assessment was complete. This helped to ensure that there was sufficient span and creativity in the mitigation actions considered.

There are four categories of mitigation actions which Weld County considered in developing its mitigation action plan. Those categories include:

- **Structure & Infrastructure Projects**: These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as Lifelines. This type of action also involves projects to construct manmade structures to reduce the impact of hazards. Many of these types of actions are projects eligible for funding through the FEMA Hazard Mitigation Assistance program.
    - Examples include: Removal of structures in hazard areas, elevation of structures in flood prone areas, utility under-grounding, structural retrofits, flood walls and retaining walls, detention and retention structures, culverts, and safe rooms.
- **Local Plans & Regulations**: These actions include government authorities, policies, or codes that influence the way land and buildings are developed and built.
    - Examples include: comprehensive plans, land use ordinances, subdivision regulations, development review, building codes & enforcement, capital improvement programs, open space preservation, and stormwater management regulations & plans.
- **Natural Systems Protection**: These are actions that minimize damage and losses and also preserve or restore the functions of natural systems.
    - Examples include: forest management, sediment & erosion control, stream corridor restoration, conservation easements, wetland restoration & preservation, and defensible space.
- **Education & Awareness Programs**: These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These

actions may also include participation in national programs, such as StormReady or Firewise Communities. These types of actions provide a greater understanding and awareness of hazards and risk among local officials, stakeholders, and the public. This knowledge is likely to lead to implementation of other types of hazard mitigation.

- Examples include: participation in national risk awareness programs, mailing to residents in hazard-prone areas, presentations to local schools, groups, & organizations, websites with maps and information, real estate disclosures, and incentivizing drought tolerant landscaping.

1.2 Hazards

One of the largest inputs to a successful mitigation strategy is a thorough understanding of those hazards that impact communities and the ultimate risk they present. A large portion of this Plan is devoted to a detailed review of these hazards and each community's vulnerabilities. See the Risk Assessment and Appendix B: Municipal Annexes sections of this Plan for additional details. An overall Countywide hazard risk ranking is provided in Table 32.

Table 1. Countywide Hazard Risk Ranking

	Agricultural Hazards	Cyber Hazards	Drought	Earthquake	Extreme Temps.	Flood	Hazmat Release	Land Subsidence	Prairie Fire	Public Health Hazards	Severe Storm	Tornado & Straight-Line
Weld County	High Risk	High Risk	High Risk	Low Risk	Moderate Risk	High Risk	High Risk	Low Risk	High Risk	High Risk	High Risk	Moderate Risk

1.3 Mitigation Goals & Objectives

Together, the goals and objectives identified by the HMPC established the scope and focus of the proposed mitigation actions outlined in this Plan. The following table provides a summary of the updated mitigation goals for the 2021 Plan. It also outlines the planning objectives identified by the HMPC for each goal.

Table 2. 2021 Mitigation Goals & Objectives

Goals	Objectives
GOAL 1: Protect people, property, and natural resources, while decreasing the economic impacts of a disaster.	A. Continue to develop and expand programs for community preparedness and resilience education, including community Lifelines.
	B. Enhance training for hazard prevention, Lifeline impacts and mitigation options.
	C. Incorporate risk reduction principles into policy documents and initiatives, as well as other institutional plans.
	D. Continue to collaborate with area partners through mutual aid agreements and long-term planning efforts.

Goals	Objectives
	E. Reduce the vulnerability of local assets and Lifeline services to the impacts of hazards.
GOAL 2: Improve capabilities within the County and local jurisdictions to maintain delivery of lifeline critical services and reduce disaster losses.	A. Continue to develop and expand programs for community preparedness and resilience education, including community Lifelines.
	B. Enhance training for hazard prevention, Lifeline impacts and mitigation options.
	C. Incorporate risk reduction principles into policy documents and initiatives, as well as other institutional plans.
	D. Continue to collaborate with area partners through mutual aid agreements and long-term planning efforts.
	E. Reduce the vulnerability of local assets and Lifeline services to the impacts of hazards.
GOAL 3: Increase community resilience by engaging the public and community leaders in education about preparedness and mitigation strategy.	A. Continue to develop and expand programs for community preparedness and resilience education, including community Lifelines.
	B. Enhance training for hazard prevention, Lifeline impacts and mitigation options.
GOAL 4: Support the active participation of Weld County communities in ongoing mitigation planning, to maintain eligibility for FEMA, other federal mitigation funding and additional grant funding opportunities.	A. Continue to develop and expand programs for community preparedness and resilience education, including community Lifelines.
	B. Enhance training for hazard prevention, Lifeline impacts and mitigation options.
	C. Incorporate risk reduction principles into policy documents and initiatives, as well as other institutional plans.
	D. Continue to collaborate with area partners through mutual aid agreements and long-term planning efforts.
	E. Reduce the vulnerability of local assets and Lifeline services to the impacts of hazards.

1.4 2016 HMP Action Report

The Weld County HMPC reviewed and reported on the status of mitigation actions included in the 2016 Plan. Table 3 provides a summary of this reporting. 2016 actions from Brighton, Garden City, Gilcrest, and Kersey are not reported as these municipalities did not participate in the planning process for the 2021 update. A number of 2016 mitigation actions are on-going or have been deferred to this updated 2021 Plan. These are highlighted in green throughout the Table.

Table 3. 2016 Mitigation Action Summary

ID	Organization	Action	Status
2016 -01	Weld County	County Resiliency Study	Whole Community Meeting was built up in 2018 and meetings were held every two months to engage members of the 32 jurisdictions and educate on resilience building, we are currently surveying resilience through this group. An actual study has not been completed.
2016 -02	Weld County	Load-limited Bridge Replacements	This project was completed. The bridge replacement list changes annually for load restricted bridges. We modify our annual bridge replacement list to accommodate new bridges being added to the load restricted list.
2016 -03	Weld County	County Road 49 Interchanges	None at this time. On-going project.
2016 -04	Weld County	Drainage Improvements near Parkway	Study was completed, identifying several possible projects, BOCC to prioritize projects. On-going project.
2016 -05	Weld County	Railroad Crossing Improvements	Most have been completed with the exception of 2. On-going project but not included as a 2021 action in this Plan.
2016 -06	Weld County	River Channel Clearing	None at this time. On-going project.
2016 -07	Ault	Storm Ready	Completed.
	Brighton	All	This community did not participate in this Plan update.
2016 -08	Dacono	Design and Construction of Colorado Blvd. Bridge	To date, this project has undergone engineering review and design. Completion of this project will depend on available funding, and it has not yet been scheduled. This project should be continued as a 2021 mitigation action. On-going project.
2016 -09	Dacono	Grandview St. and York St. Flood Mitigation	To date, this project has undergone engineering review and design. Completion of this project will depend on available funding, and it has not yet been scheduled. This project should be continued as a 2021 mitigation action. On-going project.

ID	Organization	Action	Status
2016-10	Erie	Install Emergency Generator	Designed in 2020, installation in 2021.
2016-11	Erie	Install Outdoor Warning Sirens	Project complete, don't have project costs available
2016-12	Erie	Boulder Creek Improvements	Project completed April 2016
2016-13	Erie	Coal Creek Improvements	Preliminary Design is complete. Need funding partners prior to final design and construction. On-going project.
2016-14	Evans	Implement High Priority Actions from Drainage Plan	On-going project. 31st Street Stormwater Outfall & Bay at the Landings Inlet
2016-15	Evans	"Weather Ready Ambassador" status with NOAA	Project complete
2016-16	Evans	Implement Ordinances to Prevent Building in the 100-year Floodplain	Project complete
2016-17	Evans	Mitigation of 49th St. & Industrial Pkwy. Roadways	Completed 2016-17
2016-18	Firestone	Installation of Culverts along 4000 block of Firestone Blvd.	This project was completed in 2017.
2016-19	Firestone	Installation of Culverts at Colorado Blvd. & Pine Cone Ave.	Town of Firestone installed a culvert in this location, but the connection on the west side of the road has not been completed. This action needs to be done by the Town of Frederick and is listed as a new action for them. Complete for Firestone
2016-20	Fort Lupton	Draining Improvements in Storm Drainage Master Plan	Projects completed. Intersection flooding at 6th Street and McKinley – 2017, Localized flooding at Hoover Ave and 7th Street – 2017, Localized flooding issue storm sewer repairs at Hoover Ave and 9th Street – 2017, Localized flooding issue CR 12 and S Denver avenue – 2019. Kahil outfall project under construction currently, On-going project.

ID	Organization	Action	Status
2016 -21	Frederick	Box Culvert at Bella Rosa Pkwy.	This project was partially completed in 2018. Damage has been repaired but the lack of adequate box culverts to handle a 100-year flood will result in future damage. The Town of Frederick Stormwater Master Plan will identify this project as a priority. On-going project.
2016 -22	Frederick	Snow Removal Capabilities	Complete, another alternative was identified.
2016 -23	Frederick	Tipple Pkwy. Box Culvert	Box Culvert on Tipple Pkwy. was completed by the Town of Firestone.
2016 -24	Frederick	Tipple Pkwy. Paving	This project was completed in 2018.
	Garden City	All	This community did not participate in this Plan update.
	Gilcrest	All	This community did not participate in this Plan update.
2016 -25	Greeley	City-Initiated Floodway Rezone	On-going project.
2016 -26	Greeley	Mitigate Severe Repetitive Loss Property	On-going project.
2016 -27	Greeley	Cache la Poudre, West Greeley USACE Project	On-going project.
2016 -28	Greeley	Poudre River Cleaning	On-going project.
2016 -29	Greeley	Hwy. 85 Bridge Replacement	On-going project.
2016 -30	Greeley	River Bypass Channel	On-going project.
2016 -31	Greeley	Poudre River Flood Mitigation Master Planning	On-going project.
2016 -32	Hudson	Update EOP / Crisis Action Guide and Incorporate Hazard Mitigation	Updated into New MAG, On going project

ID	Organization	Action	Status
2016 -33	Hudson	Integrated Community Mitigation Planning and 2015 Citizen Survey Review	Not completed
2016 -34	Hudson	Develop Resilience - Hazard Awareness & Preparedness Education Plan	Not completed
2016 -35	Hudson	Distribution of All Hazards Emergency Alert Radios	Updated to new MAG, Repeater System. On-going project.
2016 -36	Keenesburg	Floodplain Training	On-going project.
2016 -37	Keenesburg	Notify Travelling Public about Shelter Locations	Shelter information is updated on the community website. On-going project.
2016 -38	Keenesburg	Tornado Warning System Public Education	The town does have one siren that is operated by Weld County, education is ongoing. On-going project.
	Kersey	All	This community did not participate in this Plan update.
2016 -39	LaSalle	Community Preparedness Education	On-going project.
2016 -40	LaSalle	Develop Upkeep Schedule for Emergency Power System	On-going project.
2016 -41	LaSalle	Implement Planned Stormwater Improvements	Completed 2017/18.
2016 -42	Mead	Policy Group Training for Elected Officials	This will be an ongoing project to train incoming elected officials, and refresher training for those retaining positions in the community. On-going project.

ID	Organization	Action	Status
2016 -43	Mead	Acquire Back-up Power for Public Works	Updated: In progress. On-going project. New public works facility.
2016 -44	Mead	Update Policies and Plans with Mitigation Principles	Completed
2016 -45	Milliken	Josephine Storm Sewer Improvements Project	Completed
2016 -46	Milliken	Acquisition of Flood Prone Lands and Structures	Completed and ongoing
2016 -47	Milliken	Procurement and Installation of Tornado Sirens	Siren installed at PD, Project ongoing.
2016 -48	Milliken	Generators for Public Buildings	Completed
2016 -49	Milliken	Stormwater Improvements Throughout Milliken	Completed and on-going project.
2016 -50	Milliken	Tornado Shelters in Public Buildings and Parks	Not Completed. Not currently a priority project.
2016 -51	Pierce	Community Preparedness Education	Completed annually, On-going project.
2016 -52	Pierce	Drainage County Rd. 88 / Hwy. 85	There is no current progress on this project. Project will be ongoing through 2020-2025, with collaboration of county and state and City of Thornton for adjoining property. On-going project.
2016 -53	Platteville	Emergency Management Plan	Project was not completed. On-going project.
2016 -54	Platteville	Early Warning System for Various Hazards	A fifth tornado siren was installed in 2018 and Platteville now has sufficient emergency warning coverage for the community. Project Completed.

ID	Organization	Action	Status
2016 -55	Platteville	Master Storm Drainage Study	The study was completed in September of 2016 and the Town is pursuing various recommendations. Project Completed.
2016 -56	Severance	Downtown Drainage and Street Improvements	Completed November 2016- Updated towns Master Drainage Plan with includes implementation and finance plan to continue mitigating localized flooding issues
2016 -57	Windsor	John Law Ditch - Flood Mitigation Project	Generator project completed in Oct. 2019, Cost 49k.
2016 -58	Windsor	Acquire Emergency Power System	Generator project completed in 1st Qrt 2019, Transfer switches on all buildings on Public Safety Complex budgeted for 2021 - Cost $49k. On-going project.
2016 -59	Windsor	Conduct LETA 911 Outreach to Residents	Completed 2017- LETA 911 is now known at NOCO Alerts
2016 -60	Windsor	Flood Mitigation on CR 13	Completed and ongoing - budgeted for routine yearly maintenance along the Cache La Poudre River. On-going project.

1.5 2021 HMP Actions

The final, and arguably the most important step in updating the Mitigation Strategy was the creation of new mitigation actions. In preparing their mitigation actions, the County and each participating jurisdiction considered the planning goals and their individual hazard risks, priorities, and capabilities to mitigate identified hazards. The actions below represent the key outcome of the mitigation planning process. A number of 2016 mitigation actions are on-going or have been deferred to this updated 2021 Plan. These are highlighted in green throughout the Table.

The full Mitigation Action Guides (MAGs) for 2021 are included in Appendix A: 2021 Mitigation Action Guides.

Table 4. 2021 Mitigation Actions

ID	Organization	Action	Notes
2021-01	1-Weld county	County Resiliency, Building of Lifelines and Subcomponents in all Jurisdictions	
2021-02	2-Weld County	Lifeline Integration – Health and Medical Resiliency Study	
2021-03	3-Weld County	Floodplain Management	

ID	Organization	Action	Notes
2021-04	4-Weld County	Alert Flood Warning System	
2021-05	5-Weld County	Improve Dam Safety	
2021-06	6-Weld County	Establish an ongoing or annual Public Education Campaign regarding Hazards and Emergency Management	
2021-07	7-Weld County	Inventory Critical Facilities within the Floodplain to Determine if they should be Protected	
2021-08	8-Weld County	Public Warning System - IPAWS Awareness and Training	
2021-09	9- Weld County	StormReady / Weather Safety	
2021-10	1-Weld County - PW	WCR 120,110,108 Low Water Crossing	
2021-11	2-Weld County - PW	Bridge 19/46.5A	
2021-12	3-Weld County - PW	Bridge 54/13A	
2021-13	4-Weld County - PW	Bridge 60.5/49A	
2021-14	5-Weld County - PW	Bridge 34/17A	
2021-15	6-Weld County - PW	Galeton Drainage Project	
2021-16	7-Weld County - PW	Gill Drainage Project	
2021-17	1-Ault	Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning	
2021-18	2-Ault	Hazardous Materials – Community Impact Study	
2021-19	1-Dacono	Design and Construction of CO Blvd Bridge	Completed Engineering Review and Design and On-going

ID	Organization	Action	Notes
2021-20	2-Dacono	Grandview Street and York Street Flood Mitigation	
2021-21	1-Eaton	Drought Plan Development	Target date 12/31/2029
2021-22	2-Eaton	Roundabout Collins Rd & CR35	
2021-23	3-Eaton	Pump Pit	
2021-24	1-Erie	County Line Rd, Tellane to Cheeseman	
2021-25	2- Erie	Coal Creek Improvements Reach 1	
2021-26	3-Erie	Coal Creek Improvements reach 2	
2021-27	4-Erie	Coal Creek Improvements reach 3	
2021-28	5-Erie	Old Town Drainage Improvements	
2021-29	6-Erie	Zone 3 Storage Tank	Updated 11-13 -20 , Designed in 2020, installation in 2021
2021-30	7-Erie	Well Project	
2021-31	8-Erie	Zone 2 Water System Improvements	
2021-32	9-Erie	Zone 3 Storage Tank	
2021-33	10-Erie	Zone 3 Waterline Improvements	
2021-34	11-Erie	Erie Parkway & WCR 7 Intersection Improvements	
2021-35	12-Erie	Signal Communications Project	
2021-36	1-Evans	31st St Stormwater Outfall	

ID	Organization	Action	Notes
2021-37	2-Evans	Bay at the Landings Inlet Flood Mitigation	Some ordinance implemented, some elevations done, on going project
2021-38	3-Evans	Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning	
2021-39	1-Firestone	Installation of Infrastructure Transmission Technologies	
2021-100	2-Firestone	Godding Hollow Tri-Town Basin Outfall Improvements	
2021-101	3-Firestone	Community Connect Program	
2021-41	1-Fort Lupton	Warning Sirens	
2021-42	2-Fort Lupton	Emergency Notification Signs	
2021-43	3-Fort Lupton	Water Storage	
2021-44	4-Fort Lupton	Well Inclusions	
2021-45	5-Fort Lupton	Localized Flooding	
2021-46	6-Fort Lupton	Emergency Shelter Generator	
2021-47	1-Frederick	Box Culvert at Bella Rosa Parkway	
2021-48	2-Frederick	Potable Water System, Emergency Supply	
2021-49	3-Frederick	Town Facilities- Expansion & Modification	
2021-102	4-Frederick	Community Connect Program	
2021-50	1-City of Greeley	Extreme Heat/Drought Resiliency Program Development	
2021-51	2-City of Greeley	Prairie Fire Mitigation Program Development/CWPP	

ID	Organization	Action	Notes
2021-52	1-Greeley- PW	City-Initiated Floodway Rezone	
2021-53	2-Greeley -PW	Mitigate Risk to Severe Repetitive Loss Property	
2021-54	3-Greeley-PW	Cache la Poudre, West Greeley USACE Project	
2021-55	4-Greeley-PW	Poudre River Cleaning	
2021-56	5-Greeley -PW	Hwy 85 Bridge Replacement	
2021-57	6-Greeley -PW	River Bypass Channel	
2021-58	7-Greeley-PW	Poudre River Flood Mitigation Master Planning Project – Ash Ave to 21st Ave	
2021-59	1-Hudson	Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning	
2021-60	2-Hudson	Repeater System	
2021-61	3-Hudson	Updates Comprehensive Plan / Identify Mitigation actions	Combined 2 from Previous update, Updated into New MAG
2021-62	1-Johnstown	Resiliency Study	Updated to new MAG, Repeater System.
2021-63	2-Johnstown	Drainage Improvements Old Town	
2021-64	3-Johnstown	Install Emergency Generator	
2021-65	4-Johnstown	Community Preparedness Education	
2021-66	5-Johnstown	Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning	
2021-67	1-Keenesburg	Floodplain Training	
2021-68	2-Keenesburg	Notify Travelling Public about Shelter Locations	

ID	Organization	Action	Notes
2021-69	3-Keenesburg	Tornado Warning System Public Education	Shelter information is updated on the community website- this is an ongoing project
2021-103	4-Keenesburg	Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning	
2021-70	1-LaSalle	Community Preparedness Education	The town does have one siren that is operated by Weld County, education is ongoing.
2021-71	2-LaSalle	Develop Upkeep Schedule for Emergency Power Systems	
2021-104	3-LaSalle	Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning	
2021-72	1-Mead	Policy Group Training for Elected Officials	
2021-73	2-Mead	Update Policies and Plans with Mitigation Principles - North Creek Flood Plain Analysis	
2021-74	3-Mead	Update Policies and Plans with Mitigation Principles - Emergency Operations Plan	
2021-75	4-Mead	Update Facilities- Public Works facility – Design & Construction	
2021-76	5-Mead	Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning	
2021-77	1-Milliken	Convert acquired land and property in the floodplain to Open Space	
2021-78	2-Milliken	Procurement and Installation of Tornado Sirens	
2021-79	3-Milliken	Storm Water Improvements Throughout Milliken	
2021-80	4-Milliken	Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning	
2021-81	1-Nunn	Master Drainage Plan	
2021-82	2-Nunn	Tornado Shelter to be ADA Compliant	

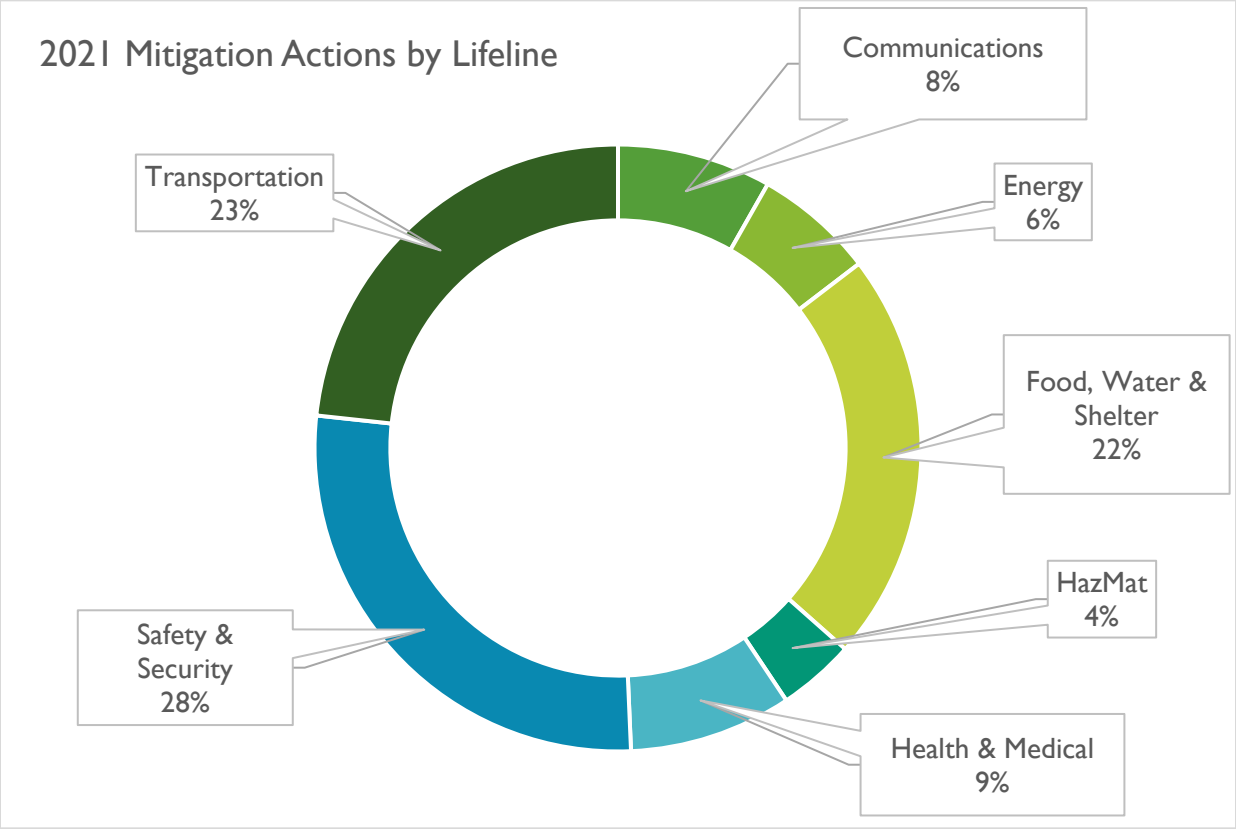
ID	Organization	Action	Notes
2021-83	3-Nunn	Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning	
2021-84	1-Pierce	Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning	
2021-85	2-Pierce	County Road 90 Improvements	
2021-86	3-Pierce	Community Preparedness Education	
2021-87	4-Pierce	Drainage County Rd 88 / Hwy 85	
2021-88	1-Platteville	Comprehensive Plan Update and Training	There is no current progress on this project. Project will be ongoing through 2020-2025, with collaboration of county and state and City of Thornton for adjoining property.
2021-89	2-Platteville	Community Education of updated Early Warning System, Training and Utilization	
2021-90	3-Platteville	Tornado Sirens - Maintenance and testing	
2021-91	4-Platteville	Comprehensive EM Plan - Update and training	
2021-92	5-Platteville	Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning	
2021-93	6-Platteville	Master Storm Drainage Plan	
2021-94	1-Severence	Downtown Drainage and Street Improvements (Phase 2)	
2021-95	2-Severence	Hidden Valley Parkway Crossing	
2021-96	3-Severence	Harmony Regional Drainage Project	
2021-97	1-Windsor	Eastman Park Riverwalk Project	
2021-98	2-Windsor	Acquire Emergency Power System Transfer Switches - Public Safety Complex	Generator project completed in 1st quarter 2019, Transfer switches on all buildings on

ID	Organization	Action	Notes
			Public Safety Complex budgeted for 2021 Cost 49k
2021-99	3-Windsor	Flood Mitigation on CR 13	Completed and ongoing- budgeted for routine maintenance along the Cache La Poudre River- Yearly Maintenance

1.6 Lifeline Mitigation

Through development of the MAG documents, each jurisdiction also worked at identifying those specific Lifelines and Subcomponents applicable to each mitigation action. A summary of these mitigation actions is shown by Lifeline in Figure 2. This information will allow Weld County to better assess and track the mitigation actions included in this plan going forward. During future plan maintenance activities, this Lifeline analysis will provide communities an opportunity to re-evaluate mitigation actions and remaining unmet needs.

Figure 2. 2021 Mitigation Actions by Lifeline



1.7 Mitigation Capabilities

The mitigation capability assessment examines the ability of Weld County to implement and manage the comprehensive mitigation strategy laid out in this Plan. The strengths, weaknesses, and resources of the County are identified here as a means for evaluating and maintaining effective and appropriate management of the county's hazard mitigation program.

Mitigation capabilities are classified into the following types and are detailed in the following Tables.

- Planning & Regulatory
  - Plans
  - Building Code, Permitting, & Inspection
  - Land Use Planning & Ordinances
- Administrative & Technical
  - Administration
  - Staff
  - Technical
- Financial
  - Funding Resources
- Education & Outreach
  - Programs & Organizations

Planning and regulatory capabilities are powerful tools for implementing hazard mitigation. The County currently utilizes or has implemented most of these capabilities shown in Table 5. It is important for the County to regularly review each of these tools, to identify opportunities for further risk reduction efforts.

Table 5. Planning & Regulatory Capabilities

Mitigation Capability	Utilized?	Comments
Comprehensive, Master, or General Plan	Yes	Portions updated in 2020
Capital Improvement Program or Plan (CIP)	Yes	Public Works – roads only
Floodplain Management Plan	No	
Stormwater Program / Plan	No	
Community Wildfire Protection Plan (CWPP)	No	
Erosion / Sediment Control Program	No	
Economic Development Plan	No	
Other:	Yes	OEM plans
Building Codes (Year)	Yes	2018 IBC, No Maint. Code, Uniform code abatement of dangerous buildings (1997), No Fire Code
Building Code Effectiveness Grading Schedule (BCEGS) Rating	-	Unknown, this will be further researched as part of this Plan's future maintenance process
Site Plan Review Requirements	Yes	Planning review, County code
Other:		
Zoning Ordinance (Land Use)	Yes	County code
Subdivision Ordinance	Yes	Updating in 2020 County code
National Flood Insurance Program (NFIP) Participant	Yes	County code
Flood Insurance Study / Flood Insurance Rate Map / DFIRM	Yes	There are gaps that need to be studied, County Code
Floodplain Ordinance	Yes	County code
Elevation Certificates for Floodplain Development	Yes	County code
Community Rating System (CRS) Participant	No	
Open Space / Conservation Program	No	
Growth Management Ordinance	No	
Stormwater Ordinance	Yes	County code
Other Hazard Ordinance (steep slope, wildfire, snow loads, etc.)	Yes	Airport Overlay District, Geologic Hazard Overlay
Other:	Yes	Non-conforming structures, County code

Available resources including staff, municipal groups, and technology are all vital for a community to be able to implement hazard mitigation. Weld County is fortunate to have most all of these capabilities identified in Table 6.

Table 6. Administrative & Technical Capabilities

Mitigation Capability	Utilized?	Comments
Planning Commission	Yes	
Mitigation Planning Committee	Yes	Hazard Mitigation Plan
Maintenance Programs (tree trimming, clearing drainage, etc.)	Yes	Public Works in Right-of-Way
Emergency Manager	Yes	OEM
Building Official	Yes	Director of Planning
Floodplain Administrator	Yes	Director of Planning
Community Planner	Yes	7 planners plus Director
Transportation Planner	Yes	Public Works
Civil Engineer	Yes	Public Works
GIS Capability	Yes	IT
Resiliency Planner	No	
Other:		
Warning Systems / Services (flood)	Yes	Stream gauges / river warning (6)
Warning Systems / Services (other / multi hazard)	Yes	Code RED, IPAWS, tornado sirens, EAS plan
Grant Writing / Management	Yes	Each Director, per department
Other:		

The ability of a community to implement a comprehensive mitigation strategy is largely dependent on available funding. These related municipal capabilities are outlined in Table 7 and show that the County utilizes a number of these financial tools that can support mitigation activities.

Table 7. Financial Capabilities

Mitigation Capability	Utilized?	Comments
Levy for Specific Purposes with Voter Approval	Yes	Fire Protection Districts
Utilities Fees	No	
System Development / Impact Development Fee	Yes	Impact fees come from Public Works
General Obligation Bonds to Incur Debt	No	
Special Tax Bonds to Incur Debt	No	
Open Space / Conservation Fund	Yes	Conservation fund: lottery $ all goes to municipalities
Stormwater Utility Fees	No	
Capital Improvement Project Funding	Yes	Comes from Public Works
Community Development Block Grants (CDBG)	Yes	Specific to grant applied for
Withheld spending in hazard-prone areas	No	
Other:		

Education and outreach are important capabilities that allow a community to continue the conversation with their public regarding hazard risk and opportunities to mitigate. Table 8 shows that the County does leverage most of these capabilities.

Table 8. Education & Outreach Capabilities

Mitigation Capability	Utilized?	Comments
Public Hazard Education / Outreach Program	Yes	OEM - Community education
Local Citizen Groups That Communicate Hazard Risks	Yes	Whole Community Group, LEPC
Firewise	No	
NOAA StormReady Program	Yes	OEM
Other:		

Each participating municipality has also evaluated their own mitigation capabilities, details are included in Appendix B: Municipal Annexes.

2 Plan Implementation and Maintenance

This chapter discusses how the mitigation strategy will be integrated across other planning efforts and how the overall Hazard Mitigation Plan will be evaluated, maintained, and enhanced over time. This section also discusses how the public and participating stakeholders will continue to be involved in the hazard mitigation planning process.

2.1 Plan Integration

Weld County maintains a comprehensive set of emergency management plans, developed in a multi-disciplinary environment where county departments, jurisdictional agencies and representatives, non-profit and community organizations, and the private sector are included in the planning process. This set of plans encompass all phases of emergency management and the work done on the 2021 Weld County Hazard Mitigation Plan (HMP) will be integrated into these efforts moving forward.

The 2021 HMP, and especially the hazard and risk assessment within it, will be used to inform the Local Emergency Operations Plan (LEOP) and the Recovery Plan (RP). For example, the highest risk hazards and highest priority actions identified in the HMP influence coordinated planning for response in the LEOP. Additionally, when the LEOP and RP are activated, there will be an opportunity to identify mitigation actions and capability gaps that may be addressed in the HMP. By integrating the HMP with the County's comprehensive set of emergency management plans, a strong foundation for resilience has been set through smart emergency preparedness, mitigation, response, and recovery; before, during, and after an emergency or disaster event.

Additionally, there are a number of other community plans that will benefit from content within this Plan. Integrating components of this hazard mitigation plan across these other community planning efforts will be an ongoing effort and will help to ensure no strategic conflicts are created through other plans. This will also help to ensure that hazard mitigation is considered during all applicable future County, local, and regional planning efforts.

Appendix B: Municipal Annexes also contain some additional content, specific to some municipalities, regarding Plan Integration efforts.

2.2 Plan Maintenance and Implementation

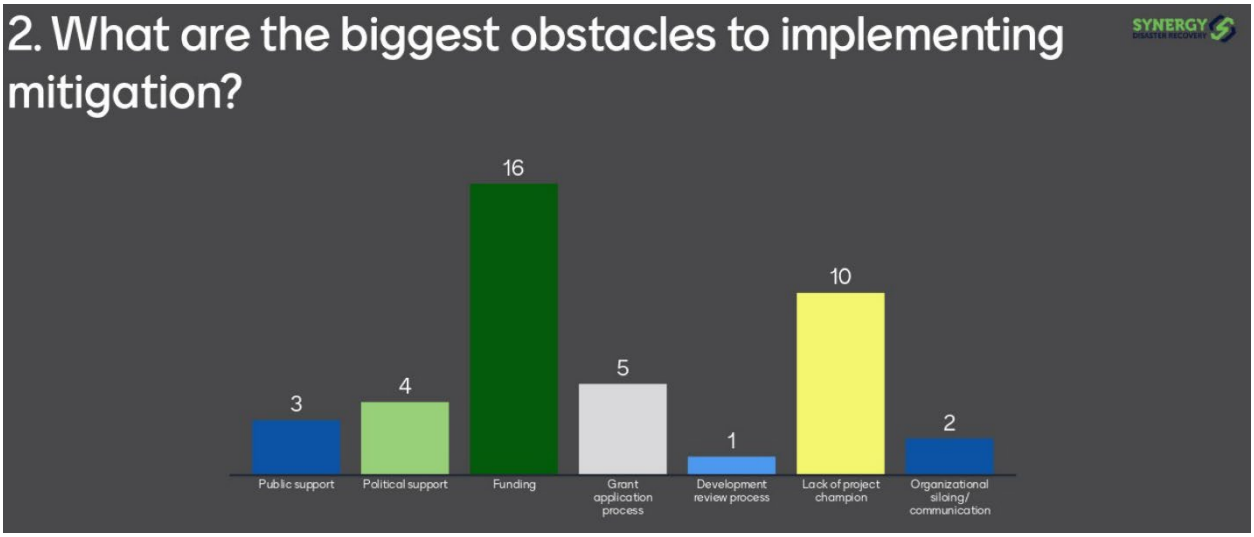
Weld County will actively maintain the hazard mitigation plan by coordinating a review of all mitigation actions annually, and will determine needed updates to other sections of the HMP at the January Multi-Agency Coordinating Group meeting each year. This will include a review of all referenced hazard webmaps cited in the plan as a resource for communities.

Weld County OEM will present a summary status report of the HMP to the Weld County Commissioners annually. This report will be made available to the general public to highlight progress made towards implementation. Additionally, Weld County OEM staff will meet with participating jurisdictions on a bi-monthly schedule to review progress made towards implementing mitigation actions.

As discussed during a HMPC workshop, implementation of mitigation actions is oftentimes challenging. Some of the larger obstacles the HMPC identified were funding and a lack of implementation champions (Figure 3). The funding challenges can potentially be offset through the use of Federal and State grant funding. The Weld County Office of Emergency Management (OEM) will disseminate information relating to potential mitigation funding sources to communities and the HMPC as application periods are identified.

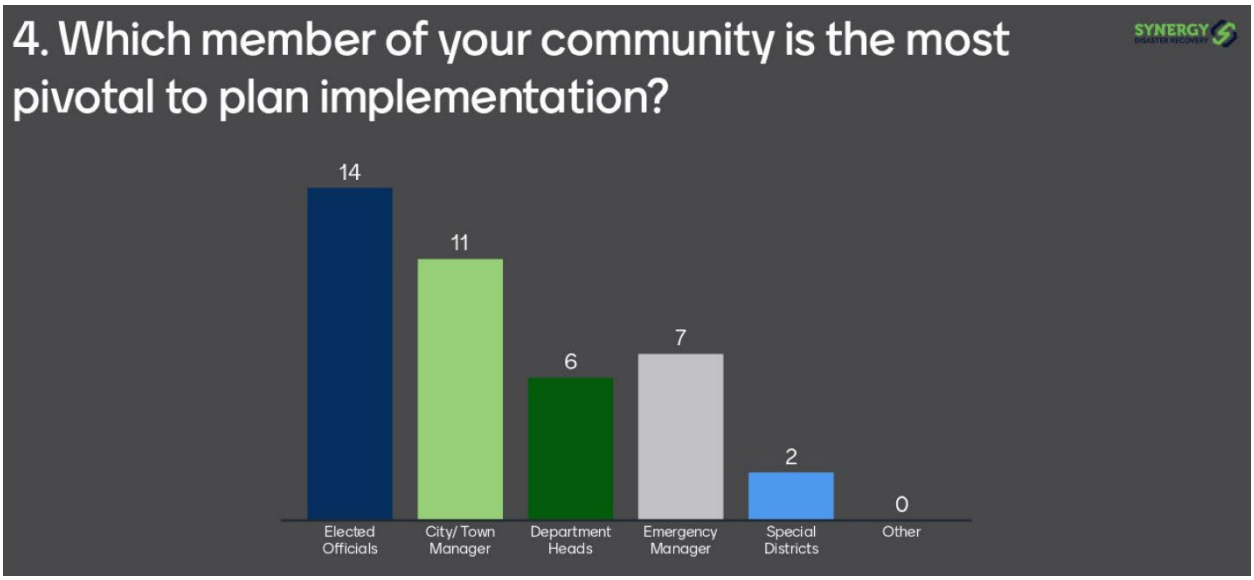
Appendix B: Municipal Annexes also contain some additional content, specific to some municipalities, regarding Plan Maintenance and Implementation efforts.

Figure 3. Implementation Obstacles HMPC Poll



The HMPC was also asked during a workshop which members of their community were the most vital to Plan implementation. Figure 4 shows that many felt elected and non-elected leadership support is the key to successfully implementing mitigation.

Figure 4. Plan Implementation HMPC Poll



Other efforts aimed at continued public participation will include mitigation-specific public outreach and engagement activities (e.g. town hall meetings, information booths at community events, social media campaigns, etc.) These annual efforts (if not more frequent) will be spearheaded by the County to facilitate continued public participation in the plan maintenance process over time.

The 2021 Plan will be updated by the FEMA approved five-year anniversary date, as required by the Disaster Mitigation Act of 2000, or following a disaster event. Future Plan updates will account for any new hazard vulnerabilities, special circumstances, or new information that becomes available. During the five-year review process, the following questions will be considered as criteria for assessing the effectiveness of the Weld County Hazard Mitigation Plan.

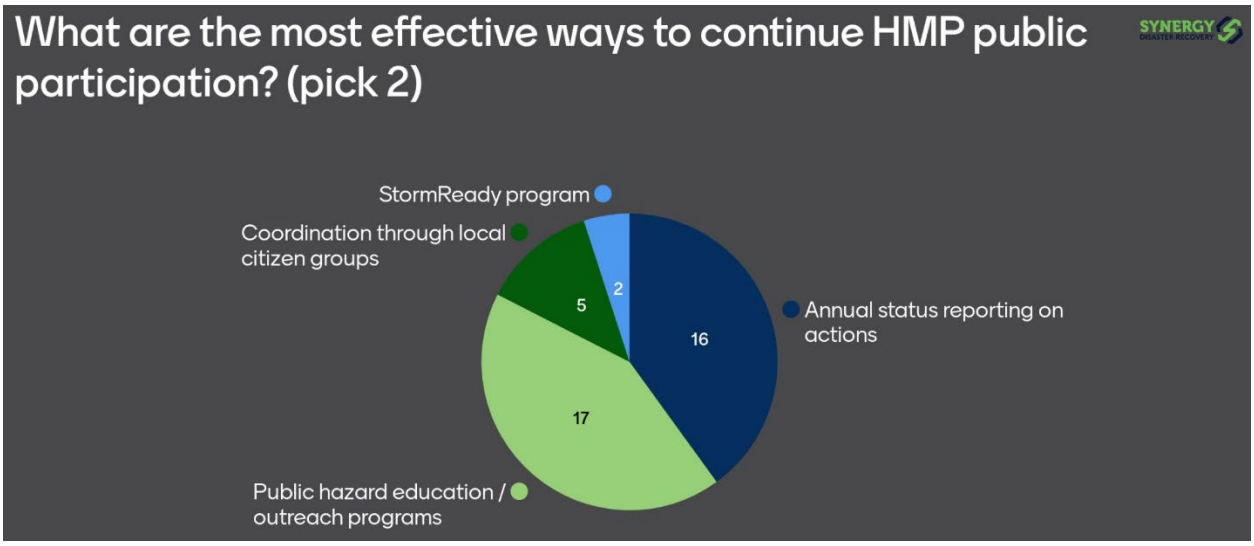
- Has the nature or magnitude of hazards affecting the County changed?
- Are there new hazards that have the potential to impact the County?
- Do the identified goals and actions address current and expected conditions?
- Have mitigation actions been implemented or completed?
- Has the implementation of identified mitigation actions resulted in expected outcomes?
- Are current resources adequate to implement the plan?
- Should additional local resources be committed to address identified hazards?

Issues that arise during monitoring and evaluation which require changes to the local hazard, risk and vulnerability summary, mitigation strategy, and other components of the plan will be incorporated during future updates.

2.3 Municipal Efforts

Figure 5 presents relevant polling responses that the HMPC provided during the planning workshops, when asked about effective ways to continue public participation.

Figure 5. Continued Public Participation HMPC Poll



Additional poll responses provided other specific ideas for jurisdictions to consider when continuing public HMP participation. Some suggestions included: town hall meetings, social media, booths at events, newsletters / utility bill inserts, websites, push notifications, public information nights, and adding HMP discussions to agendas of regular standing meetings,

Figure 6 and Figure 7 show responses from the HMPC relevant to effective tools for implementing mitigation. Additional responses mentioned creating HMP work groups or advisory boards and integrating mitigation strategy conversations into annual budgeting processes.

Figure 6. Implementation Tools (Plans / Programs) HMPC Poll

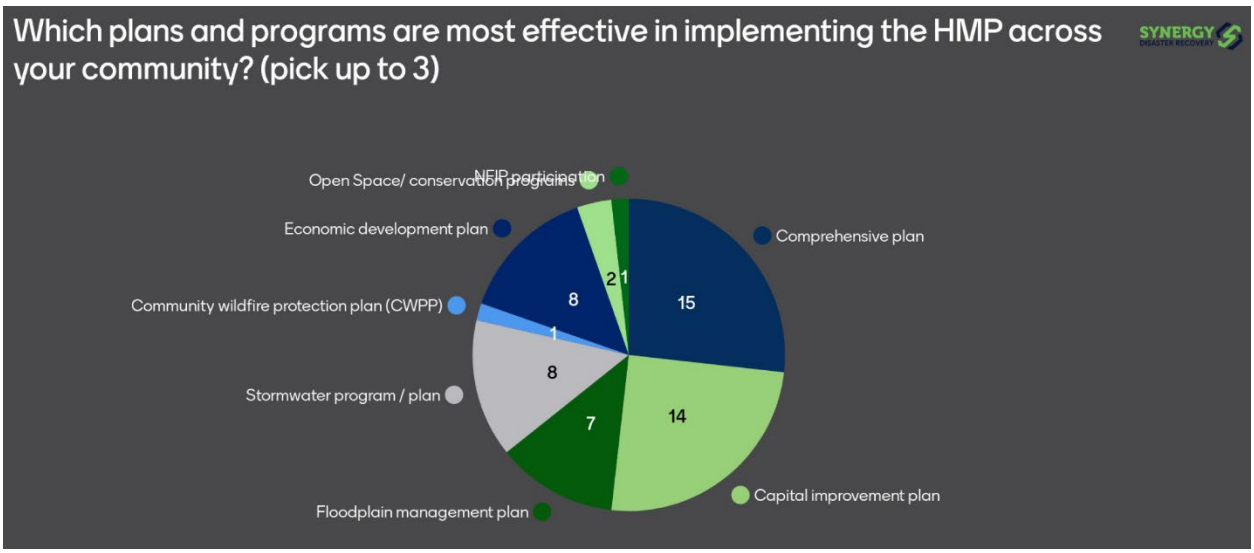
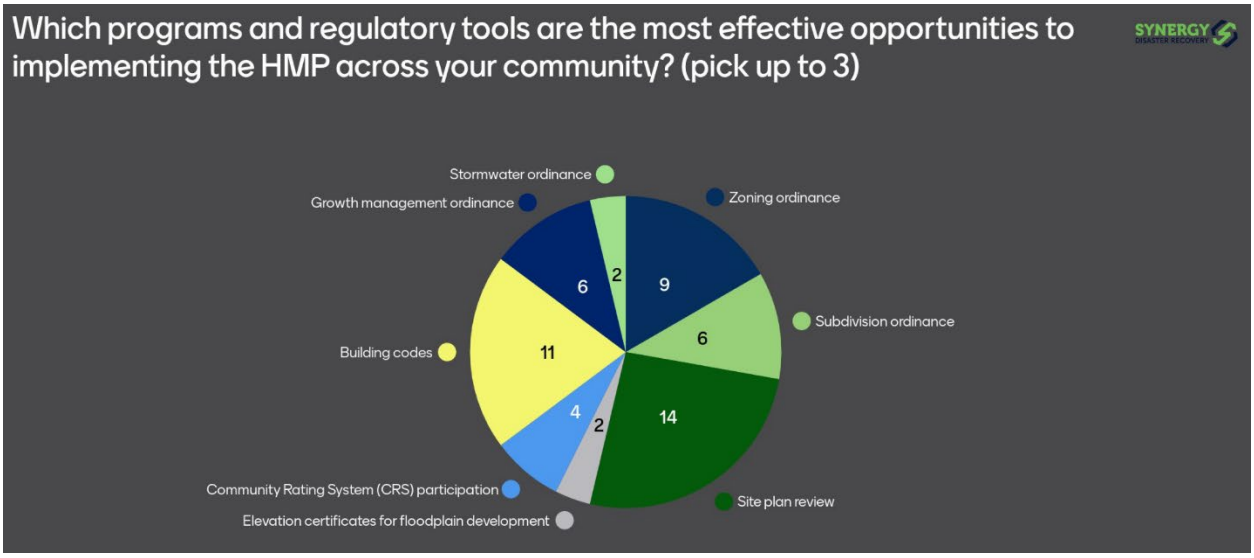


Figure 7. Implementation Tools (Regulatory) HMPC Poll



3 Planning Process

The following section reviews the planning process and public outreach with participating jurisdictions and Weld County to inform the Multi-Jurisdictional Hazard Mitigation Plan.

3.1 Background

The 2021 Weld County Hazard Mitigation Plan (HMP) is an update to the 2016 Plan. Hazard mitigation plans are community-led efforts designed to identify, manage, and avoid risks through pre-planning. This plan is designed to reduce the risks posed by hazards that affect Weld County communities and must be updated and approved by the Federal Emergency Management Agency (FEMA) every five years to keep it current and to maintain eligibility for certain federal Hazard Mitigation Assistance (HMA) Grants.

3.1.1 What is Hazard Mitigation?

The term "hazard mitigation" describes actions that can help reduce or eliminate long-term risks caused by hazards, such as floods, wildfires, tornados, and earthquakes. Hazard mitigation is best accomplished when based on a comprehensive, long-term plan developed before a disaster strikes. As the costs of disaster recovery continue to rise, governments and citizens must find ways to reduce community hazard risks. Oftentimes after disasters, repairs and reconstruction are completed in such a way as to simply restore damaged property to pre-disaster conditions. These efforts may "get things back to normal," but the replication of pre-disaster conditions often results in a repetitive cycle of damage, reconstruction, and repeated damage. Hazard mitigation breaks this repetitive cycle by producing less vulnerable conditions through pre- and post-disaster repairs and reconstruction. The implementation of such hazard mitigation actions by state and local governments means building stronger, safer, and smarter communities that will be able to reduce future disaster losses.

3.1.2 Purpose

Mitigation is an investment in a community's future safety and resiliency. Recent cost-benefit studies have proven mitigation to be cost effective for communities, with mitigation projects returning six dollars for every one dollar spent. Hazard mitigation planning helps residents, business owners, elected officials, and municipal departments think through how to plan, design, build, and establish partnerships for risk reduction. Consider the critical importance of mitigation to:

- Protect public safety and prevent loss of life and injury.
- Reduce property damage to existing and future development.
- Maintain community continuity and strengthen the social connections that are essential for recovery.
- Prevent harm to a community's unique economic, cultural, and environmental assets.
- Minimize operational downtime and accelerate recovery of government and business after disasters.
- Reduce the costs of disaster response and recovery and the exposure to risk for first responders.
- Help accomplish other community objectives, such as capital improvements, infrastructure protection, open space preservation, and economic resiliency.

Additionally, Weld County and its municipalities will benefit from this project by:

- Ensuring eligibility for all sources of hazard mitigation funds made available through FEMA.
- Increasing public awareness and understanding of vulnerabilities as well as support for specific actions to reduce losses from future disasters.

- Ensuring community policies, programs, and goals are compatible with reducing vulnerability to all hazards and identifying those that are incompatible.
- Building partnerships with diverse stakeholders, increasing opportunities to leverage data and resources in reducing workloads, as well as achieving shared community objectives.
- Expanding the understanding of potential risk reduction measures to include: local plans and regulations; structure and infrastructure projects; natural systems protection; education and awareness programs; and other tools.
- Informing the development, prioritization, and implementation of mitigation projects. Benefits accrue over the life of these projects as losses are avoided from each subsequent hazard event.

3.1.3 Scope

This 2021 Plan has been prepared to meet requirements set forth by FEMA and the Colorado Division of Homeland Security and Emergency Management (DHSEM) in order for Weld County and its municipalities to be eligible for funding and technical assistance from state and federal hazard mitigation programs. This Plan will be updated and FEMA-approved within its five-year expiration date.

3.1.4 Authority

This Hazard Mitigation Plan has been adopted by Weld County and its participating jurisdictions in accordance with the authority granted to counties and municipalities by the State of Colorado. This Plan was developed in accordance with current state and federal rules and regulations governing local hazard mitigation plans. The Plan shall be monitored and updated on a routine basis to maintain compliance with the following legislation and guidance:

- Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C., Section 322, Mitigation Planning, as enacted by Section 104 of the Disaster Mitigation Act of 2000 (P.L. 106-390) and by FEMA's Interim Final Rule published in the Federal Register on February 26, 2002, at 44 CFR Part 201

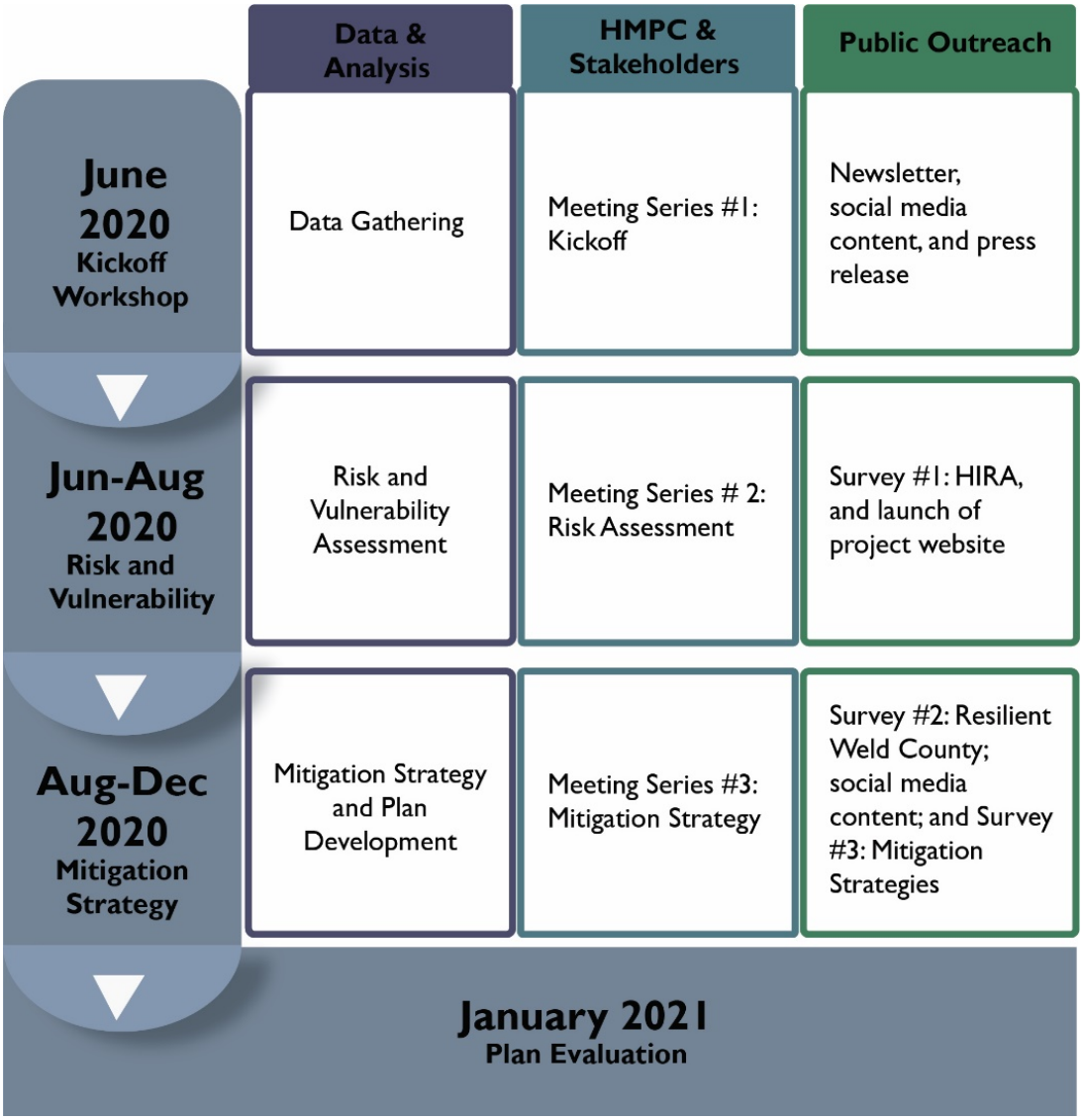
The following Federal Emergency Management Agency (FEMA) guides and reference documents were used to prepare this document:

- FEMA. Local Mitigation Plan Review Guide. October 1, 2011
- FEMA. Local Multi-Hazard Mitigation Planning Handbook. March, 2013.

3.2 Update Process and Methodology

The planning process included data gathering and modeling while simultaneously meeting with a Hazard Mitigation Planning Committee (HMPC) and gathering public input to support the Plan. The following section details the timeline and methods of public outreach, committee meetings and plan development. A high-level summary is presented in Figure 8.

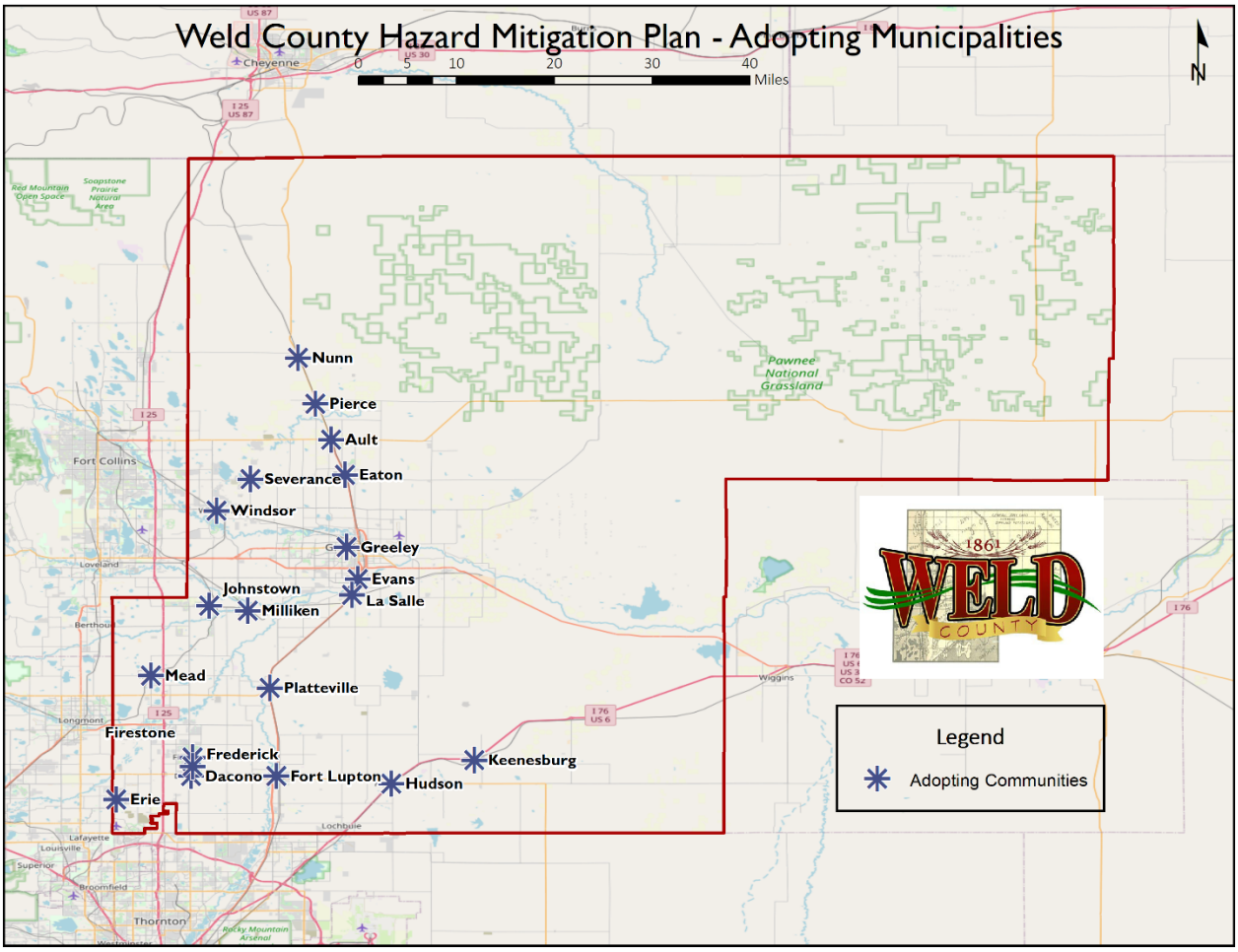
Figure 8. Process Timeline



3.2.1 Participating Organizations

All municipalities and special districts were notified of the participation requirements related to the adoption of the Plan and the formation of the Hazard Mitigation Planning Committee (HMPC). Numerous planning meetings were held to ensure that all information contained in the Plan is correct, and that the input provided by participating agencies, organizations, and the public has been included. The following jurisdictions shown in Figure 9 joined the County and participated in the planning process.

Figure 9. Map of Adopting Communities



Due to the COVID-19 pandemic, modifications were made to the intended outreach formats. To avoid the spread of the virus all HMPC meetings were held in an online interactive format with polling and group discussions. Separate stakeholder meetings were conducted over the phone or in small groups. To ensure public participation, the online surveys, educational materials, and press releases were distributed widely through various social media, direct e-mailing, newsletters, media organizations, and targeted groups for several municipalities.

3.2.2 Incorporation in Community Plans

The current 2018 State of Colorado Natural Hazards Mitigation Plan was reviewed for incorporation into the 2021 Weld County Multi-Jurisdictional Hazard Mitigation Plan in addition to the following documents and resources, as appropriate:

- 2018 Milliken Risk Assessment
- 2018 Colorado Drought Mitigation Response Plan
- 2019 Weld County Office of Emergency Management Hazmat Transportation Plan
- 2019 Economic & Demographic Profile, Weld County, CO
- 2020 Colorado State Demography office
- 2021 Weld County Comprehensive Plan

3.3 Hazard Mitigation Planning Committee (HMPC)

The Weld County HMPC consisted of members of participating local governments and districts, as well as public stakeholders, special interest groups, and County staff. Invitations to participate were broadly distributed across these groups.

Additionally, Weld County invited all neighboring counties and other relevant organizations to also participate in the planning process. County staff extended this invitation regularly during their monthly Northeast Emergency Manager meetings, other coordination calls, and other regional meetings held over the course of 2020. These meetings and calls provided numerous opportunities for Weld County to provide HMP project updates during the planning process. Weld County staff also coordinated directly with neighboring counties whom they share bi-county municipalities with, to ensure these communities are adequately covered by a hazard mitigation plan.

The role of the HMPC was to review and comment on the content of the plan as it was developed and to weigh in on the big decisions to enhance the plan with local expertise. The HMPC was tasked with participating in meetings, to meet one-on-one with Weld County Office of Emergency Management, to disseminate public outreach materials, and to inform and review plan content. Members of the HMPC participated in development of the risk assessment, mitigation strategy development, plan review, public outreach, and plan maintenance strategies. Table 9 presents a list of the HMPC members.

Table 9. HMPC Members

Planning Committee	Title	Jurisdiction
Roy Rudisill	OEM - Director and LEPC Chair	Weld County
Denise Bradshaw	Emergency Management Coordinator	Weld County
David Burns	Emergency Management Sr. Coordinator	Weld County
Gracie Marquez	Emergency Management Specialist	Weld County
Adrienne Sandoval	Mayor	Town of Platteville
Andrew Martinez	Mayor	Town of LaSalle
Angela Wilson	Communications Manager	Town of Frederick
Brian Phillips	Police Chief	Town of Johnstown
Bryce Border	Deputy Police Chief	Town of Firestone
Cathy Payne	Town Clerk	Town of Nunn
Colleen Whitlow	Mayor	Town of Mead
Dan Frazen	Emergency Manager - OEM	City of Greeley
Jeff Schreier	Town Administrator	Town of Eaton
Jennifer Finch	Director of Communication	Weld County
Jennifer Krieger	Community Development Director	City of Dacono
Jim Flesher	Long Range Planner - Planning & Zoning	Weld County
Jim Gerdeman	Police Chief	Town of Severance
Joe Clingan	Police Chief	Town of Nunn
John Gates	Mayor	City of Greeley
Kenneth Gfeller	Mayor	Town of Keenesburg
Kris Krazian	Windsor Fire	Town of Windsor
Kristina Duran	Clerk	Town of Pierce

Planning Committee	Title	Jurisdiction
Kurt Boudette	Emergency Manager	City of Evans
Larry Lorentzen	Town Administrator	Town of Gilcrest
Mark Thompson	Mitigation Planning Specialist	DSHEM
Matthew LeCerf	Town Manager	Town of Hudson
Merrie Garner	OEM Coordinator	Carbon Valley EMA (CVEMA) [Dacono, Firestone, Frederick] / Frederick-Fireston FPD
Mike Haefele	Police Commander	Town of Erie
Monica Bortolini		City of Longmont
Nanci Crom	Mayor	Town of Pierce
Nicholas Wharton	Town Administrator/Manager	Town of Severance
Patricia Gavelda	State Mitigation Planning Program Manager	DHSEM
Pepper McClenahan	Community Development Director	Town of Milliken
Rick Klimeck	Police Chief	Town of Windsor
Rob Piotrowski	Mayor	Town of Ault
Shannon McVaney	Emergency Management Coordinator	City of Longmont
Stephanie Hackett	EM Coordinator	City of Brighton
Steve Iacino	Deputy Chief	Frederick-Firestone FPD
Steve Moreno	BOCC	Weld County
Sue Frederickson		Town of Nunn
Todd Hepworth	Flood Plains Administrator	City of Evans
Tom Nissen	Ault Police	Town of Ault
Tom Parko	Planning Director	Weld County
Troy Renken	Town Administrator	Town of Platteville
Zo Stieber	Mayor	City of Fort Lupton

Formal Plan adoptees signed a letter of participation and attended several of the HMPC meetings. Table 10 lists the meetings attended by each participating organizations, in addition to other interactions with non-Adopting communities..

Table 10. Organizational Participation

Jurisdiction	Pre-Kickoff	HMPC #1	HMPC #2	HMPC #3	HMPC #4	Individual One-on-One's
Weld County	x	x	x	x	x	x
Ault		x		x		x
Dacono	x	x	x	x	x	
Eaton						x
Erie					x	x

Jurisdiction	Pre-Kickoff	HMPC #1	HMPC #2	HMPC #3	HMPC #4	Individual One-on-One's
Evans		x		x	x	x
Firestone	x	x	x	x	x	
Fort Lupton		x	x	x		x
Frederick	x	x	x	x	x	
Greeley		x		x	x	x
Hudson			x	x	x	x
Johnstown			x	x		x
Keenesburg		x				x
LaSalle						x
Mead			x	x	x	x
Milliken					x	x
Nunn					x	x
Pierce		x	x	x		x
Platteville			x	x	x	x
Severance						x
Windsor		x		x	x	x

3.3.1 HMPC Meetings

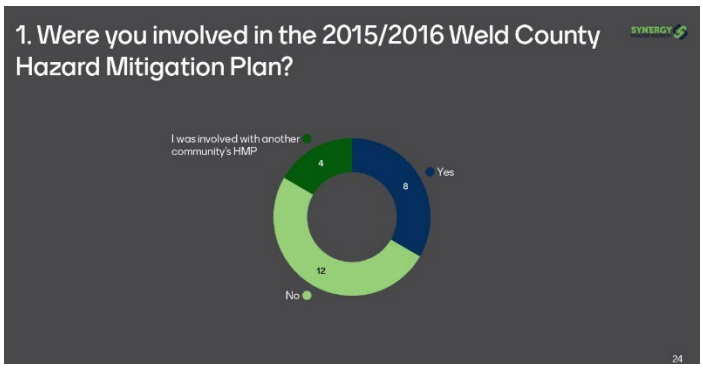
The HMPC had four sets of formal meetings. Meeting dates were identified through an online Doodle Poll to identify the dates available for most participants. Once a set of dates and times was selected, calendar invites and the Weld County (ReadyOP) notification system were used to alert the HMPC members.

Pre-Kickoff Meetings (March 20th, April 9th 2020)

Prior to the first HMPC meeting, two small group meetings occurred on March 20th and April 9th to establish project timelines, goals, stakeholders, and update needs for the project. These pre-kickoff meetings addressed the need for virtual platforms due to the COVID-19 pandemic, an increased jurisdictional collaboration and participation, successes and desired updates from the 2016 Plan, and FEMA approval requirements. Additionally, during these meetings the Lifeline construct was discussed to determine how to best integrate that framework in the HMP.

HMPC Kickoff Meetings (June 15th, 17th 2020)

The kickoff meeting was held virtually on two separate dates to provide flexibility and encourage participation. The meeting started with an introduction to the planning process, schedule, and responsibilities of the HMPC. Discussion also focused on the list of hazards to profile including agricultural hazards (disease and pests) and cyber threats which were not included in the 2016 plan. Participants were invited to discuss how the 2016 plan is used and what elements work well. Other main topics included an introduction to the public outreach portion of the planning process and the group was encouraged to comment on the public outreach process and tools that work best. Other topics included an introduction to the Lifeline construct used by FEMA and Plan requirements to achieve FEMA approval. Group discussion focused on the definition and application of the hazards being added to the 2021 Plan, and a review of the participating jurisdictions. To encourage dialogue in a virtual presentation, live polling was used through a program called Mentimeter. The program presents the results of polls asked in real-time to gather input from the HMPC. The results of the polls are shown throughout this documents to support what was heard.

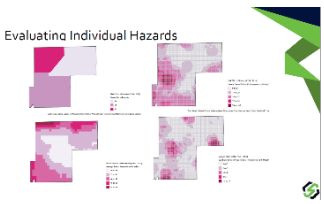


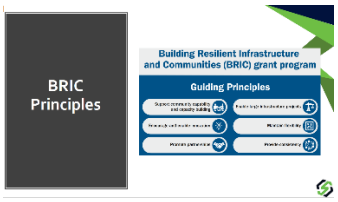
At the end of the meeting, participants were given four action items:

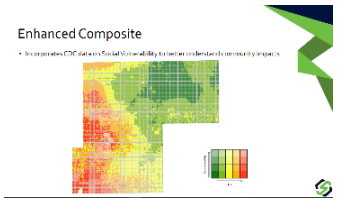
1. Provide the best available hazard data and recent community plans
2. Help expand the HMPC roster
3. Provide input on the public involvement plan
4. Assist with dissemination of public involvement plan messaging

HMPC Hazard Identification and Risk Assessment (HIRA) Meetings (August 18th, 19th 2020)

The HIRA meeting was also held virtually on two separate dates. Discussion in these August meetings focused on the risk inventory and assessment as well as responding to the results of the discussions in the previous June meetings. The kickoff meeting identified funding as the primary obstacle to implementing mitigation. This finding prompted a discussion of assistance programs and an introduction of the new (BRIC) Building Resilient Infrastructure and Communities grant program. The presentation then stepped through the data analytics that were assessed as part of the risk and vulnerability assessment. The discussion then focused on how tools and Lifelines can be assessed to address hazards that pose significant risk. Group discussion focused on how to present the composite risk graphics in the plan, and which municipalities modeled a greater level of risk.





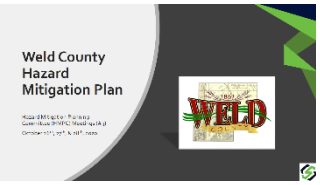


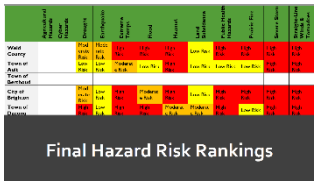
At the end of the meeting, participants were given several action items:

1. Continue to expand the HMPC roster
2. Continue to assist with dissemination of public involvement plan - social media content, newsletter, and survey #1
3. Complete a mitigation capabilities assessment
4. Begin reporting on 2016 mitigation actions

HMPC HIRA Part 2 and Mitigation Strategy Meetings (October 26th, 27th, 28th 2020)

The third meeting was held virtually on three separate dates. The agenda focused on presenting the remaining pieces of the HIRA and initial discussions focused on the Plan's mitigation strategy. Discussion in the October meetings focused again on integrating Lifelines into this Plan.





At the end of the meeting, participants were given several action items:

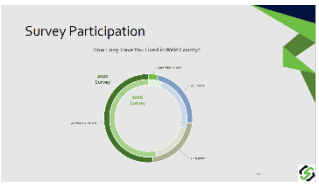
1. Assist with continued dissemination of public involvement plan social media content, newsletter, and survey #2
2. Update and send hazard ranking updates
3. Begin drafting new 2021 mitigation actions

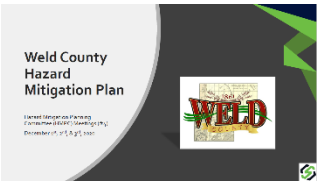
HMP Mitigation Strategy Part 2 Meetings (December 1st, 2nd, 3rd 2020)

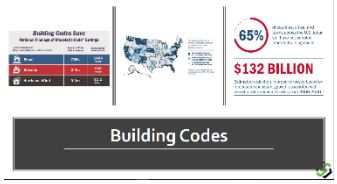
The final HMPC meetings were held virtually on three separate dates. The agenda focused on plan requirements, public outreach responses and survey results, and development of goals, objectives and strategies, mitigation strategy types, and strategy funding mechanisms. Group discussion focused on goal development and the desire to change some wording from the previous plan.

At the end of the meeting, participants were given four action items:

1. Assist with continued public involvement plan messaging and dissemination of survey #3
2. Develop new 2021 mitigation actions
3. Remaining follow-ups from previous requests
4. Provide hazard photos for plan incorporation







HMP Individual Municipality One-on-Ones (on-going throughout planning process)

Weld County OEM also facilitated a number individual community meetings with local municipalities over the course of the planning process. These meetings were vital to planning participation and to ensure municipalities are able to Adopt the updated HMP.

3.3.2 HMPC Review & Comment

The HMPC was provided a review and comment period before the Public Draft Plan was made available. Over 100 comments were received and resolved, as appropriate.

3.4 Public and Stakeholder Participation

Public involvement was a key component to informing the Hazard Mitigation Plan update. Due to COVID-19, in-person events did not occur. However, several techniques listed below were employed to educate the public about the Plan and process and to gather public input on issues and opportunities to make mitigation improvements. The HMPC was asked how best to engage the public in their jurisdiction and the responses highlighted: surveys, social media, providing materials for local groups, newsletters, direct mailers, local press, and community events. The following materials were distributed to communities by the HMPC.

Website

Weld County developed a webpage within the Office of Emergency Management website dedicated to the HMP update. The website provided background information, contacts, and links to the surveys and supporting documents.

Newsletter

In order to provide hardcopy materials for small group gatherings or to insert educational material into existing newsletters, project information was sent out to participating municipalities for distribution. The newsletter described the purpose of the project, timeline, contact, links to the survey, and ways to stay involved in the process.

Social Media

Text describing the HMP and update process was sent to communities in multiple formats to accommodate: e-mail list serves, Facebook, Next Door, and Twitter. Graphic elements were also distributed to allow communities to incorporate educational materials and links to surveys in different media materials.

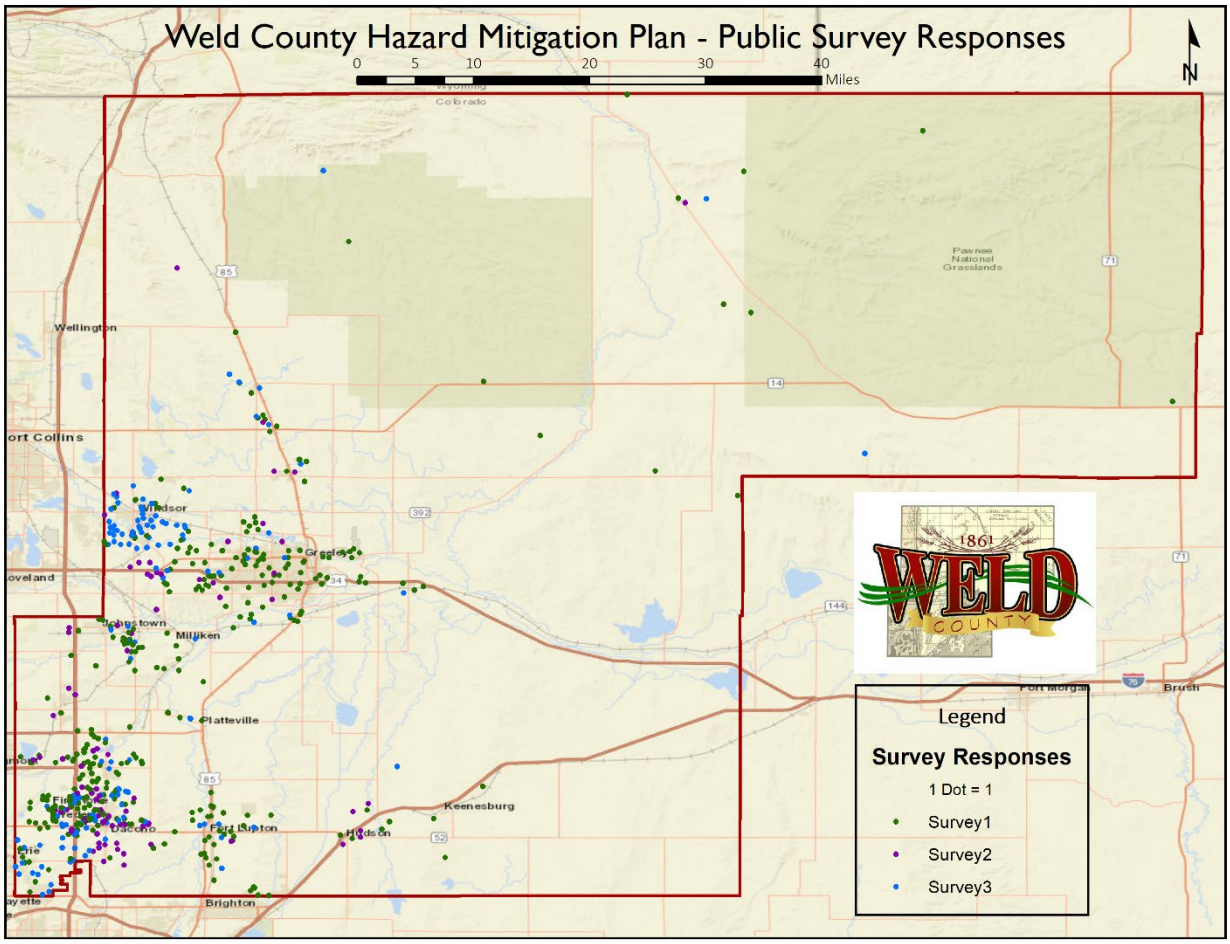
E-mail distribution

Throughout the process Weld County residents signed up to receive project updates. Direct e-mails were sent to those ninety-four individuals with these updates and survey links.

3.4.1 Community Surveys

As part of the outreach process, three surveys were launched to gather community feedback. The first two, "Hazard Risk and Perception Survey" and the "Vision for a Resilient Weld County Survey," were also conducted as part of the 2016 plan, providing opportunities to compare results between years. A map of the survey respondents by survey is shown below. Summaries of the survey results are detailed here.

Figure 10. Map of Survey Respondents

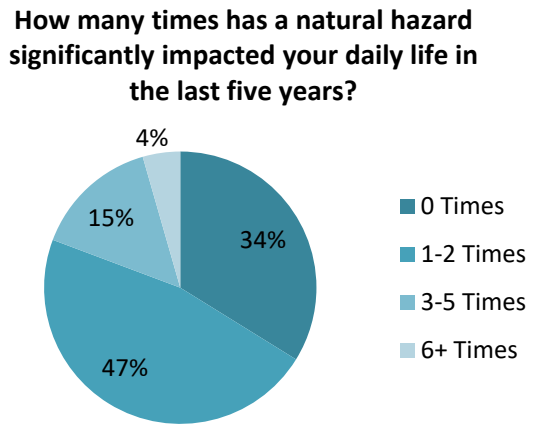


3.4.2 Survey #1 Hazard Risk Perception Survey

OPEN JULY 22, 2020 –SEPTEMBER 21, 2020 - The survey received 345 responses.

The goal of survey #1 was to understand the public perception of hazards in Weld County. When asked how many times a natural hazard significantly impacted daily life in the last five years within the Northern Colorado region, almost half of those who answered the question stated that 1-2 events have significantly impacted their life in the last five years. Sixty seven percent indicated that one or more events had impacted daily life in the last five years.

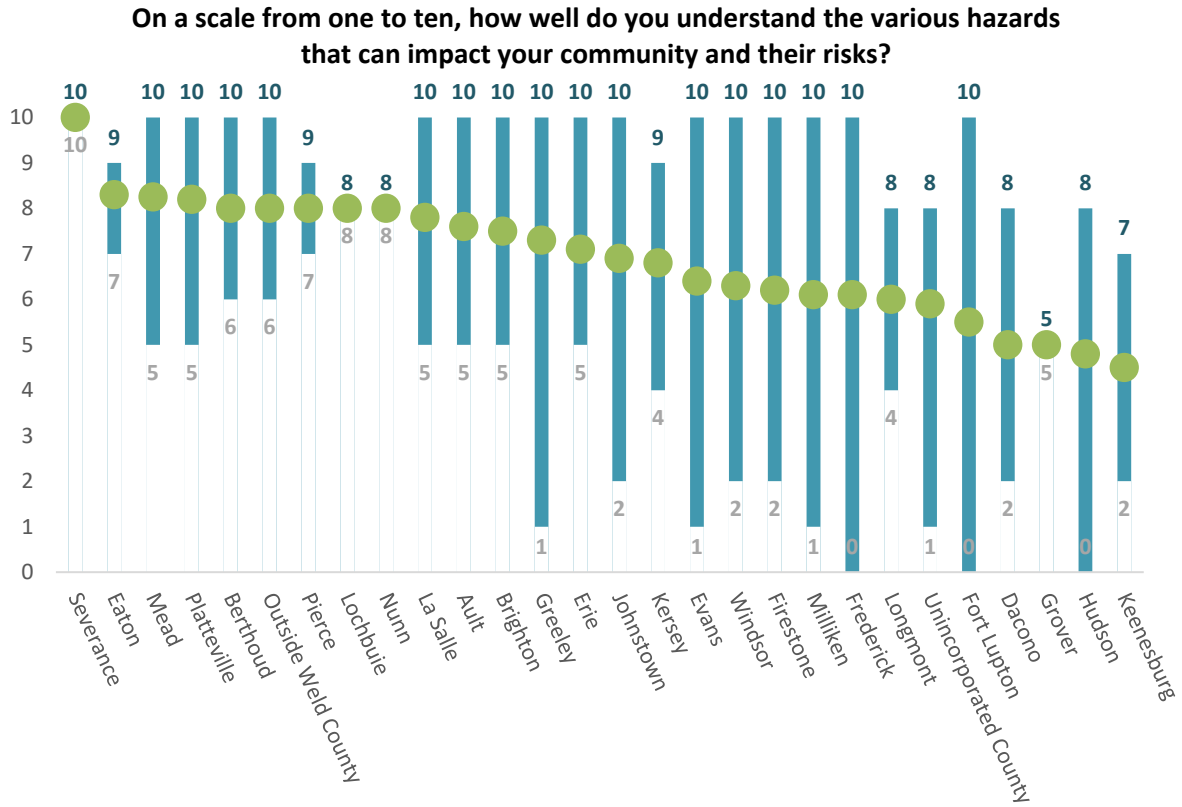
Figure 11. Survey 1 Responses



Responses to the question "How well do you understand the various hazards that can impact your community and their risks? Zero being the lowest and ten being the highest." The majority of respondents chose the middle score. However, different municipalities had different results. Below is a graph that shows the lowest score, high score,

and the average score for each municipality; low shown in grey and high shown in dark blue. The average is represented as a green circle. Some communities had a high number of responses while others had very few responses, changing the survey sample per community, however, this graph gives a general indication of the range of risk understanding that survey respondents chose.

Figure 12. Survey 1 Responses



Survey respondents were asked about the perception of risk for their community for each hazard reviewed in the plan. Below is a graphic of the responses average for each hazard for each community. Those hazards which the public thought posed the greatest risk include severe storms (lightning and hail), drought, extreme temperatures, public health hazards, wind and tornados, and cyber-attacks. On average for the County, residents were less worried about land subsidence, earthquake, and flood.

Table 11. Survey 1 Responses

Hazard	Severe Storm	Drought	Public Health Hazards	Wind and Tornados	Cyber Attacks	Extreme Temperatures	Hazardous Materials	Prairie Fire	Agricultural Hazards	Flood	Land Subsidence	Earthquake
Average	7.5	5.9	5.8	5.7	5.6	5.4	4.4	4.2	4.2	3.8	2.8	1.8
Ault	7.2	7.8	4.5	8.0	5.0	3.4	3.5	4.3	4.3	1.5	2.0	1.5
Berthoud	6.0	5.5	8.0	5.5		4.5	5.5	8.0	3.0	7.0	4.5	1.5
Brighton	8.5	6.0	6.7	4.8	5.3	5.0	3.7	3.3	3.3	2.0	2.0	1.0
Dacono	8.0	6.5	3.5	4.3	4.3	6.0	4.5	5.3	5.0	4.0	4.8	2.8
Eaton	6.6	5.0	5.0	5.4	5.3	2.8	1.8	4.5	2.0	3.8	0.8	1.5
Erie	7.8	5.3	7.3	5.0	4.0	4.3	7.5	3.2	2.8	3.4	4.6	2.4
Evans	7.1	6.0	7.7	6.8	5.6	6.2	5.0	3.9	4.8	5.7	2.7	0.7
Firestone	7.4	5.5	5.7	5.4	5.4	5.2	4.8	4.3	4.5	3.7	3.5	1.7
Fort Lupton	7.3	6.0	4.1	5.2	5.5	5.1	3.3	4.3	4.3	2.7	2.2	1.4
Frederick	7.4	5.6	6.4	5.5	5.9	5.6	4.3	3.9	4.3	3.5	3.4	2.2
Greeley	8.0	6.0	6.0	5.7	6.1	5.7	4.5	3.6	4.1	4.0	2.5	2.0
Grover	7.0	10.0	10.0	8.0		10.0	8.0	10.0		2.0	2.0	1.0
Hudson	7.0	6.0	6.0	5.6	4.0	5.6	3.4	4.4	3.7	2.0	1.8	1.6
Johnstown	7.7	5.5	5.3	5.3	6.5	5.4	4.3	4.2	4.4	4.0	3.3	1.9
Keenesburg	7.5	10.0	5.5	5.5	6.0	5.5	2.5	2.5	3.5		2.0	1.0
Kersey	7.8	7.6	3.8	6.8	4.5	5.6	4.4	7.5	5.0	5.4	1.4	0.8
La Salle	9.0	9.0	5.5	7.6	6.2	4.8	6.0	5.5	8.6	5.0	1.0	5.5
Lochbuie	10.0	2.0	3.0	7.5	6.0	5.0	1.0	6.5	1.0	3.5	3.5	1.0
Longmont	8.5	1.0	4.5	2.0	1.5	4.0	4.5	3.0	3.0	4.0	2.0	0.0
Mead	7.0	9.3	7.3	4.0	5.7	9.3	3.3	4.5	6.3	2.8	1.0	0.0
Milliken	7.1	8.3	6.0	6.0	3.7	6.9	5.2	6.0	3.5	4.4	3.3	1.3
Nunn	9.0	3.0	1.0	5.0	4.0	1.0	5.0	1.0	1.0	0.0	1.0	0.0
Pierce	6.0	7.0	7.0	7.5	6.0	6.0	3.5	6.5	5.5	6.0	5.0	3.5
Platteville	6.4	7.6	5.7	7.5	5.0	3.3	4.8	3.4	6.0	4.3	1.0	1.0
Severance	7.5	5.5	4.5	7.0	9.0	5.0	8.0	7.0	3.0	6.5	1.0	0.5
Windsor	6.8	3.4	5.4	5.6	5.0	3.3	3.4	3.1	3.1	3.6	2.5	1.4
Outside Weld County	7.8	4.7	6.3	7.3	7.6	4.8	3.7	4.8	2.5	3.5	2.3	2.0
Unincorporated County	7.1	7.2	7.3	6.2	5.3	6.6	5.0	4.9	4.4	3.6	2.0	1.2

The graph below shows the aggregate County concern for each scenario. Survey respondents were primarily "somewhat concerned" about all scenarios. Respondents were likely to be extremely concerned with lack of clean water and access to medications and doctors. Survey respondents were primarily not concerned with lack of transportation and not receiving emergency alerts.

Table 12. Survey 1 Responses

	Not concerned	Somewhat concerned	Extremely concerned
Lack of food	19%	63%	16%
Lack of clean water	9%	44%	45%
Access to medications/doctors	19%	55%	23%
Lack of transportation	39%	51%	8%
Not receiving emergency alerts	31%	46%	21%

When asked about emergency preparedness, about half of survey respondents indicated that they do have an emergency preparedness kit. More than half of the survey respondent indicated that they have taken mitigation actions at their home, but very few have taken steps in their neighborhood or business.

3.4.3 Survey #2 Visions for a Resilient Weld County Survey

OPEN OCTOBER 1, 2020 –NOVEMBER 30, 2020 - The Survey received 86 responses.

The second survey was designed to gauge public perception of the disaster recovery conditions and resources within the County. The same survey was distributed in 2016, providing the opportunity to see what statements gained and lost agreement in that four-year period. Comparing results between surveys gave an overview of general community opinion changes, however, results did come largely from different communities and 2020 has not been an average year due to the COVID-19 pandemic, months of wildfire, local and national elections, and other related influences. Therefore, some comparative statements are likely influenced by those impacts.

Survey respondents were asked to mark their level of agreement with the following statements. The information below reflects the results of the 2020 survey with a greater percentage of strongly agree and agree at the top.

Table 13. Survey 2 Responses

Description	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	I Don't Know
People in my community help each other.	5%	10%	12%	48%	26%	0%
My community treats people fairly no matter what their background is.	7%	10%	22%	33%	24%	3%
My community supports programs for children and families.	5%	12%	14%	43%	24%	2%
People in my community feel like they belong to the community	2%	6%	17%	47%	23%	5%
People in my community are committed to the well-being of the community	5%	9%	17%	51%	17%	0%

Description	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	I Don't Know
My community keeps people informed about issues that are relevant to them.	10%	14%	20%	36%	16%	3%
People in my community have hope about the future.	6%	5%	21%	44%	15%	9%
My community works with organizations and agencies outside the community.	2%	10%	28%	28%	13%	19%
My community has effective leaders.	13%	15%	26%	31%	12%	3%
My community tries to prevent disasters.	8%	13%	19%	33%	12%	16%
My community has the resources it needs to take care of community problems.	9%	17%	22%	28%	10%	13%
My community has services and programs to help people after a disaster.	9%	20%	20%	19%	9%	23%
If a disaster occurs, my community provides information about what to do.	10%	17%	26%	21%	9%	15%
People in my community communicate with leaders who can help improve the community.	5%	9%	29%	36%	9%	10%
People in my community are able to get the services they need.	6%	21%	23%	27%	8%	14%
My community can provide emergency services during a disaster.	8%	15%	20%	29%	8%	19%
People in my community work together to improve the community.	6%	13%	17%	56%	8%	0%
My community has priorities and sets goals for the future.	3%	13%	30%	38%	7%	8%
People in my community know where to go to get things done.	3%	21%	26%	37%	6%	7%
My community actively prepares for future disasters.	8%	17%	28%	24%	5%	17%
My community looks at its successes and failures so it can learn from the past.	10%	19%	24%	26%	5%	16%
People in my community trust public officials.	10%	19%	36%	26%	3%	6%

The statements that had the greatest percentage of respondents <u>agree or strongly agree</u> include:

1. People in my community help each other. (48% Agree, 26% Strongly Agree)

2. My community treats people fairly no matter what their background is. (33% Agree, 24% Strongly Agree)
3. My community supports programs for children and families. (43% Agree, 24% Strongly Agree)
4. People in my community feel like they belong to the community. (47% Agree, 23% Strongly Agree)
5. People in my community are committed to the well-being of the community. (51% Agree, 17% Strongly Agree)

The top four agree and strongly agree statements in 2020 are the same as the results in 2016. The only difference from 2016 is the fifth statement, which was "People in my community have hope about the future." This statement moved down to the 6th most supported statement in 2020. The COVID-19 pandemic and other current events this year may have had an impact on the community's agreement with this statement.

The statements that had the greatest percentage of respondents <u>disagree or strongly disagree</u> include:

1. My community looks at its successes and failures so it can learn from the past. (Strongly Disagree 10%, Disagree 19%)
2. People in my community trust public officials. (Strongly Disagree 10%, Disagree 19%)
3. My community has services and programs to help people after a disaster. (Strongly Disagree 9%, Disagree 20%)
4. My community has effective leaders. (Strongly Disagree 13%, Disagree 15%)
5. If a disaster occurs, my community provides information about what to do. (Strongly Disagree 10%, Disagree 17%)

There are no statements where the percentages of respondents who disagree or strongly disagree are greater than the neutral, agree, or strongly agree percentages. For statements where the percentages of respondents who agree or strongly agree are not the majority, the number of neutral or don't know responses increased. The list illustrates the smaller percentages of respondents who disagree than the list of agree and strongly agree above. This shows that in this survey there are no statements where the public overwhelmingly feels that there are shortfalls or holes in community support.

Positive Trends since 2016

Because the survey measured the percentage of individuals who agree or disagree with a statement, an overall increase in community support can be measured by tracking a decrease in the population who disagree with a statement or an increase in the percentage of the population who agree with a statement. Below is a list of the biggest positive shift since 2016; showing statements with the greatest decrease in respondents who disagree or strongly disagree, and the statements with the greatest increase in respondents who agree or strongly agree.

These results indicate a slight decrease in the number of people who feel that the community does not communicate with leaders—indicating there is greater communication with leadership. There is also a positive shift toward the statement "People of different backgrounds are treated fairly" with both a decrease in the number of disagree and an increase in the number of people who agree with the statement. 2020 responses also showed a positive shift in people feeling that they know where to go to get things done, and that people work together to improve the community.

Biggest Increase of "Agree" or "Strongly Agree" since 2016

1. People in my community work together to improve the community. (from 57% to 64%) **+7%**
2. My community treats people fairly no matter what their background is. (from 50% to 57%) **+7%**

Biggest Decrease of "Disagree" or "Strongly Disagree" since 2016

1. People in my community communicate with leaders who can help improve the community. (from 23% to 14%) **-9%**
2. My community treats people fairly no matter what their background is. (from 23% to 17%) **-6%**
3. People in my community know where to go to get things done. (from 30% to 24%) **-6%**

Concerning Trends since 2016

Other statements decreased in support. These statements had a greater percentage of respondents that disagree or strongly disagree, or a lower percentage of respondents that agree or strongly disagree. The statements with the greatest drop in support are listed below.

These statements generally indicate a decrease in agreement about available information and programs and services, including those for children and families, during and after a disaster. There was also an increase in the percentage of respondents who disagree with statements about learning from the past and trying to prevent disasters. The greatest overall changes are shown below in the decrease of those who agree or strongly disagree with 20%+ drops in agreement.

Biggest Increase of "Disagree" or "Strongly Disagree" since 2016

1. My community has services and programs to help people after a disaster. (from 22% to 29%) **+7%**
2. My community looks at its successes and failures so it can learn from the past. (from 22% to 29%) **+7%**
3. If a disaster occurs, my community provides information about what to do. (from 22% to 28%) **+6%**
4. My community tries to prevent disasters. (from 15% to 21%) **+6%**
5. My community supports programs for children and families. (from 11% to 16%) **+6%**

Biggest Decrease of "Agree" or "Strongly Agree" since 2016

1. My community can provide emergency services during a disaster. (from 61% to 37%) **-24%**
2. My community has services and programs to help people after a disaster. (from 49% to 28%) **-21%**
3. If a disaster occurs, my community provides information about what to do. (from 49% to 30%) **-19%**

3.4.4 Survey #3 Mitigation Strategy

OPEN DECEMBER 1, 2020 –JANUARY 25, 2021- The Survey received 144 complete responses

Between December 1 and January 25, the Mitigation Strategies Survey was distributed widely through several outreach methods including social media, newsletters, and direct e-mail distribution. The content below lists the questions asked and a brief analysis of community response.

Q1. What community do you live in?

Responses came from many municipalities in Weld with the exception of Brighton, Hudson, Garden City, Gilcrest, Grover, Longmont, Lochbuie, Mead, Nunn, Northglenn, and Raymer. The breakdown in responses by place is listed in the table below.

Table 14. Survey 3 Responses

Location	Responses
Windsor	48
Frederick	22
Erie	18
Firestone	12
Greeley	9
Dacono	6
Fort Lupton	6
Johnstown	5
Unincorporated County	3
Pierce	3

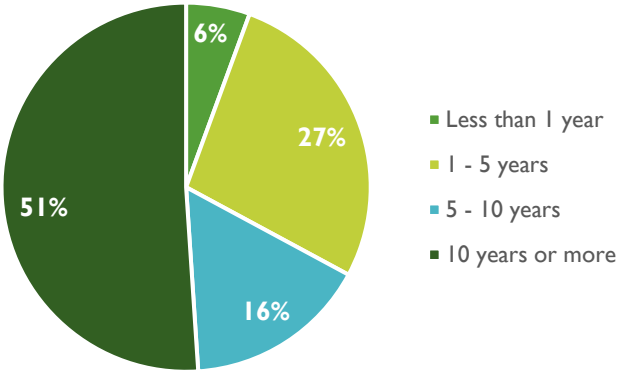
Location	Responses
Ault	2
Platteville	2
Eaton	1
Evans	1
Severance	1
Keensburg	1
Kersey	1
La Salle	1
Milliken	1
Outside Weld County	1

Q2. If you do not live in an incorporated area, what zip code do you live in? Zipcodes include: 80534, 80603, and 80631

Q3. How long have you lived in Weld County?

Just over half of the respondents have lived in Weld County for ten years or more. The responses are shown in the pie chart to the right. This feedback illustrates that many of the survey respondents have lived in Weld County through several major hazard events and were living in Weld at the time of the previous hazard mitigation plan.

Figure 13. Survey 3 Responses



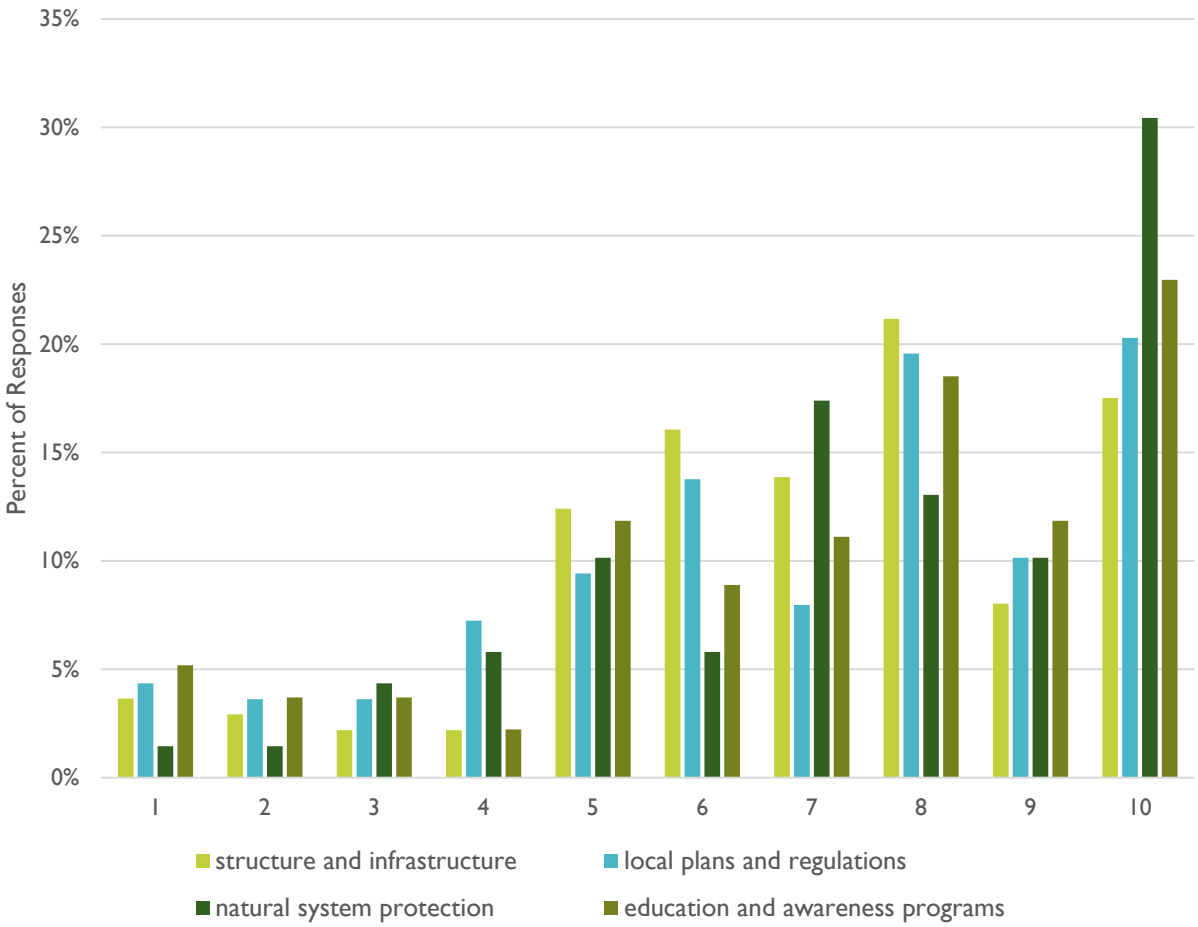
Q4-7. Questions four through seven ask "What is your level of support" for four different mitigation strategy types, from one (lowest) to ten (highest). The strategy types include structure and infrastructure, local plans and regulations, natural system protection, and education and awareness programs.

Results indicate that there is strong support for each of the mitigation strategy types. Natural system had the highest number of respondents select level ten support out of any category.

Average Level of Support (out of 10):

- Structure and Infrastructure: **7.0**
- Local Plans and Regulations: **6.9**
- Natural System Protection: **7.5**
- Education and Awareness Programs: **7.1**

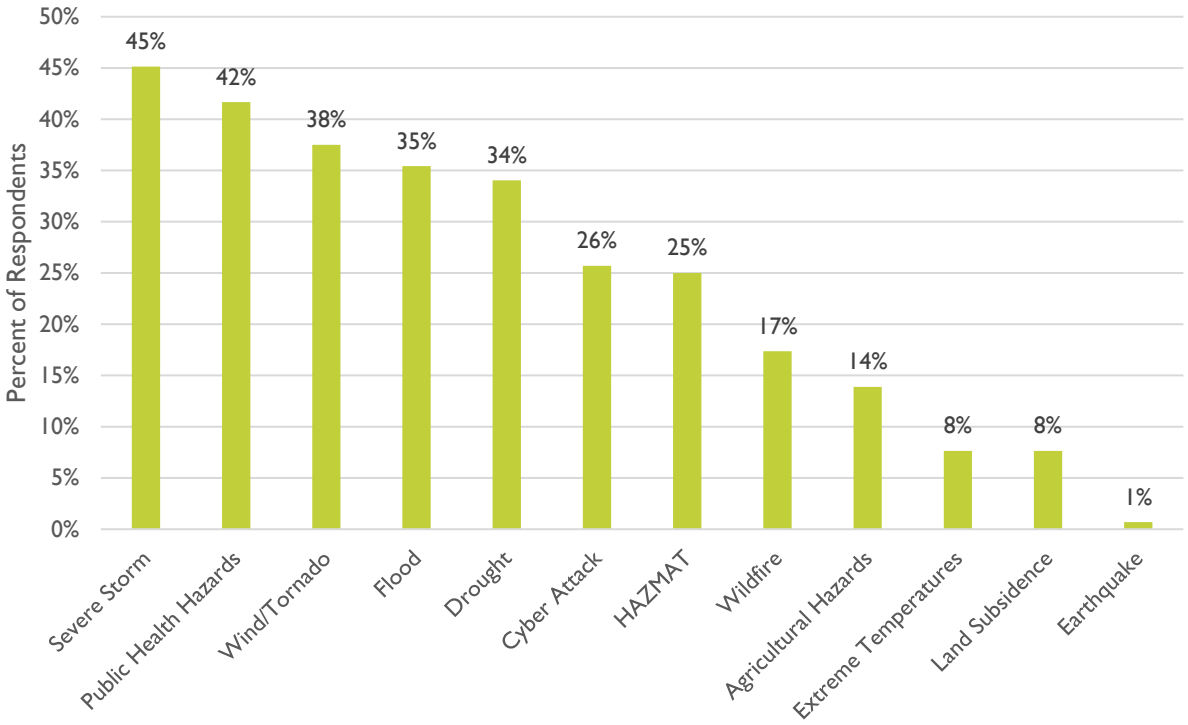
Figure 14. Survey 3 Responses



Q8. Select the top three hazards where you think mitigation efforts should be prioritized.

The graph below indicates the number of respondents who chose each hazard. The hazards that were selected by the fewest number of respondents are earthquakes, land subsidence, and extreme temperatures. The three hazards selected by the greatest number of respondents include sever storm, public health hazards, and wind/tornado. Flood and drought were both identified as a top three hazard by 34-35% of respondents. Mitigation efforts for cyber attacks and HAZMAT were identified by about a quarter of respondents to be prioritized. Agricultural hazards and wildfire were prioritized by less than 20% of respondents.

Figure 15. Survey 3 Responses



Q9. Share your ideas for specific mitigation actions that you would like to see implemented by your government, should funding be available.

Over a third of the respondents provided feedback on specific mitigation actions that they would like to see implemented. Actions included:

Infrastructure

- Tornado sirens were identified in several communities as a needed mitigation improvement.
- Under grounding utility lines.
- Improved street drainage systems.
- Enlarging highway and road culverts and bridges as necessary to accommodate large storm events.
- Review transportation systems to ensure emergency access/egress from natural hazards.

Local regulations and programs

- Rebates for wind/storm resistant building materials.
- Public outreach and cost-effective methods for disposal of trash and debris after an event.
- Increasing the oil and gas buffer around schools, parks, and homes to prevent accidents.
- Temporary shelters for people who are displaced in a crisis with pre-designated reunification locations so people know where and how to reconnect with family and loved ones in crisis situations.
- Implement no-burn days in windy dry weather.
- Limit development in areas with a high hazard potential.
- Cyber security enhancements and upgrades to protect utilities.
- First Responder communications network improvement and coordination.
- Funding assistance for acquiring raw water during drought could provide relief for existing municipal water needs and assist in economic growth for small communities.
- Land surveying for possible land collapse under new build areas yearly.
- Mobile relief unit that is specifically set up to respond to communities that have been hit by hazards etc. this unit should have the ability to supply things like water, food, cloths toothbrushes etc.

Natural systems

- Farmland and small community preservation.
- Fishing and hunting preservation.
- Water conservation.
- Erosion and dust control.
- Flood control.
- Reservoirs for water storage.

Education and awareness

- Increase public education and awareness related to oil and gas, fracking, and groundwater.
- Provide education on the use of methane detectors in crawl spaces.
- Involve oil and gas companies in community safety conversations.
- More community safety events and informational mailers.
- Online water reduction classes with incentives for completion.

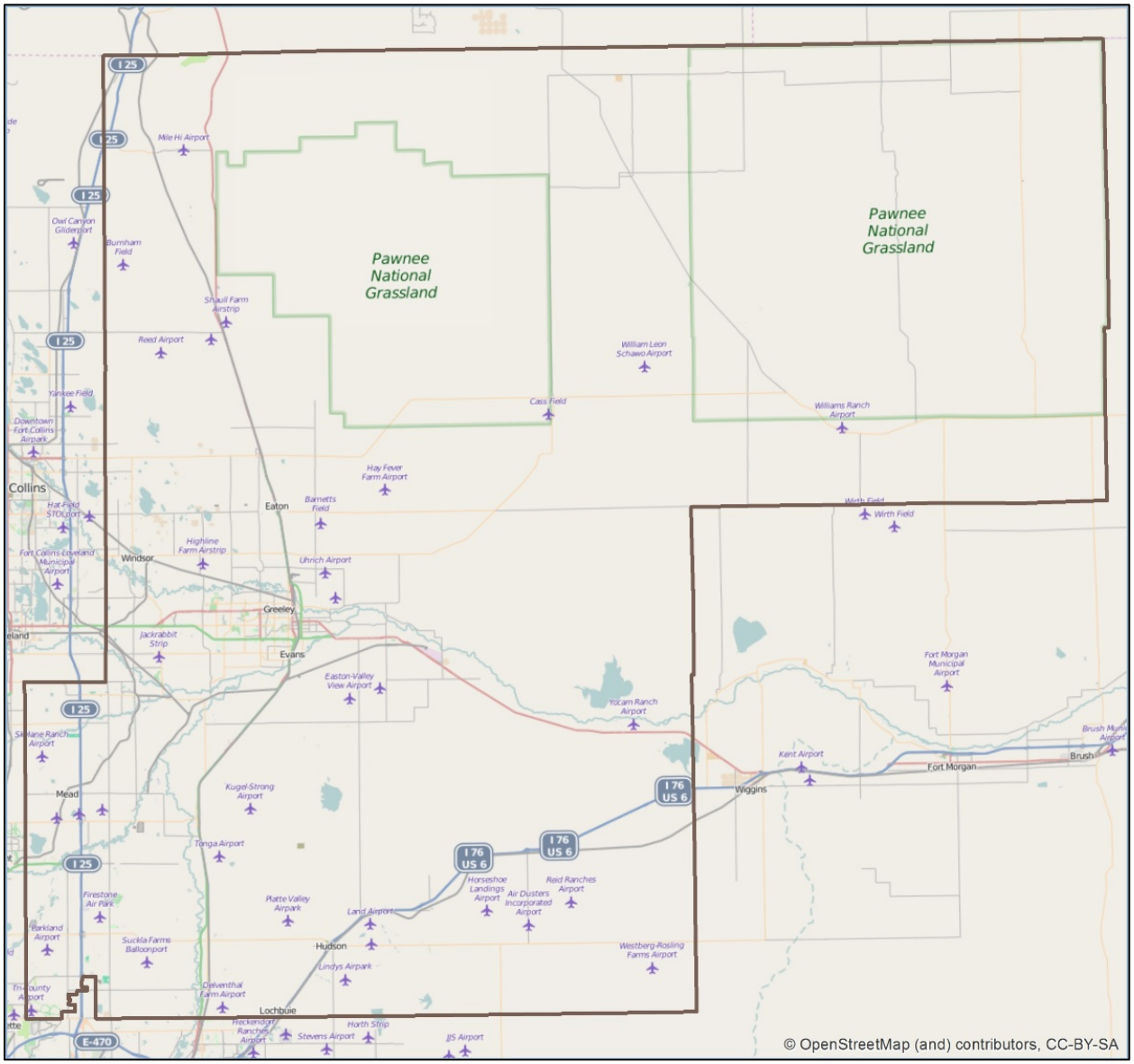
3.4.5 Public Plan Review & Comment

A public review and comment period was held, following the final HMPC review of the HMPC Draft Plan. The comment period was kept open for three weeks and the public was able to access and comment on the plan online. A total of 5 comments were received and vetted through the HMPC.

4 County Profile

Weld County is located in the Northern Front Range of central Colorado. The County spans an area from northern Metro Denver to the Wyoming state line. Slightly less than four thousand square miles in size, the County seat is located in the City of Greeley, and thirty-one incorporated municipalities lie within the County's borders. Weld County is the third largest county in the State in terms of land area and is larger than the size of Rhode Island, Delaware, and the District of Columbia combined.

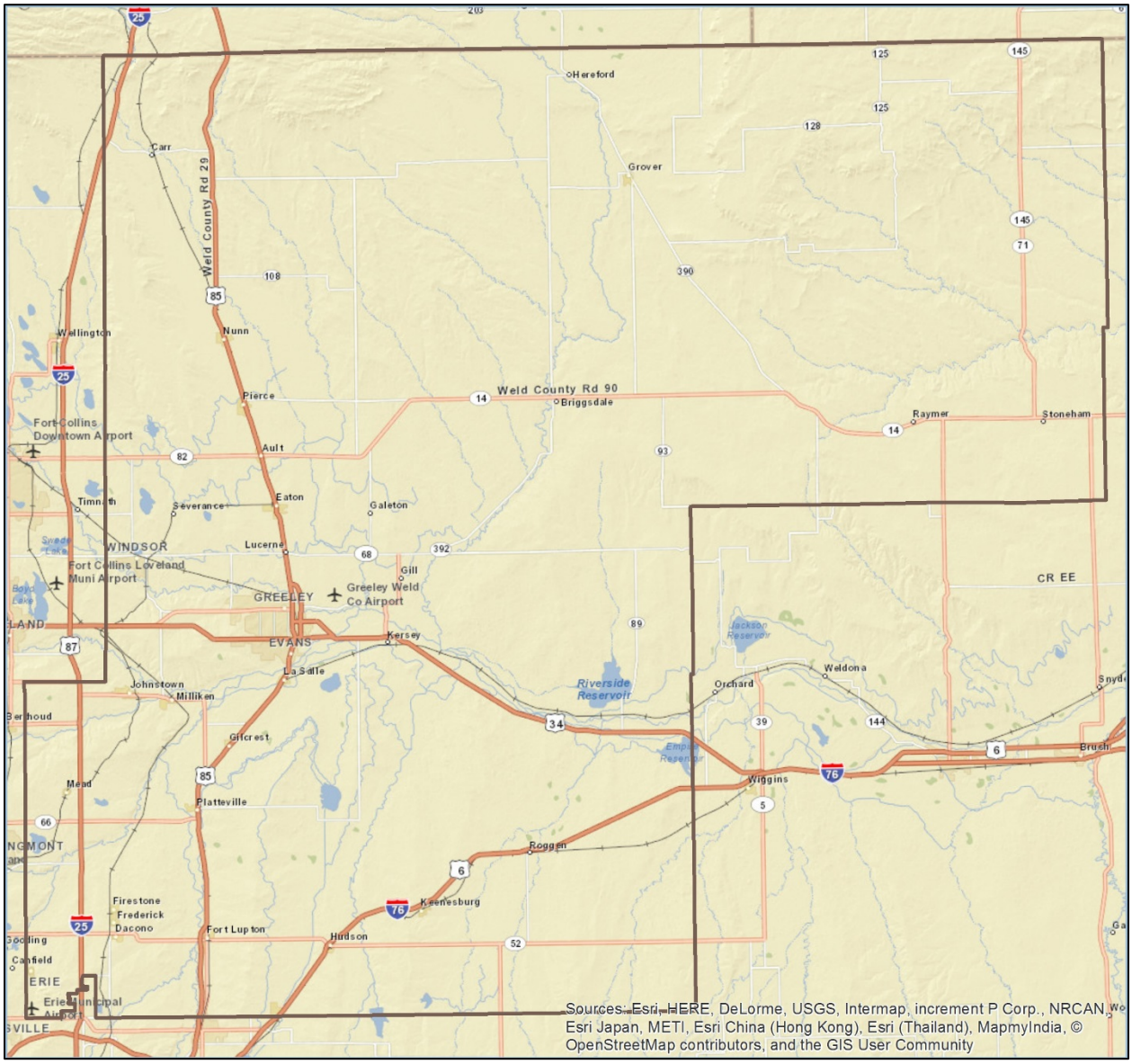
Figure 16. Map of Weld County



Weld County is relatively flat in terms of terrain and topography, as the northeastern portion contains the Pawnee National Grassland. The Pawnee Buttes, two prominent rock formations that stand out against the plains, can be seen while traveling through the Grassland. Two interstate highways run through the County: I-25 (US 87) runs through the southwestern and northwestern corner and I-76 from the south central edge northeastward to the Morgan County border. Other major transportation

routes include US 85 and US 34, which intersect near Greeley, as well as State Highway 14, which runs through Ault. Many of Weld County's incorporated cities and towns are located along these highway corridors although the County consists of numerous gravel roads that serve to connect communities to amenities.

Figure 17. Weld County Transportation Routes



The Platte and Cache la Poudre Rivers are the significant waterways in the County and the most important sources of water in the large, semi-arid region. The agricultural portions of western Weld County are fed by a system of irrigation canals. A broader mixture of land uses and greater concentrations of the population are located in the western third of the County, while the drier eastern landscape remains largely open, less populated, and more uniform in terms of land use.

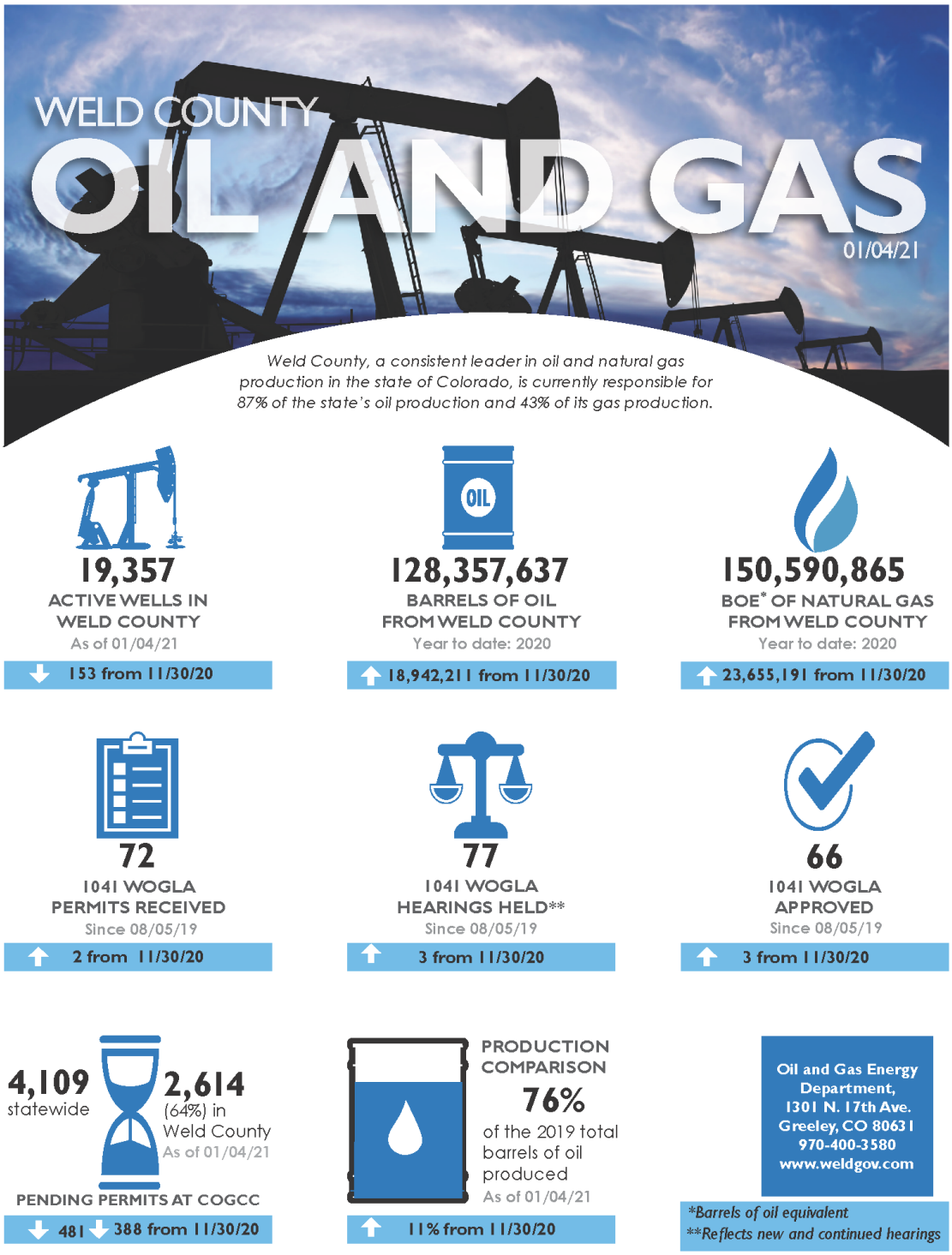
The rural region of the County holds historic resources, including archaeological and cultural sites. As of November 2019, Weld County has a total of 41 properties and districts listed on the National Register

of Historic Places and Historic Districts. Landmark buildings, historic structures and sites, as well as commercial and residential districts can be found in communities across Weld County.

Weld County is one of the top ten economically producing agricultural counties in the United States. Due to the dry climate, mild winters, and warm summers, the County leads the state in the production of grains, beef cattle, and sugar beets. Over eighty percent of Weld County's 2.5 million acres is devoted to agriculture. Weld County farmers are also the state's leading producers of potatoes, poultry, eggs, milk, dry beans, and other dairy products. There are over 4,000 farms in Weld County and the County's agricultural products create over $1 billion of market value each year.

The energy industry is another important driver of Weld County's economy. Due to its location above the Wattenberg Field, oil and gas extraction has been occurring for decades in Weld County. Currently, Weld County has more oil and gas wells than any other county in the state. The County's 2019 oil and gas revenue was $8.9 billion.

Figure 18. Oil and Gas Production Report (12/2020)



The sheer size of the County's land area presents challenges related to the availability of resources. The distances which must be traveled sometimes delay emergency responses including law enforcement, ambulance, and fire. During a weather event, snow removal priorities mean that roads from subdivisions to arterials may not be cleared for several days. Rural residents are exposed to different hazards (and have different vulnerabilities) than urban or suburban residents and must be more self-sufficient by necessity. When developing and implementing a local hazard mitigation program, it is important to recognize the various differences for rural and urban communities.

4.1 Demographics

Weld County is a relatively young county, with a median population age of 34 years. Between 2010 and 2019 the population of the County grew by 28.3%. The current population of over three hundred thousand residents is expected to reach almost half a million by the year 2030.

Weld County is the ninth most populated county in Colorado. However, rapid growth in the last few years has established the County as one of the 100-fastest growing counties in the nation, according to the US Census. Planners anticipate that much of the coming growth will occur in southwest Weld County, along I-25 and along the southern stretch of US 85.

Table 15. Population Forecasts for Weld County, 2010 - 2050

Area	2010	2020	2030	2040	2050
Colorado	5,050,332	5,819,337	6,562,402	7,342,121	7,929,215
Weld County	254,230	331,895	425,999	550,178	678,612

Source: State Demography Office, Colorado (2020)

The key economic sectors for employment and income in Weld County are:

- Manufacturing
- Agriculture
- Energy Production
- Health and Wellness
- Business Service

Prior to the impact of Novel Coronavirus 2019 (COVID-19), the February 2020 unemployment rate in Weld County was 2.9%, slightly higher than the State unemployment rate of 2.5%. Per the most recent data, the September 2020 unemployment rate for the County was 6.6% and was slightly higher than the State unemployment rate at 6.4% (U.S. Bureau of Labor Statistics). The impacts of COVID-19 have been far reaching in the local, state and national economies, at the time of publishing the unemployment rate continued to fluctuate rapidly.

Weld County is adjacent to Adams County, Morgan County, Logan County, Boulder County, Larimer County, the City and County of Broomfield, Laramie County, WY, and Kimball County, NE. Many Weld County residents commute across county boundaries for work. This creates important emergency management considerations both pre- and post-disaster. The top five commuting destinations by workers living in Weld County are as follows (DRCOG Weld County Community Profile):

1. Larimer County
2. Boulder County
3. Denver County

4. Adams County
5. Arapahoe County

The table below provides an economic and demographic snapshot of Weld County.

Table 16. 2019 Economic and Demographic Snapshot

	Weld County
Population (2018 ACS)	324,492
Median Age	34
Median Household Income	$70,908
Unemployment Rate	2.7%
Percent of Population > Age 25 with Bachelor's Degree or Higher	26.7%
Percent of Population with High School Diploma Only	88.1%

Sources: 2019 Economic & Demographic Profile, Weld County, CO. Stats America, EMSI, BLS., U.S. Census Bureau, 2012-2018 American Community Survey

4.2 Community Inclusion

Community inclusion in preparedness, response, recovery and the mitigation of hazards is a crucial component to the resilience of a community. This is especially important for those in the community who experience access and functional needs (AFN) during disasters. Access and functional needs are the factors which may limit a person, in an emergency situation, in their ability to communicate, maintain their health, act independently, access adequate transportation and acquire necessary services and support. These needs encompass a variety of social and economic factors, which are critical to consider when developing inclusive emergency systems and planning with those with AFN. Those factors are divided into four main categories: socioeconomic status, household composition & disability, language & minority status, and housing type & access to transportation. The components in these categories directly affect a community's ability to prepare for, respond to, and recover from hazards and disasters.

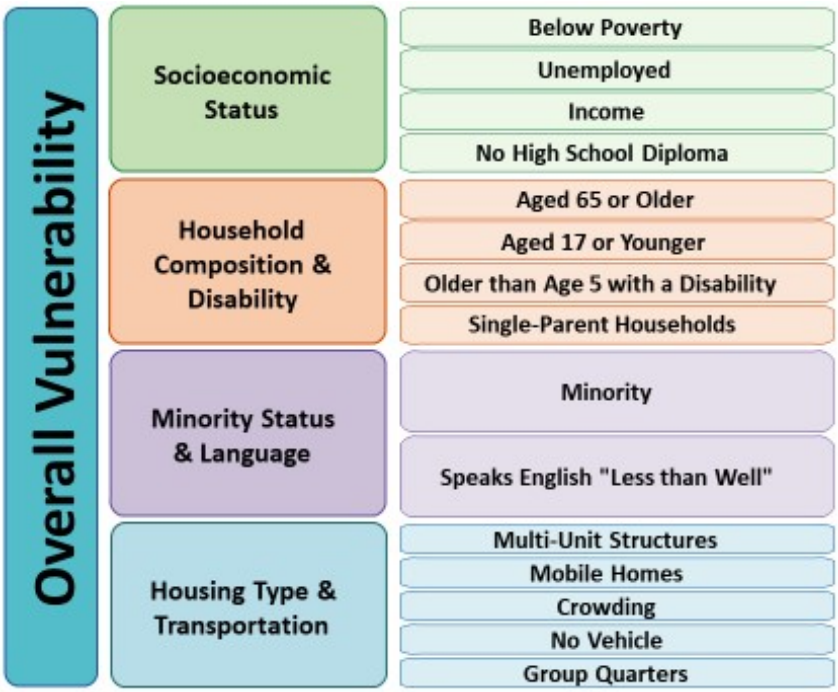
Impacts of hazards fall disproportionately on those with access and functional needs in a community, for example: low income or unemployed individuals, children, the elderly, those with disabilities, and underrepresented racial/ethnic groups. This can be seen in situations needing self-evacuation which can be unmanageable for elderly people, people with disabilities and mobility issues, those with independent living difficulty, institutionalized individuals and those without necessary finances and means of transportation. In considering preparedness actions, individuals and families may have limited resources to invest into residential mitigation actions, their home may be a rental property or they may not be physically capable of completing the needed actions. Social and economic factors like these have an effect on the safety of community members, decrease the ability of communities to recover from a disaster and inhibit the building of resilience against future disaster events. Because these factors create unequal conditions outside of disasters too, it is clear that planning with non-traditional community partners who understand everyday community experiences will be critical for planning inclusive emergency responses.

The Plan update integrates community inclusion by assessing the needs of community using the Community Inclusion in Colorado (CICO) maps created by the Colorado Department of Public Health and Environment. These maps are designed to illustrate the various aspects of demographics and AFN within the population of Colorado and Weld County. These maps are designed to aid in the

improvement of local relationship building with organizations supporting access & functional needs, decision making, hazard prioritization, and emergency management activities. By incorporating community inclusion into the risk assessments of individual hazards, local communities are able to identify more vulnerable areas and tailor their mitigation actions to accommodate all members of their community, including groups who may have difficulty accessing information and resources.

Figure 19 was taken from the CDC and illustrates the characteristics within each category for social vulnerability, as well as community inclusion. Social conditions which can contribute to disaster losses can be identified by using social vulnerability indicators. These conditions present varied challenges for people and preparedness planning. All categories should be considered regardless of the perception of the vulnerability, as the impacts of a disaster will disproportionately affect those within these categories.

Figure 19. Overall vulnerability categories and factors



Source: US Census Bureau, American Community Survey (ACS), 2014-2018 (5-year) data

During the risk assessment and mitigation strategy development phases of the 2020 planning process, participating jurisdictions reviewed the social indicator data and maps. The community inclusion information allowed communities to recognize areas with more people with access and functional needs and better prioritize their local mitigation actions. This information also helped communities design effective and appropriate local risk communication and hazard mitigation outreach activities.

The CICO maps are capable of zoning into specific municipalities and communities, where information breakdowns for the community inclusion data can be seen at a local level. The maps can be found here:

http://www.cohealthmaps.dphe.state.co.us/colorado_community_inclusion/

The maps seen in Figure 20-Figure 25, for Weld County are a visual representation of some of the critical groups for community inclusion. These maps are based on US Census Bureau data and are broken into census tracts.

Figure 20. Overall % with a disability (mobility, cognitive, hearing, vision, self-care and independent living)

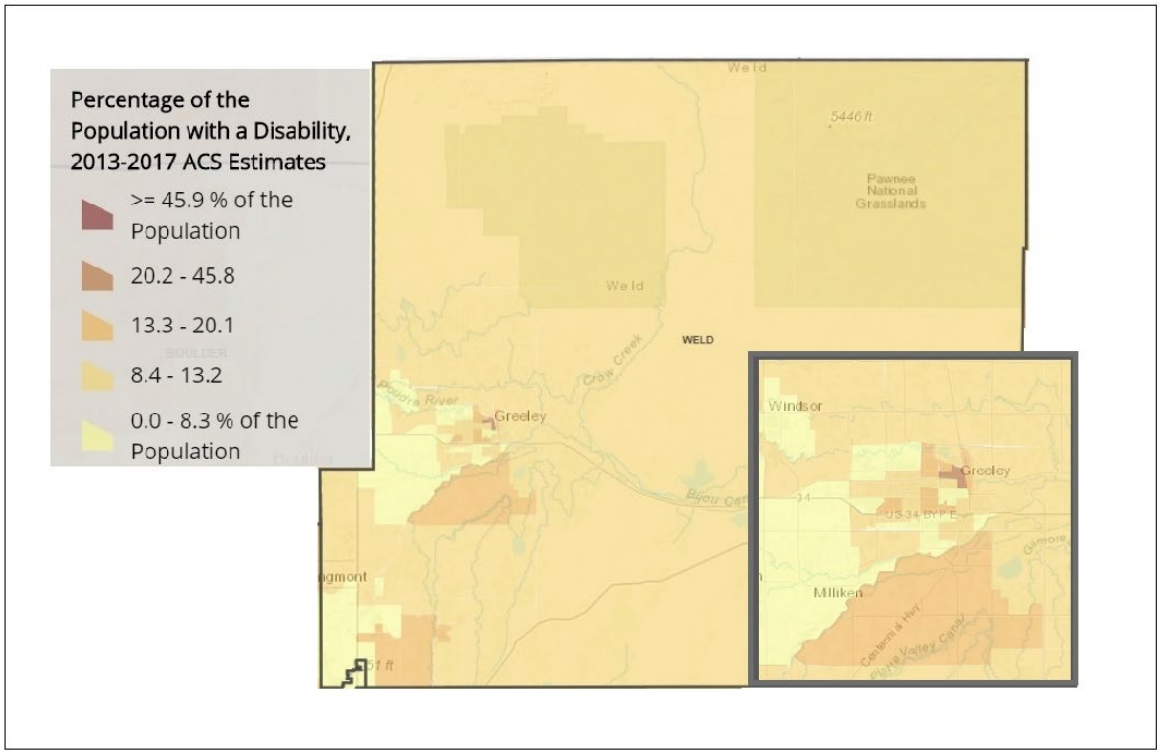


Figure 21. Overall % of people over age 65

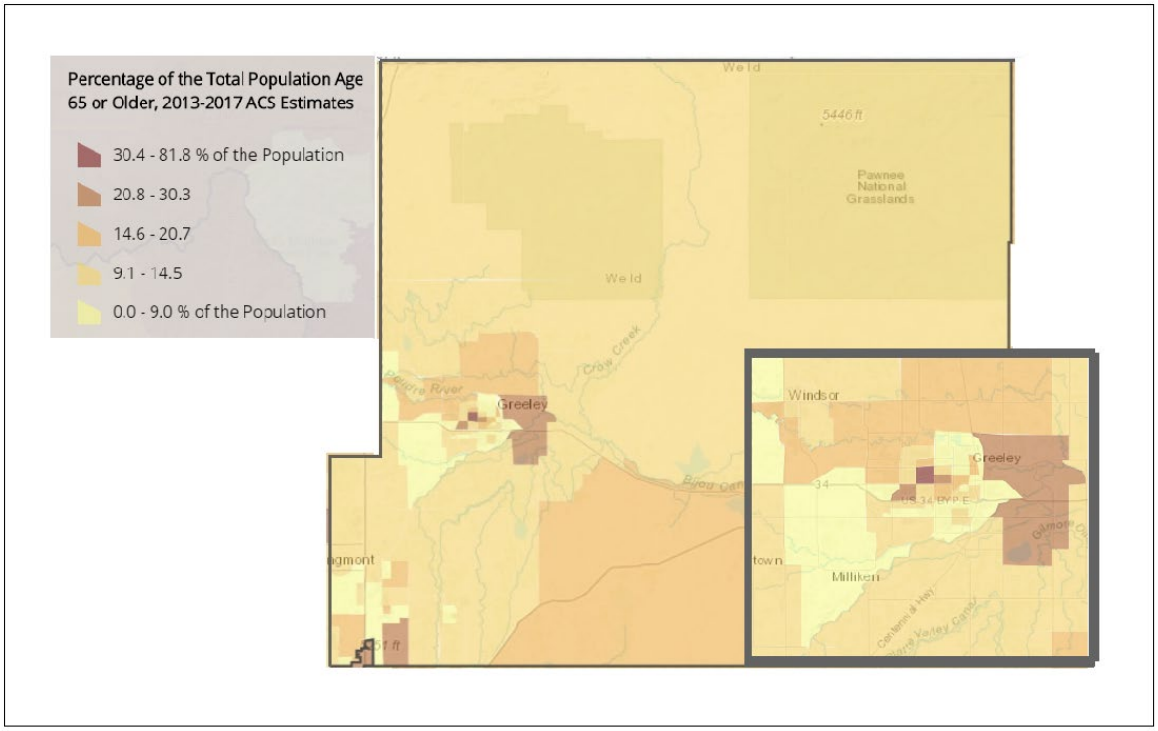


Figure 22. Overall % of people that speak English less than well

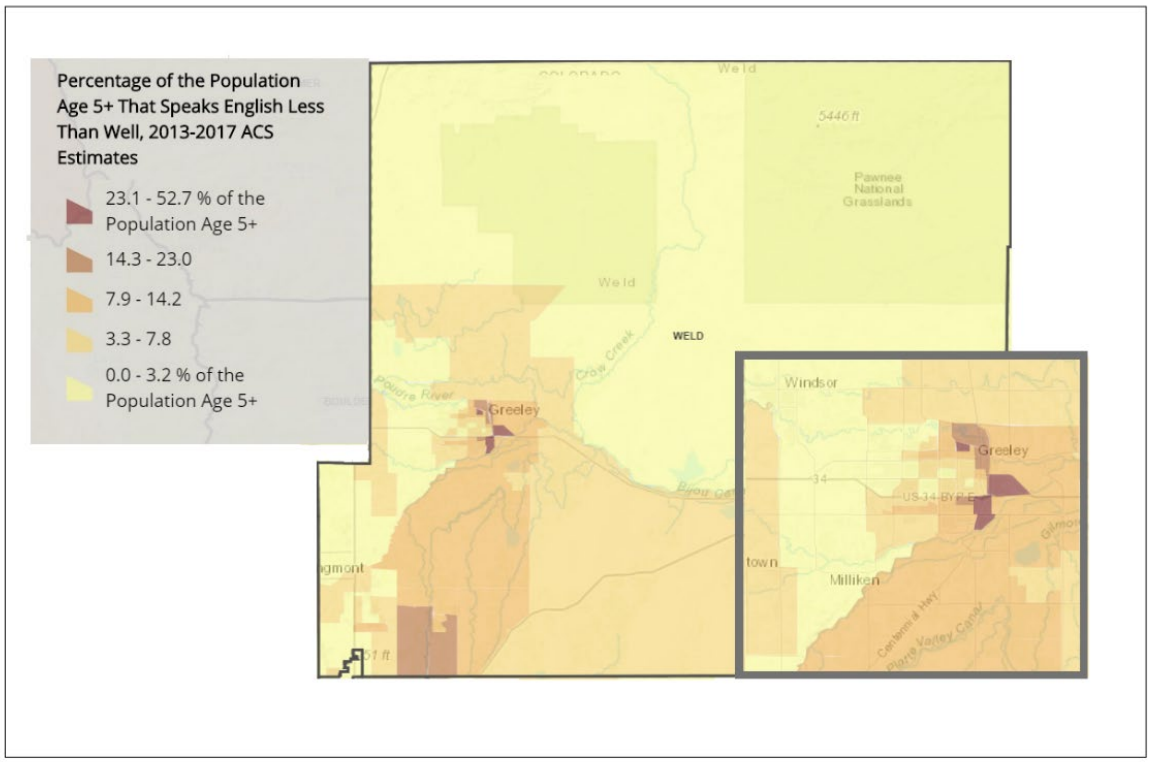


Figure 23. Overall % of people with income below poverty level

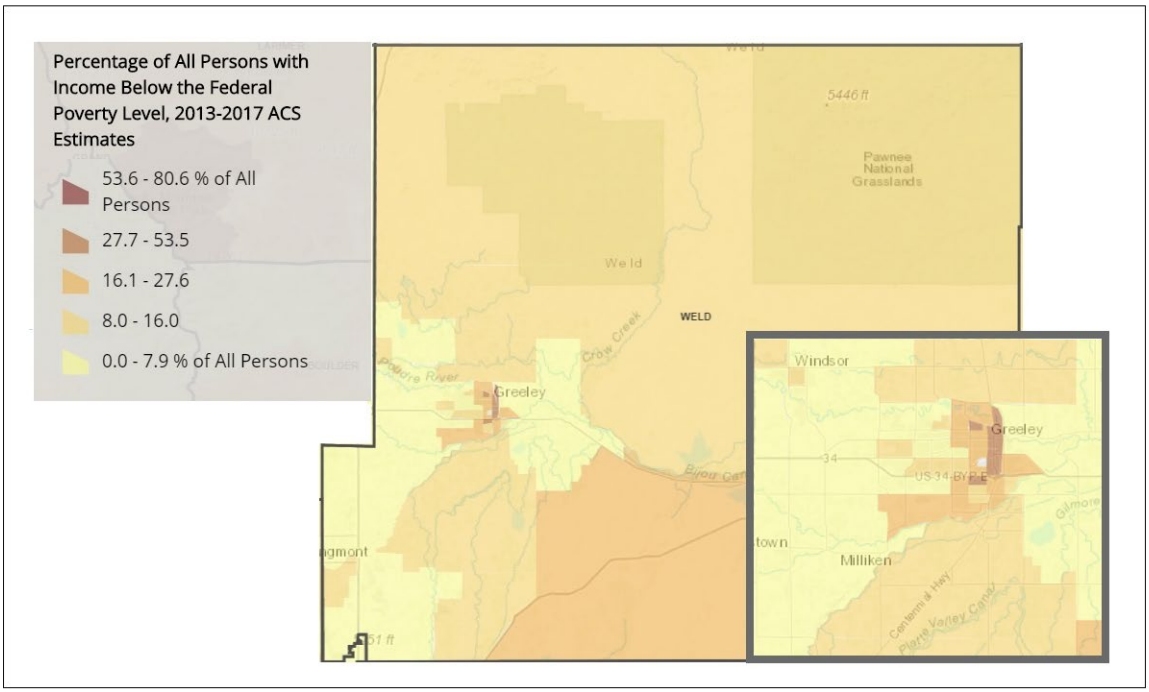


Figure 24. Overall % of housing that are mobile homes

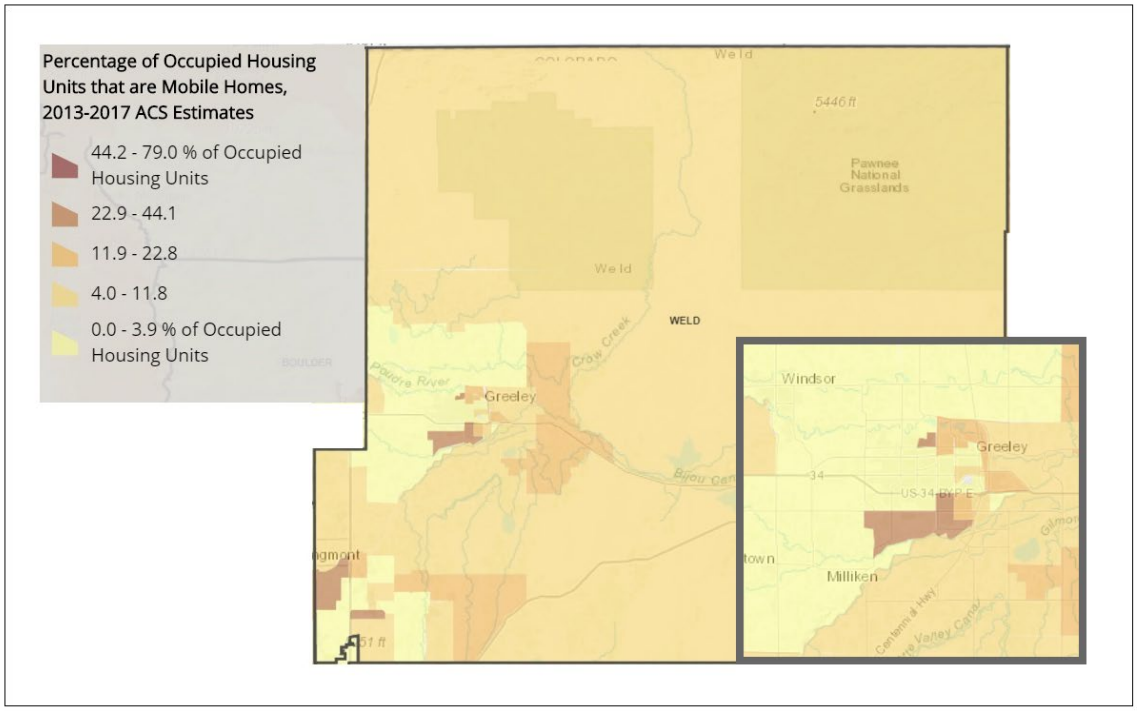
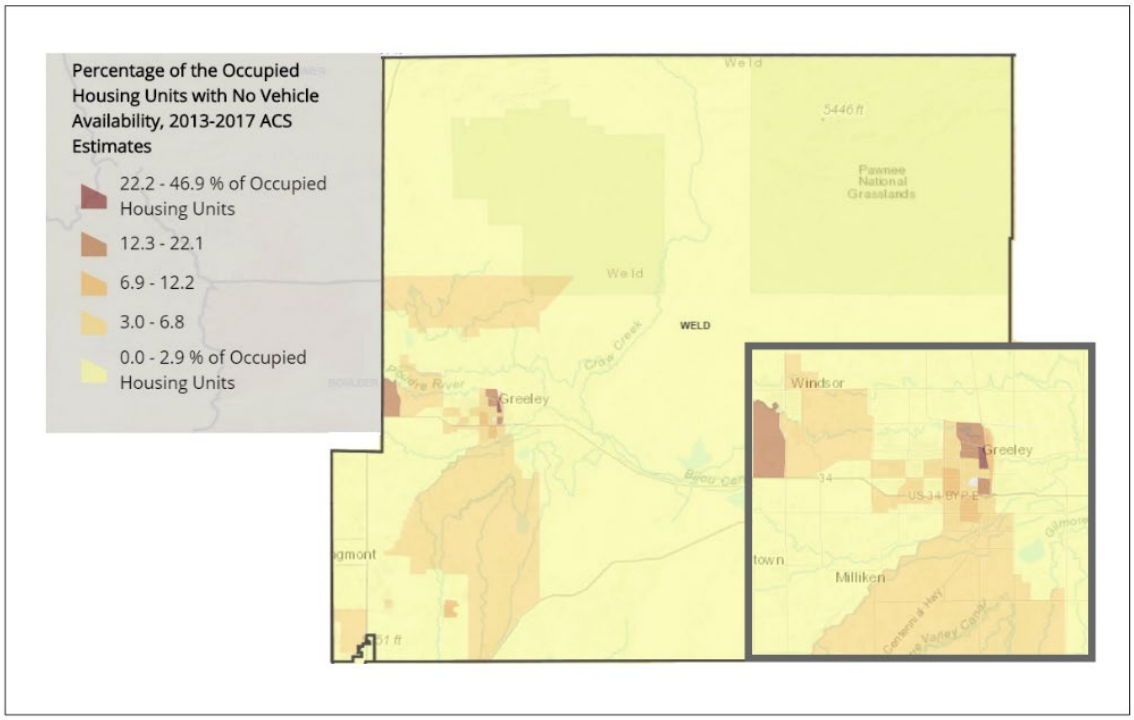


Figure 25. Overall % of households with no vehicle



4.3 Housing Stock

Colorado Department of Local Affairs keeps data on housing status throughout the state. The Housing Snapshot, in Table 17, highlights the variations and similarities for housing between the state and Weld County.

Weld County's low rental vacancy rate means that as population growth continues to surge, rents are likely to increase, putting pressure on the labor force and potentially leading to more commuters into the County.

Table 17. 2019 Housing Data for Weld County and Colorado

	Weld County	**Colorado**
Total Housing Units	116,710	2,464,109
Average Household Size	2.78	2.56
Group Quarter Proportion*	4.3%	4.8%
Vacancy Rate	1.9%	4.6%

Source: Colorado Department of Local Affairs (DOLA), U.S. Census Bureau, American Community Survey 2019

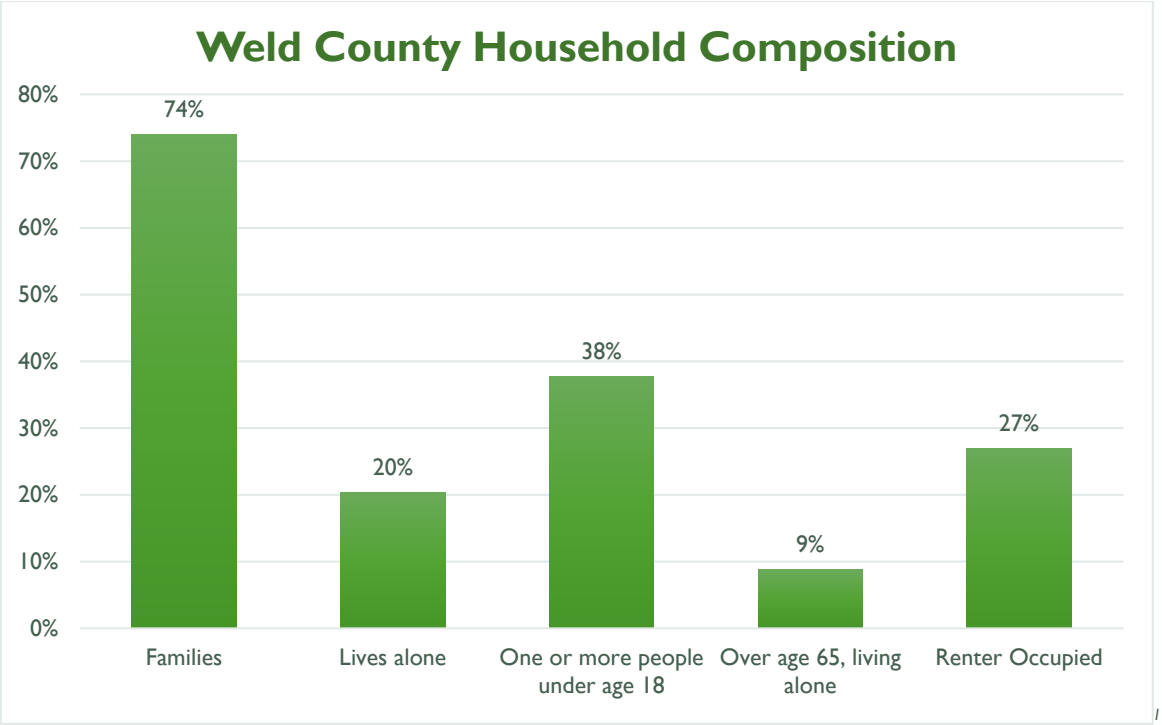
** - Group quarter populations include those living at shelters, care facilities, college campuses, correctional facilities, etc.*

One in three households, or an estimated 35,013 households, in Weld County are defined as "Housing Cost-Burdened Households."[1] These are defined as any household that spends more than 30% of its income on housing. The number of households that are housing cost-burdened has various impacts on a community. For those in the household, the economic strain can result in difficult decisions regarding basic needs such as food and health care. Community members who are struggling in this respect are less likely to invest time and resources into personal disaster preparedness and hazard mitigation activities.

Figure 26 gives insight into who makes up the Weld County households. Understanding not only who lives in your community, but what those households look like can offer awareness into the needs of the community. This is also a factor of community inclusion, knowing how people live can help when planning for public outreach and emergency communications.

[1] Source: Federal Reserve Bank of St. Louis, based on 2018 US Census Bureau, American Community Survey Data

Figure 26. Weld County Household Composition



Source: 2019 US Census Bureau, American Community Survey

4.4 Community Lifelines

The Community Lifelines Framework was developed by FEMA to increase effectiveness in disaster operations and enable the continuous functioning of critical government, infrastructure, and business activities. In day-to-day community functions, Lifelines support the recurring needs of the community. When these Lifelines are stabilized, they safeguard the health, safety, and well-being of the public during a natural disaster occurrence.

Each lifeline category has subcomponents which impact the functionality of the lifeline. The lifeline categories and subcomponents are:

- Safety and Security
  - Law Enforcement/Security
  - Fire Service
  - Search and Rescue
  - Government Service
  - Community Safety
- Food, Water and Shelter
  - Food
  - Water
  - Shelter
  - Agriculture
- Health and Medical
  - Medical Care
  - Public Health
  - Patient Movement
  - Medical Supply Chain
  - Fatality Management
- Energy
  - Power
  - Fuel
- Communications
  - Infrastructure
  - Responder Communications
  - Alerts, Warnings, and Messages
  - Finance
  - 911 and Dispatch
- Transportation
  - Highway/Roadway/Motor Vehicle
  - Mass Transit
  - Railway
  - Aviation
  - Maritime
- Hazardous Materials
  - Facilities
  - HAZMAT
    - Pollutants
    - Contaminants

Lifelines were created to provide an outcome-based, survivor-centric framework to assist responders with determining the scale, complexity, and severity of a disaster. This information is used to establish operational priorities for the response and involves identifying the root causes and interdependencies of impacts to critical services, especially those that are life-sustaining or lifesaving.

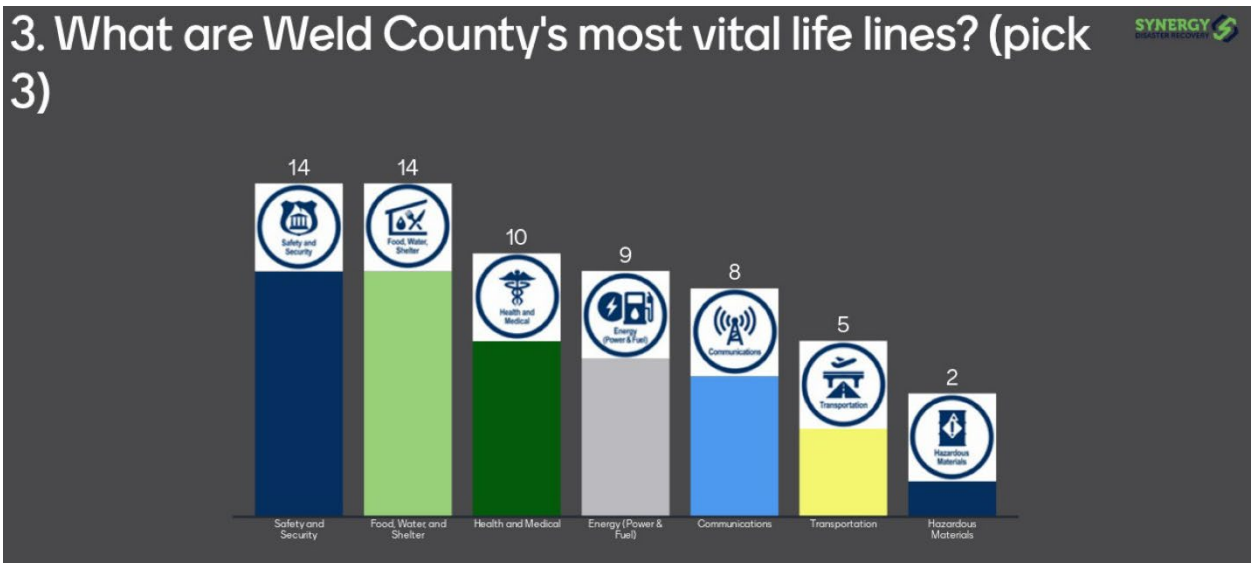
An important component to the lifeline framework is the ability to communicate disaster-related information across all levels of public, private, and non-profit sectors using commonly understood, plain language. This is vital to preparedness education, community engagement, and public outreach.

Weld County uses the Lifelines Framework as a base for emergency management planning, preparedness education, and mitigation planning. The County has worked closely with municipalities to determine the lifeline capabilities that must be considered when planning and the resilience of Lifelines to disruption.

By collecting data for the Lifelines in each community and determining the level of lifeline dependency, the County supports the creation of prioritized, community specific mitigation actions and system redundancies to minimize the impact of any lifeline disruptions.

During one of the HMPC workshops, a poll asked participants what they thought were the County's most vital Lifelines. Figure 27 presents these results, where Safety & Security and Food, Water, & Shelter were thought to be most important to the community, though all Lifelines are by definition vital and each received some votes.

Figure 27. Vital Lifelines HMPC Poll

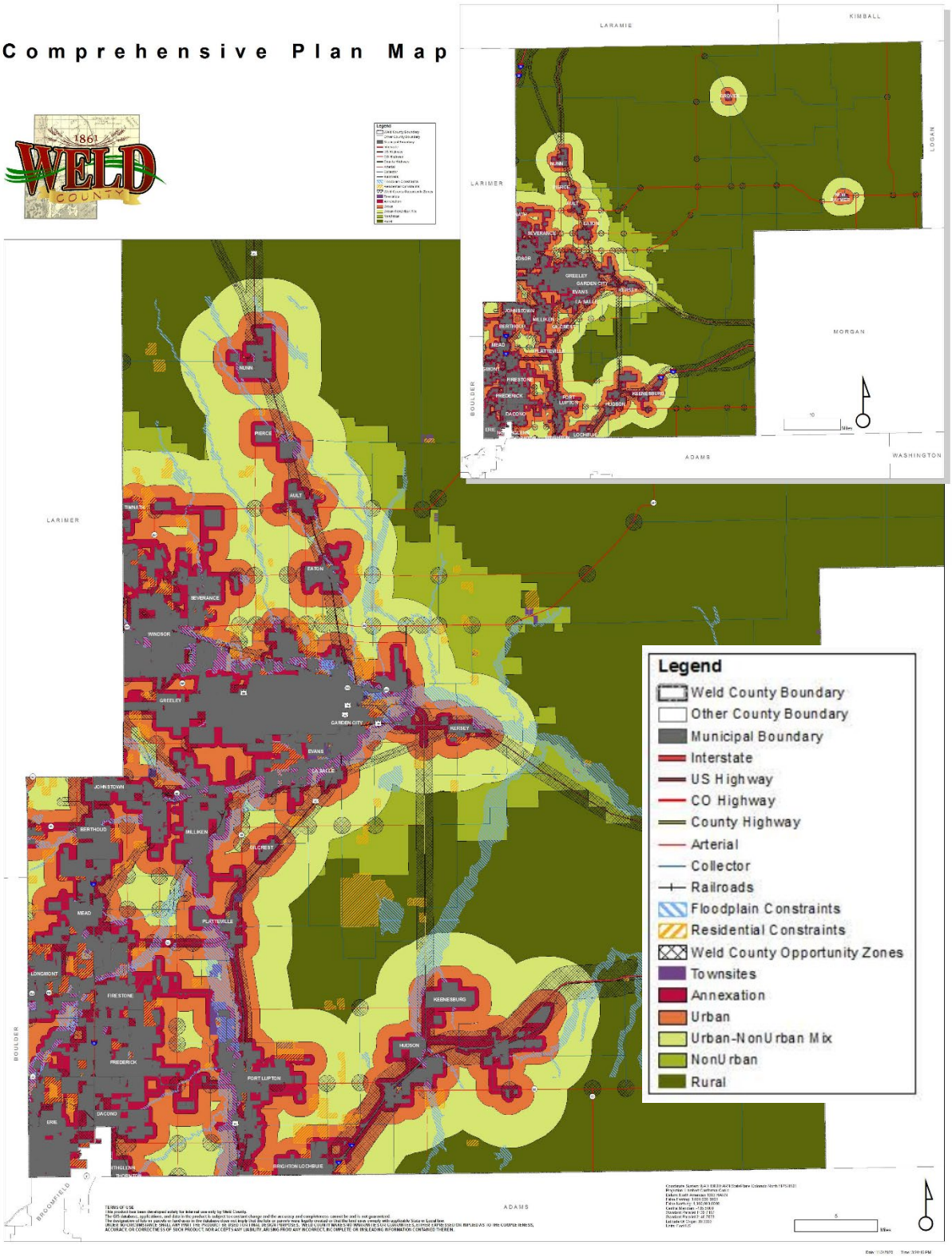


As part of the Plan's Mitigation Strategy, Lifelines and Subcomponents were identified and integrated into each jurisdiction's Mitigation Actions.

4.5 Future Development

A key strategy for reducing future losses in a community is to avoid development in known hazard areas while enforcing the development of safe structures in other areas. The purpose of this strategy is to keep people, businesses, and buildings out of harm's way before a hazard event occurs. The 2020 Weld County Comprehensive Map (Figure 28) highlights areas where future development can be expected. Commercial and industrial development required a zoning change and will be directed towards the identified Opportunity Zones. Residential development needs to be consistent with development scales shown.

Figure 28. 2020 Comprehensive Plan Map



The State Demography Office, a division of the Colorado Department of Local Affairs (DOLA), monitors population growth trends across the state and within counties. Projection data in Table 18 shows that the Weld County population will grow at roughly double the rate of the state population over the next two decades. As a proportion of the state's population, Table 19 shows Weld County's population is expected to increase by around 0.5% each year and by 2045 the County is estimated to make up about 8% of the state population. Currently, based on 2020 data, Weld County residents are an estimated 5.7% of the state population.

Table 18. Population Change Forecasts by Region and County, 2010 - 2050

	Average Annual Percent Change (5-year increments)							
	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50
Colorado	1.7%	1.9%	1.7%	1.4%	1.3%	1.1%	1.0%	0.8%
Weld County	2.2%	3.0%	3.2%	2.9%	2.6%	2.3%	2.1%	1.9%

Source: Colorado Department of Local Affairs (DOLA), 2020

Table 19. State Demographers Office Population Projections by Region and County (2010 – 2045)

	Population Projections (5-year increments)						
	July, 2015	July, 2020	July, 2025	July, 2030	July, 2035	July, 2040	July, 2045
Colorado	5,439,290	5,819,337	6,132,563	6,562,402	6,970,549	7,342,121	7,658,761
Weld County	283,767	331,895	370,012	425,999	487,195	550,178	614,124

Source: Colorado Department of Local Affairs (DOLA), 2020

The first of the following maps (Figure 29) shows population growth rate forecasts for the state of Colorado. Weld County is expected to grow at a faster rate than the majority of Colorado counties between now and 2040. The second map (Figure 30) shows projected population change across the state between 2010 and 2040.

Figure 29. Average Annual Percent Change in Population, Statewide

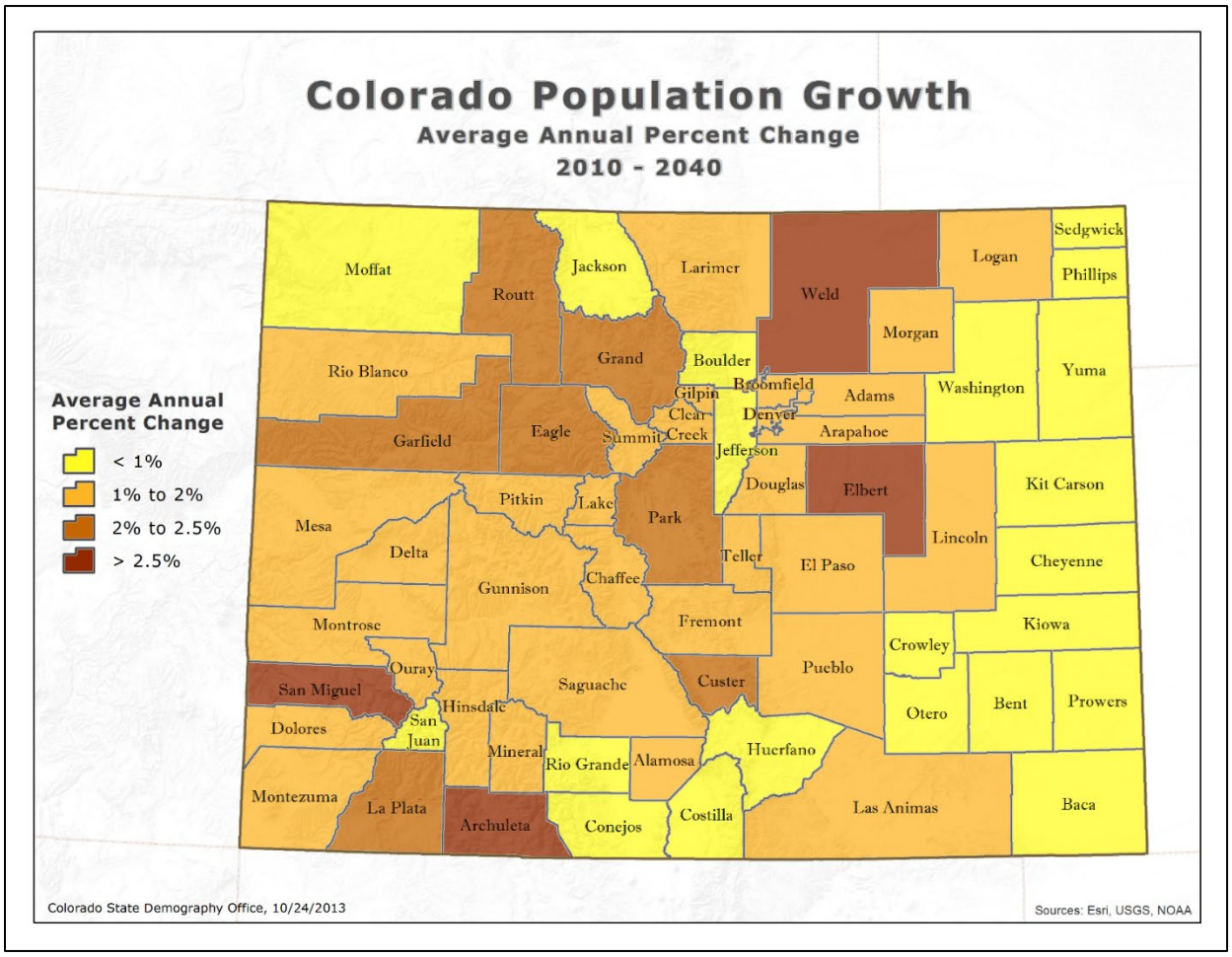
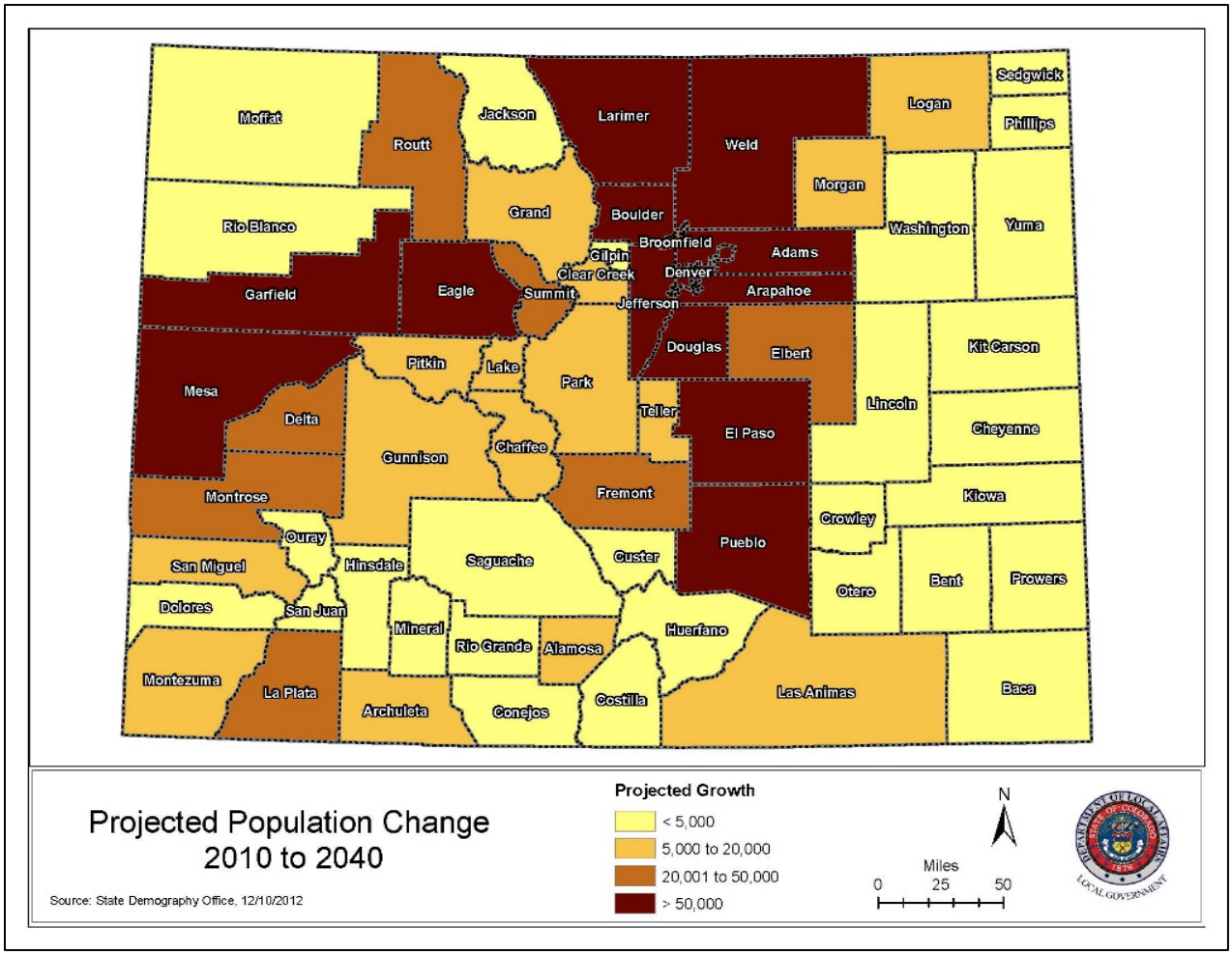


Figure 30. Projected Statewide Population Growth



Weld County has grown significantly in the past decade and is one of the fastest growing counties in the State. The amount of growth that Weld County has seen over the past decade has been dictated by the availability of undeveloped land. Based on observed population growth trends, housing demand within Weld County is expected to remain steady over the next decade.

Since the adoption of the 2016 Plan, new residential and commercial development has continued to occur across the County. Table 20 depicts the number of new residential building permits issued annually in Weld County between 1990 and 2019. Most of the permit-issuing jurisdictions are municipalities, the remainder are county offices.

Based on this permit data, Weld County has had fluctuating increases in issued permits between 2015 and 2019. The number of permits issued in 2016 drastically increased over those issued in 2015 by 790 permits or a 27% increase. The next highest increase in the same period was in 2018, with a 9.9% increase over the previous year. There was a 5.1% increase in 2017 and a 7.6% increase in 2019.

The number of units permitted year over year differed substantially, as well. In 2016, there was a decrease in unit permits issued of -5.8%. The rest of the time period saw varied growth between 6.3% and 17.5%.

Table 20. Annual New, Privately-Owned Residential Building Permits Issued in Weld County

Year	Permits/Buildings	Units
2019	3,668	4,387
2018	3,389	4,107
2017	3,051	3,646
2016	2,893	3,009
2015	2,103	3,186
2014	2,053	2,708
2013	1,650	1,935
2012	1,192	1,241
2011	807	889
2010	802	863
2009	726	761
2008	867	980
2007	1,572	1,847
2006	2,609	2,922
2005	4,127	4,279
2004	3,915	4,414
2003	3,691	3,963
2002	3,891	4,411
2001	3,991	4,301
2000	4,001	4,369
1999	3,413	3,557
1998	2,839	3,069
1997	1,832	2,117
1996	1,710	1,856
1995	1,326	1,470
1994	1,103	1,164
1993	862	965
1992	511	521
1991	335	357
1990	256	271

Source: U.S. Census Bureau, Building Permits Survey, Colorado Department of Local Affairs (DOLA)

5 Risk Assessment

5.1 Introduction

A key step in preventing future disaster losses in Weld County is developing a comprehensive understanding of the hazards that pose risks to local communities. The following terms facilitate comparisons between communities and can be found throughout the Plan.

Table 21. Key Risk Assessment Terminology

Hazard:	Event or physical conditions that have the potential to cause fatalities, injuries, property damage, infrastructure damage, agricultural loss, damage to the environment, interruption of business, other types of harm or loss
Risk:	Product of a hazard's likelihood of occurrence and its consequences to society; the estimates impact that a hazard would have on people, services, facilities, and structures in a community
Vulnerability:	Degree of susceptibility to physical injury, harm, damage, or economic loss; depends on an asset's construction, contents, and economic value of its functions

Source: Federal Emergency Management Agency, 2001

The Hazard Identification and Risk Assessment (HIRA) summary is a method for evaluating risk as defined by probability and frequency of occurrence of a hazard event, exposure of people and property to the hazard, and consequences of that exposure. Different methodologies exist for assessing the risk of hazard events, ranging from qualitative to quantitative approaches.

Weld County and its communities are vulnerable to a wide range of natural and human-caused hazards that threaten life and property. The hazards identified by the HMPC for inclusion in the Plan are those determined to be of actual potential threat to Weld County and its municipalities. They are consistent with the hazards identified by the State of Colorado and the Federal Emergency Management Agency for this part of the State and this region of the country. The hazards profiled for the 2021 Plan include:

- Agricultural Hazards (Including Disease & Pests)
- Cyber Hazards
- Drought
- Earthquake
- Extreme Temperatures
- Flood (Including Dam & Levee Failure)
- Hazmat Release
- Land Subsidence
- Prairie Fire
- Public Health Hazards
- Severe Storm (Including Hail, Lightning, & Winter Storm)
- Tornado & Straight-Line Wind

The HMPC agreed to add Agricultural Hazards and Cyber Hazards to this updated Plan. All other hazards were included in the 2016 Plan. Some of these hazards can be interrelated (for example, severe

storms can cause flooding, drought can lead to wildfire), and thus discussion of these hazards may overlap where necessary throughout the Risk Assessment.

5.2 Disaster Declarations

The following table presents a list of all federal FEMA disaster and emergency declarations that have occurred in Weld County since 1953. This list presents the foundation for identifying what hazards pose the greatest risk to the County and to its local jurisdictions. Weld County has experienced 16 declarations in total, with only two (both relating to the current COVID-19 pandemic) occurring since the last Plan update.

Table 22. Federal FEMA Disaster and Emergency Declarations in Weld County

Declaration #	Date	Event Details
FEMA-4498-DR	1/20/2020 – present	COVID-19 pandemic
FEMA-3436-EM	1/20/2020 – present	COVID-19 pandemic
FEMA-4145-DR	09/14/2013	Severe Storms, Flooding, Landslides, and Mudslides
FEMA-3365-EM	09/12/2013	Severe Storms, Flooding, Landslides, and Mudslides
FEMA-1762-DR	05/26/2008	Severe Storms and Tornadoes
FEMA-3224-EM	09/05/2005	Hurricane Katrina Evacuation
FEMA-EM-3185	04/09/2003	Snowstorm
FEMA-1421-DR	06/19/2002	Wildfires
FEMA-1374-DR	05/17/2001	Severe Winter Storms
FEMA-1276-DR	05/17/1999	CO Flooding 4/30/1999
FEMA-1186-DR	08/01/1997	Severe Storms, Heavy Rain, and Flash Floods, Flooding, Mudslides
FEMA-517-DR	08/02/1976	Severe Storms and Flash Flooding
FEMA-385-DR	05/23/1973	Heavy Rain, Snowmelt, Flooding
FEMA-379-DR	05/08/1973	Dam Failure
FEMA-261-DR	05/19/1969	Severe Storms, Flooding
FEMA-200-DR	06/19/1965	Tornadoes, Severe Storms, Flooding

Source: FEMA Disaster Declarations Summary

Additionally, the county has experienced U.S. Department of Agriculture (USDA) Secretarial Disaster Designations. There have been eight crop years since 2006 when Weld County received such designations. Additional details can be found in the Drought Profile (Table 37).

The following table presents state disaster declarations that have impacted Weld County. There have been four declarations since the last Plan update. One concerns the ongoing global COVID-19 pandemic, another was a statewide wildfire declaration, and the other two related to winter storms.

Table 23. State Disaster Declarations in Weld County

Year	Hazard	Statewide?
2020	COVID-19 pandemic	X
2017	Snow, heavy rains	
2017	Wildfire	X
2016	Blizzard	

Year	Hazard	Statewide?
2014	Extreme weather	X
2013	Flooding	
2013	Winter storm	X
2009	Severe spring snowstorm	X
2009	Severe blizzard	X
2008	Severe tornadoes	
2003	Snow emergency	X
2002	Wildfires	X
2002	Drought	X
1999	Flooding, landslides, mudslides	
1997	Flooding	
1995	Flooding	
1994	Wildfires	X
1986	Winter storm	
1982	Severe winter storm	
1981	Tornadoes	
1981	Dam safety	
1980	Flooding	
1980	Grasshopper infestation	

Source: CO State Hazard Mitigation Plan, Governor Executive Orders

5.3 Update Summary

As part of this Plan's five-year update, the risk assessment was updated across this document as best available data allowed. The HMPC also revisited the hazard risk rankings performed in 2016 and have updated these accordingly.

Additionally, the County utilized data analytics to improve the quantitative risk assessment and serve as an additional input into community risk assessments.

5.3.1 Hazard Events Since 2016 Plan

The following section details the larger hazard events that have occurred across Weld County since development of the 2016 Plan's risk assessment.

5.3.1.1 Events Summary

Table 24 presents summary information relating to hazard events that have occurred since the previous Plan update in 2016. This is the best available data, as sourced from the HMPC and available hazard databases and resources. It is important to note that this only includes hazard events that have been reported and is not a full picture of the occurrences of less disruptive hazard events.

Table 24. Hazard Event Summary (2015 – 2020)

Hazard	Count	Deaths	Injuries	Property Damages	Crop Damages
Flood	10	0	0	$1.57 M	$425 K
Flood (Dam Failure)	1	0	0	$0	$0
Public Health Hazards (COVID-19)	1	145	0	$0	$0
Severe Storms (Hail)	248	0	0	$15 K	$0
Severe Storms (Lightning)	1	0	0	$5 K	$0
Severe Storms (Winter)	42	0	0	$0	$0
Tornado	25	0	0	$0	$0
Wind	74	0	1	$300 K	$0

Source: NOAA (1/1/2015 – 6/30/2020), Weld County (COVID losses current as of 12/10/2020)

5.3.1.2 Damaging Events

Additional details relating to reported losses from damaging hazard events since the 2016 Plan are presented below.

Table 25. Damaging Events (2015 – 2020)

Date	Hazard	Location	Property Damages	Crop Damages
3/11/2020 (ongoing)	Pandemic, Cascading Public Health Issues	Global	$0	$0
COVID-19 is caused by infection with a new coronavirus, SARS-CoV-2. As of this plan's writing, this global pandemic continues to rage on. As of 12/10/2020 there have been 16,578 reported cases across Weld County, resulting in 145 deaths. While not causing direct damages to any property or crops, this virus has caused major impacts to local economies. Additional details will be added in future plan updates when the pandemic has ended.				
9/25/2020	Flood (Dam Failure)	Johnstown	$0	$0
On 09-25-2020 Weld OEM was informed of a dam failure at Johnstown Reservoir. The State Dam Inspector was doing an inspection and noticed it was leaking badly. The reservoir was near capacity. An evacuation was not needed however it required an urgent response. The Emergency Response Plan was activated. At 12:35 a conference call took place between Weld OEM, FRFR, Town of Johnstown, Public Works, and members of the State Division of Water Resources. The plan was to stop the leak in the short term, and a long term solution would be coordinated between the Town and State. No injuries, no deaths were reported. Front Range Fire Rescue arrived at 14:41 and proceeded to reduce the leak to a manageable level. Town staff worked with dam safety personnel to arrange for a more permanent fix to be completed the following morning. No property damage dollar amount is available at this time. Long term repairs have not yet been completed. Public works estimates they will be completed in 2021. Estimated cost for the repairs: $ 425k.				
6/18/2018	Flood, Hail, Lightning	Multiple	$10 K	$0
In Weld County, several communities received hail damage and flooding due to severe thunderstorms: Frederick, Firestone, Hudson, Keenesburg, and Prospect Valley. Lightning struck an				

Date	Hazard	Location	Property Damages	Crop Damages
injection well northeast of Hudson, sparking a fire. First responders worked this incident for several hours. Weld County had several road closures due to flash flooding including Hudson, Keenesburg, Roggen, and Prospect Valley. Some of the road closures included: County Road 46 from between County Roads 45 to 47, County Road 63 from County Roads 16 to 16.5. Trained spotters measured storm total rainfall from 2.93 inches to 5.53 inches. Several roads were damaged. The frontage road at Interstate 76 and Weld County Road 53 was inundated by floodwaters and completely washed. County Roads 16 and 63, and County Road 49 and State Highway 52 were partially flooded.				
5/8/2017	Hail, Flood, Lightning	Countywide	$505 K	$50 K
Hail and heavy rain clogged drains and caused flash flooding throughout Greeley. Up to three feet of water covered the roadway near U.S. 34 and U.S. 85. Flooding was reported throughout Greeley. The Greeley Fire Department received 30 calls of flooding. Firefighters helped several residents get out of garden level apartments that had flooded. Several other businesses and buildings suffered flood damage, including Greeley City Hall and an apartment complex in Evans. The Greeley Mall was extensively damaged when water poured into the mall from the roof and debris inundated the main floor. The Frontier Academy Elementary School was also flooded, with administrators canceling classes the following day to clean up the damage. Windsor-Severance Fire Protection District had multiple reports of lightning strikes, including one that hit near Windsor Middle School and set off the school's fire alarms.				
3/7/2017	Wind	Countywide	$100 K	$0
Strong winds blew over a semi-tractor trailer on Interstate 25 near the Wyoming border, no injuries were reported. The high winds and very dry conditions continued across the northeast plains of Colorado. In west Greeley, a building under construction completely collapsed. The 5,000 square-foot addition to a church swayed under the force of the wind then collapsed. Some of the debris pinned a construction worker; he suffered minor injuries. Peak wind gusts included: 66 mph, 4 miles southwest of Sterling; 64 mph at Briggsdale and Crook; 63 mph, 8 miles south of Holyoke; 62 mph, 8 miles south-southwest of Grover; 60 mph, 2 miles south-southeast of Denver International Airport; 58 mph at Akron Municipal Airport and 55 mph at Greeley Airport.				
8/19/2016	Hail	Multiple	$15 K	$0
Severe thunderstorms also produced damaging wind and hail across parts of Adams, Larimer, Lincoln and Weld Counties. Large hail dented cars, damaged shingles and broke windows.				
7/17/2016	Flood, Hail	Multiple	$5 K	$10 K
Severe thunderstorms produced large hail, from 1 to 2 inches in diameter; along with intense straight-line winds. Flash flooding was also observed 10 miles northeast of New Raymer. The combination of heavy rain and hail produced flash flooding along small creeks and streams.				
6/13/2015	Flood, Hail	Multiple	$15 K	$10 K
Flash flooding forced numerous road closures in and around Milliken and Platteville. Water, up to 3 ft deep, was observed at Division Rd and State Highway 66. State Highway 60 and Forest Rd were also closed due to floodwaters. Severe thunderstorms produced large hail, up to quarter size. Flash flooding was also observed which forced several road closures.				
6/2/2015	Flood	Multiple	$25 K	$50 K

Date	Hazard	Location	Property Damages	Crop Damages
A prolonged period of heavy rainfall coupled with snowmelt produced flooding along the Cache La Poudre and South Platte Rivers. The Cache la Poudre near Greeley crested at 9.05 feet on the 13th. The South Platte River near Kersey crested at 11.24 feet on the 14th. Both the Cache La Poudre and South Platte Rivers crested over a foot above flood stage. In Greeley, 6th Avenue was closed due to flooding. The water levels forced the closure of Weld County Road 53. The waters also flooded some nearby homes and farmland.				
5/20/2015	Flood	Multiple	$500 K	$200 K
The Cache La Poudre and South Platte River rose above flood stage producing a prolonged period of minor to moderate lowland flooding. Numerous county roads along the rivers remain closed due to floodwaters.				
5/9/2015	Flood	Multiple	$515 K	$105 K
Areal flooding developed along the Cache La Poudre and South Platte River Basins as a combination of heavy rainfall and spring runoff inundated the region. The Cache La Poudre reached flood stage from the 10th to the 14th. The South Platte rose above flood stage at Kersey from the 9th to the 15th. Flooding resulted in numerous road closures in the vicinities of Barnesville, Briggsdale, Firestone, Frederick, Ft Lupton, Gill, Highland Lake, Keenesburg, Kersey, Mead, New Raymer, Riverside Reservoir near Masters, Roggen, Riverside Reservoir near Masters, and Windsor. The next day heavy rain produced additional flooding along already swollen creeks and streams in southwestern Weld County. Mandatory evacuations were ordered at the St. Vrain Campground in Weld County along with numerous roads closures across southern, central and eastern portions of Weld County.				

Source: NOAA (1/1/2015 – 6/30/2020)

The HMPC was also polled during a workshop on recent hazard events, which are summarized in Figure 31.

Figure 31. Recent Hazard Events HMPC Poll

5.3.2 Data Analytics

The risk analysis commonly relies on the expertise and industry knowledge of community-based planning teams, including local government officials, public stakeholders and county residents. While the knowledge and input from these community-based planning teams provides irreplaceable insight, a shift towards data-driven analyses and analytics can lead to significant improvements in the risk identification step.

Why is analytics beneficial? Analytics offers many advantages, including:

- Objective, data-driven outcomes;
- Flexible and open methods;
- Reproducible workflows and results;
- Easily updated analyses over time and after events; and
- Defensible outputs.

With the use of data analytics, the risk identification step is less subjective and the analysis can be easily updated, transferred, and explained. The outcome of the analysis is not dependent on the participation of individuals or on knowledge transfer between individuals – any turnover, retirements, etc. that may have occurred within the community over time will not affect the analyses. Also, once the analytics process is established, the analysis can be easily rerun with updated or new data without the need for time and labor-intensive events, such as planning meetings. The analytics framework allows for flexibility as existing parameters can be easily modified and new hazard types or datasets can be easily incorporated into the existing model. Further, the use of analytics allows for defensible outputs as all results can be tracked to data and calculated transformations.

Given the above advantages, a portion of the hazard risk analysis for Weld County uses data analytics and GIS technology. Specifically, a composite risk map for Weld County was created by inputting multiple hazard-specific datasets into a suitability model.

5.3.2.1 Suitability Model

The risk analysis for the updated Plan was performed using a suitability model that was created in the GIS software, Esri ArcGIS. In general, a suitability model is used to identify the most fitting areas based on specified criteria. The analysis holds value in a wide variety of sectors, including retail, housing, biology, and health, due to its flexibility and scalability. For example, park rangers can consider factors such as elevation, foot traffic, proximity to streams, and vegetative cover to identify areas for bear relocation that will reduce the chances of bear interactions with park visitors. Regardless of the application, a suitability model ingests desired criteria at varying weights and outputs corresponding scores based on how closely the area of analysis adheres to the criteria.

A suitability model was employed to answer the following question: Where are the areas of highest risk?

The suitability model was performed using a 1 kilometer by 1 kilometer resolution and the following workflow.

1. Determine and prepare the criteria data:
   The criteria data was gathered from over 10 different agencies, including NOAA, FEMA, USGS, EPA and CDPHE, to represent 9 different hazards. The datasets were also processed in various ways to derive necessary parameters; for example, annual snowfall data from the past 12 years was averaged to determine the average annual snowfall accumulation, while EPA RCRA facility

data was used to determine the minimum amount of hazardous waste being generated throughout the county.

2. Transform the values of each criterion to a common hazard scale:
   The data from the previous step was transformed to a common hazard scale of 1 to 9 with 1 denoting areas with the lowest hazard and 9 denoting areas with the highest hazard. One of three transformation methods: unique categories, range of classes, and continuous functions, was used for each dataset.
   - Unique categories: one-to-one matching of the criterion value to the hazard value that is best used for categorical data (e.g. FEMA flood zones)
   - Range of classes: ranges of values grouped into homogeneous classes are assigned the same hazard value (e.g. depth to mines)
   - Continuous functions: applies linear and non-linear functions to transform the values continuously to the hazard scale (e.g. distance to hazardous materials routes)
3. Weight criteria relative to one another and combine them to create a risk map:
   Each hazard type was weighted based on the population likely affected by the corresponding hazard.

5.3.2.2 Hazard Types

The Plan considers 12 hazard types, but due to the nature of some hazards and data limitations, the suitability model only included nine. For example, an appropriate data source to evaluate the cyber hazard was not available, while drought does not vary enough throughout the county to be appropriate for the model. The following table shows the 12 hazards of interest to Weld County and a reason for exclusion in the model, if applicable.

Table 26. Hazards Included in Suitability Model

Natural Hazard	Included	Exclusion Reason
Agriculture Hazards	Yes	
Cyber Hazards	No	Data Limitation
Drought	No	No Geographic Variability
Earthquake	Yes	
Extreme Temperatures	No	No Geographic Variability
Flood	Yes	
Hazmat Release	Yes	
Land Subsidence	Yes	
Prairie Fire	Yes	
Public Health Hazards	Yes	
Severe Storm	Yes	
Tornado & Straight-Line Wind	Yes	

For the hazard types included in the suitability model, Figure 32 details the data sources used in the model. The hazards were combined at varying weights to determine the composite risk, with the weights assigned based on the potential magnitude of the population that would be affected in the case of the respective hazard event. The general classes of affected population can be seen in Table 27.

Figure 32. Flowchart Illustrating the Composition of the Composite Risk Score; Population Data Used to Determine the Weights of Each Hazard

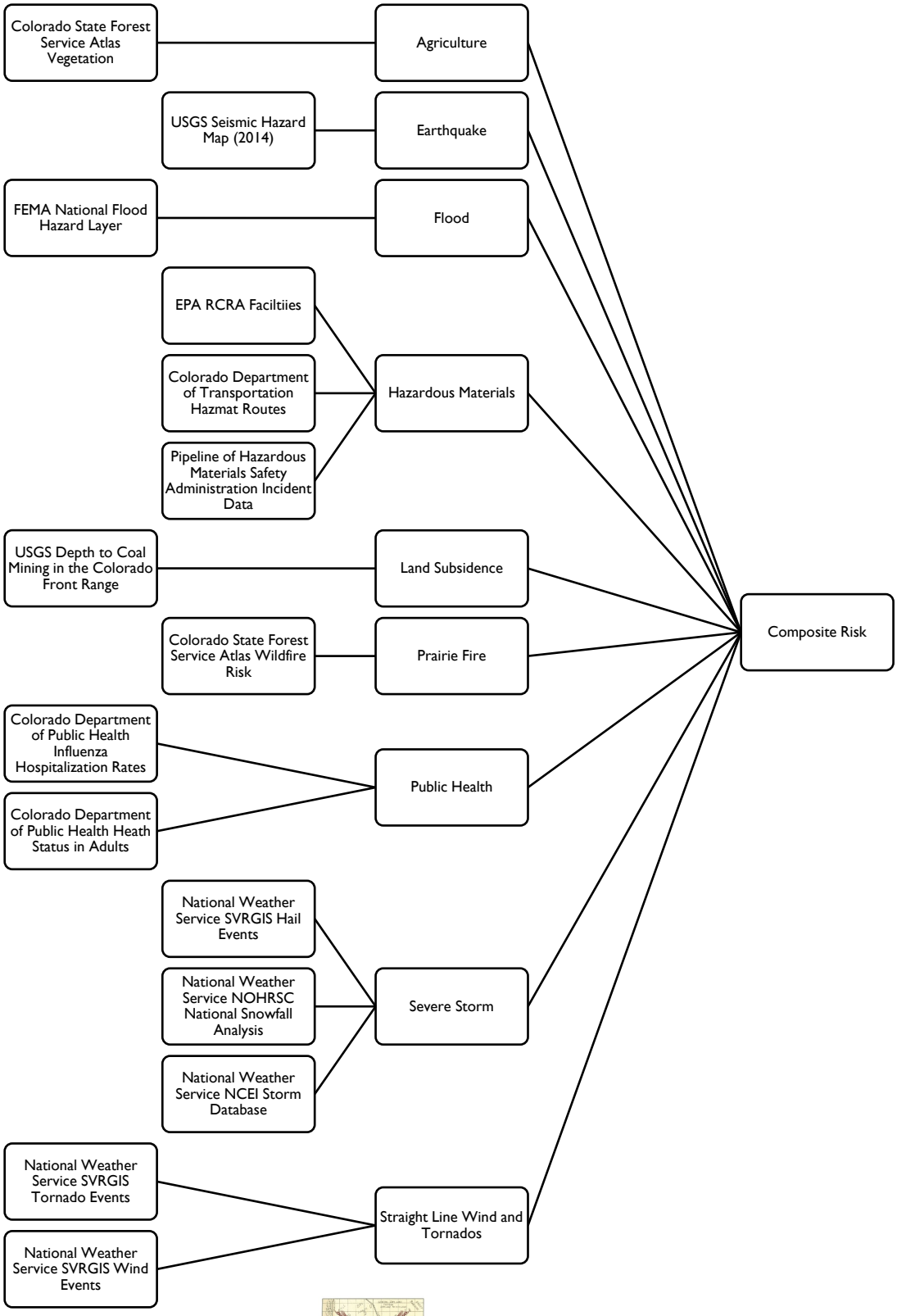


Table 27. Classes of Affected Population and Hazard Type

Percentage of Population Potentially Affected	Hazard Type(s)
50 to 100	Hazardous Material, Severe Storm, Straight-Line Wind/Tornado
15 to 50	Agriculture, Prairie Fire
5 to 15	Earthquake, Flood, Public Health
0 to 5	Land Subsidence

5.3.2.3 Analytic Results

Summary results are available below in Table 28 for the unincorporated County areas and 31 municipalities full or partially located within the County. In addition, the resulting composite risk layer from the suitability model can be seen visually in Figure 33. Further, the composite risk layer was combined with the County's social vulnerability index layer from the Centers for Disease Control and Prevention and can be seen in Figure 34.

Table 28. Composite Risk Across Jurisdictions

Town/City	Lowest Risk	Low Risk	Moderate Risk	High Risk	Highest Risk
Unincorporated County	15.20%	32.09%	23.21%	19.54%	9.95%
Ault	0.00%	0.00%	0.00%	25.00%	75.00%
Berthoud	0.00%	0.00%	21.43%	78.57%	0.00%
Brighton	0.00%	0.00%	0.00%	0.00%	100.00%
Dacono	0.00%	0.00%	0.00%	4.17%	95.83%
Eaton	0.00%	0.00%	0.00%	87.50%	12.50%
Erie	0.00%	0.00%	0.00%	4.65%	95.35%
Evans	0.00%	0.00%	0.00%	34.48%	65.52%
Firestone	0.00%	0.00%	0.00%	44.74%	55.26%
Fort Lupton	0.00%	0.00%	0.00%	21.21%	78.79%
Frederick	0.00%	0.00%	0.00%	22.86%	77.14%
Garden City	0.00%	0.00%	0.00%	21.92%	78.08%
Gilcrest	0.00%	0.00%	0.00%	0.00%	100.00%
Greeley	0.00%	0.00%	0.00%	25.38%	74.62%
Grover	100.00%	0.00%	0.00%	0.00%	0.00%
Hudson	0.00%	0.00%	0.00%	78.57%	21.43%
Johnstown	0.00%	0.00%	11.54%	84.62%	3.85%
Keenesburg	0.00%	0.00%	60.00%	40.00%	0.00%
Kersey	0.00%	0.00%	0.00%	83.33%	16.67%
La Salle	0.00%	0.00%	0.00%	100.00%	0.00%
Lochbuie	0.00%	0.00%	0.00%	0.00%	100.00%
Longmont	0.00%	0.00%	0.00%	56.25%	43.75%
Mead	0.00%	0.00%	9.09%	69.70%	21.21%
Milliken	0.00%	0.00%	15.63%	71.88%	12.50%
New Raymer	0.00%	100.00%	0.00%	0.00%	0.00%
Northglenn	0.00%	0.00%	0.00%	0.00%	100.00%

Town/City	Lowest Risk	Low Risk	Moderate Risk	High Risk	Highest Risk
Nunn	0.00%	0.00%	0.00%	35.71%	64.29%
Pierce	0.00%	0.00%	0.00%	60.00%	40.00%
Platteville	0.00%	0.00%	0.00%	100.00%	0.00%
Severance	0.00%	0.00%	0.00%	8.00%	92.00%
Timnath	0.00%	0.00%	0.00%	0.00%	100.00%
Windsor	0.00%	0.00%	0.00%	15.52%	84.48%

Figure 33. Composite Risk Score

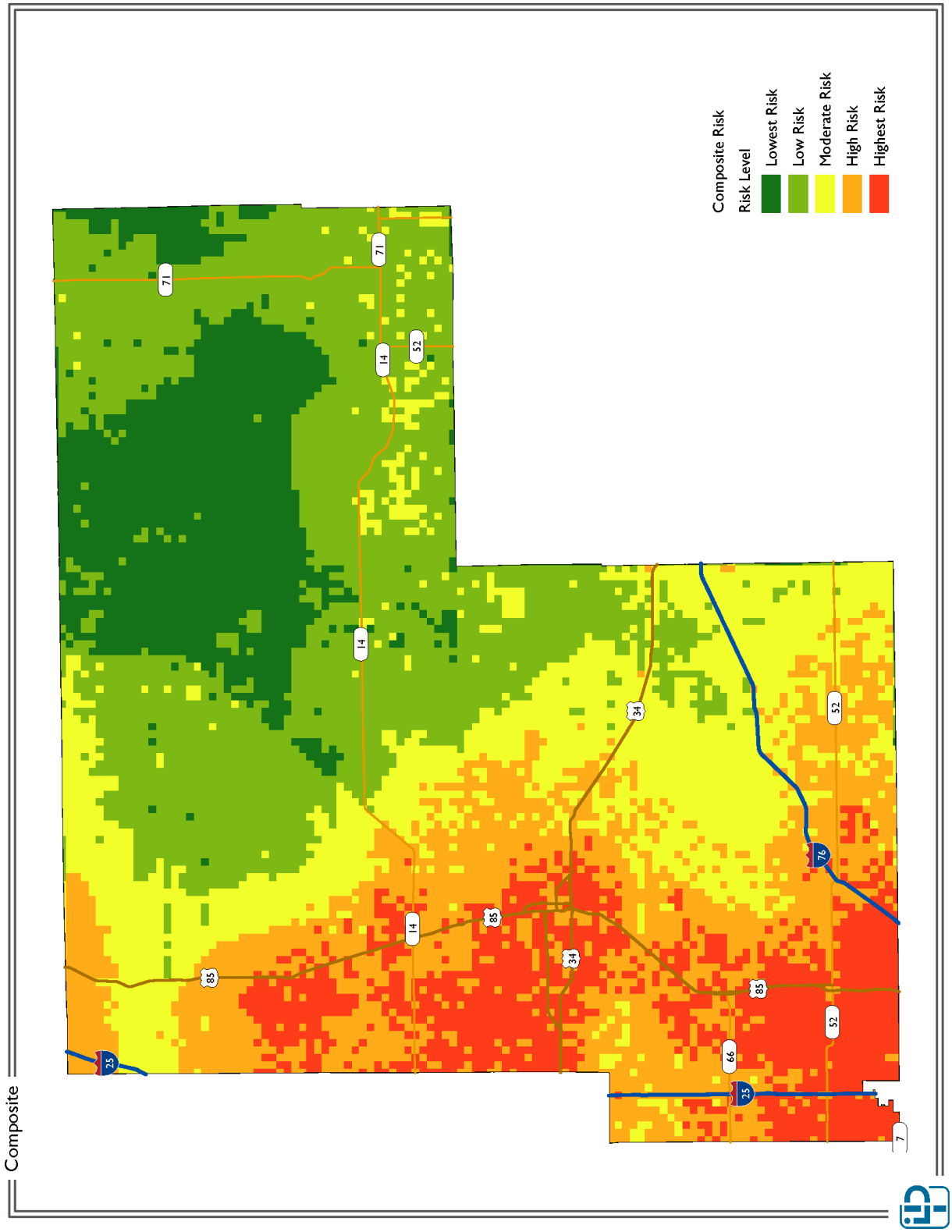
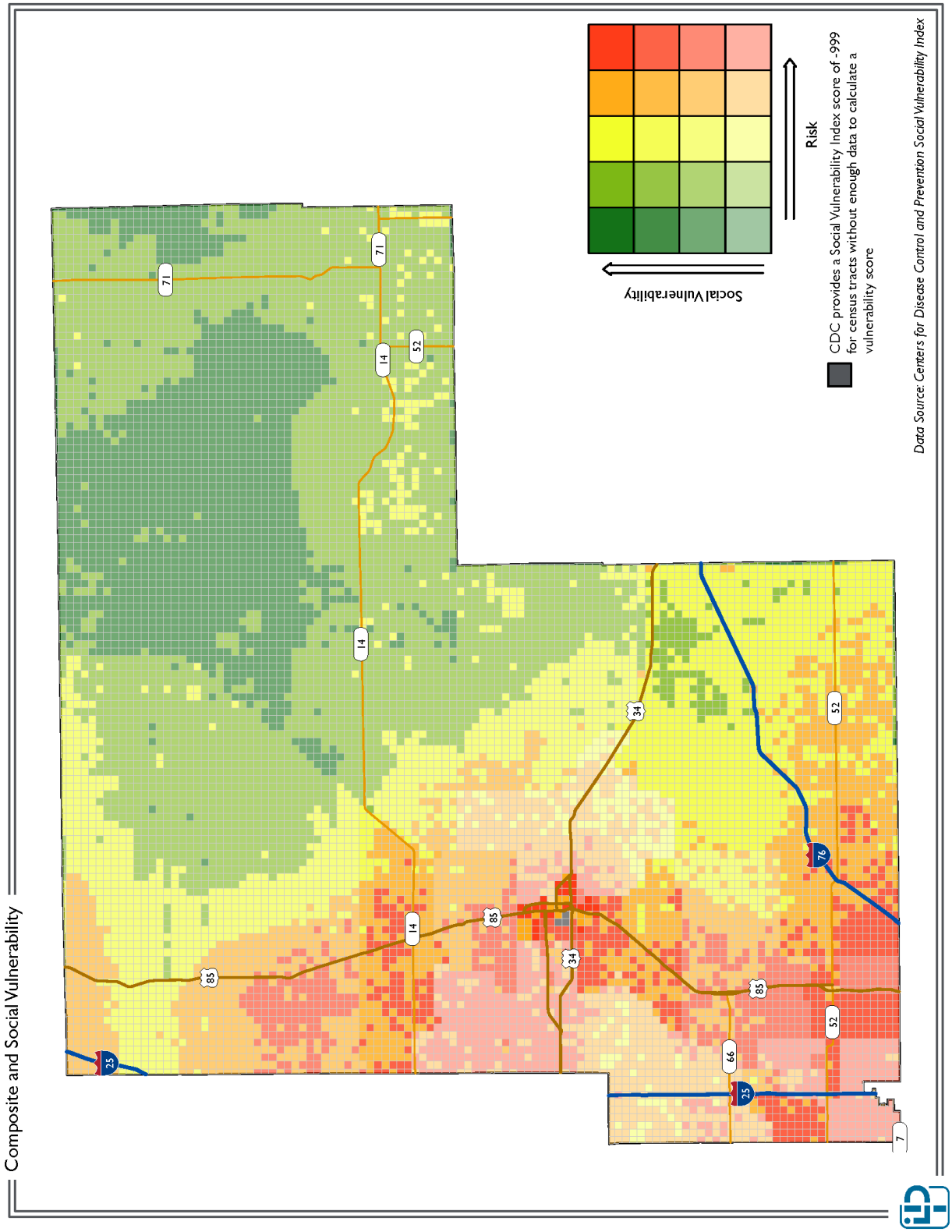


Figure 34. Composite Risk Score and Social Vulnerability



Overall across both Figures, it is apparent that hazard risk varies across the County. This risk does somewhat align with more densely populated areas, though there are multiple additional factors at play. The intent of this data is to be used at a countywide scale, enabling communities to determine the relative hazard risk that they face compared to other Weld jurisdictions. This enables consideration of the question: "Why are we at higher risk than our neighboring communities and what is driving that risk?"

The individual hazard inputs into the suitability model are included across the applicable hazard profiles later in this chapter.

5.4 Hazard Rankings

Hazards were ranked in order to provide guidance during development of this Plan's updated mitigation strategy. This ranking was both quantitative and qualitative. First, the quantitative analysis considered all the historical and geospatial hazard-specific data available. Then, a qualitative method, the Risk Factor (RF) approach, was used to provide additional insights on the specific risks associated with each hazard. This process also served as a valuable cross-check and validation of the quantitative analysis performed.

The RF approach combines historical experiences, local knowledge, and consensus opinions to produce numerical values that allow identified hazards to be ranked against one another. For the 2021 Plan update, this same RF approach was followed.

RF values are obtained by assigning varying degrees of risk to five categories for each hazard: *probability, impact, spatial extent, warning time*, and *duration*. Each degree of risk is assigned a value ranging from 1 to 4 and a weighing factor for each category was agreed upon by the HMPC (documented in the following Table). Based upon any unique concerns for the planning area, the HMPC may also adjust the RF weighting scheme. To calculate the RF value for a given hazard, the assigned risk value for each category is multiplied by the weighting factor. The sum of all five categories equals the final RF value, as demonstrated in the following example equation:

RF Value = [(Probability x .30) + (Impact x .30) + (Spatial Extent x .20) + (Warning Time x .10) + (Duration x .10)]

Table 29. Risk Factor Criteria

Risk Assessment Category	Level	Degree of Risk Level	Index	Weight
PROBABILITY *What is the likelihood of a hazard event occurring in a given year?*	Unlikely	Less than 1% annual probability	1	30%
	Possible	Between 1 - 10% annual probability	2	
	Likely	Between 10 - 99% annual probability	3	
	Highly Likely	100% annual probability	4	
IMPACT *In terms of injuries, damage, or death, would*	Minor	Very few injuries, if any. Only minor property damage & minimal disruption of quality of	1	30%

Risk Assessment Category	Level	Degree of Risk Level	Index	Weight
you anticipate impacts to be minor, limited, critical, or catastrophic when a significant hazard event occurs?		life. Temporary shutdown of Lifelines.		
	Limited	Minor injuries only. More than 10% of property in affected area damaged or destroyed. Complete shutdown of some Lifelines for more than one day.	2	
	Critical	Multiple deaths / injuries possible. More than 25% of property in affected area damaged or destroyed. Complete shutdown of some Lifelines for more than one week.	3	
	Catastrophic	High number of deaths / injuries possible. More than 50% of property in affected area damaged or destroyed. Complete shutdown of some Lifelines for more than one month.	4	
SPATIAL EXTENT *How large of an area could be impacted by a hazard event? Are impacts localized or regional?*	Negligible	Less than 1% of area affected	1	20%
	Small	Between 1 - 10% of area affected	2	
	Moderate	Between 10 - 50% of area affected	3	
	Large	Between 50 - 100% of area affected	4	
WARNING TIME *Is there usually some lead time associated with the hazard event? Have warning measures been implemented?*	More than 24 hours	Self-defined	1	10%
	12 – 24 hours	Self-defined	2	
	6 – 12 hours	Self-defined	3	
	Less than 6 hours	Self-defined	4	
DURATION *How long does the hazard event usually last?*	Less than 6 hours	Self-defined	1	10%
	Less than 24 hours	Self-defined	2	

Risk Assessment Category	Level	Degree of Risk Level	Index	Weight
	Less than 1 week	Self-defined	3	
	More than 1 week	Self-defined	4	

According to the weighting scheme applied, the highest possible RF value is 4.0. The methodology illustrated above lists categories that are used to calculate the variables for the RF value.

The following table summarizes the results of the RF ranking exercise performed by Weld County. The results represent the relative risk of different hazards within the County from the perspective of local stakeholders and subject matter experts. Note the final RF Ranking values in this table include the weighting factors previously mentioned.

Table 30. Risk Factor Results for Weld County

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	RF Ranking
Agricultural Hazards	2	3	4	1	4	2.8
Cyber Hazards	3	3	3	4	3	3.1
Drought	3	2	3	1	4	2.6
Earthquake	2	1	2	4	1	1.8
Extreme Temps.	3	1	4	1	3	2.4
Flood	3	2.5	3	1	3	2.7
Hazmat Release	4	2	2	4	2	2.8
Land Subsidence	2	1	1	4	3	1.8
Prairie Fire	3	2	2	4	2	2.5
Public Health Hazards	3	2.5	3	4	4	3.1
Severe Storms	4	3	3	2	1	3.0
Tornado & Wind	3	1.5	2	4	1	2.3

The conclusions drawn from the qualitative assessment carried out by the HMPC are organized into three categories shown in Table 31 and provide a summary of hazard risk for Weld County as a whole - based on High, Moderate, or Low risk designations. This process helped frame ongoing planning discussions around local and regional hazard risks and assisted with the development of the Plan's updated mitigation strategy.

Table 31. Hazard Risk Conclusions for Weld County

HIGH RISK (2.5 or higher)	**Agricultural Hazards, Cyber Hazards, Drought, Flood, Hazmat Release, Prairie Fire, Public Health Hazards, Severe Storm**
MODERATE RISK (2.0 – 2.4)	**Extreme Temperatures, Tornado & Straight-Line Wind**
LOW RISK (1.9 or lower)	**Earthquake, Land Subsidence**

A majority of the hazards profiled in this Plan have been determined to be High Risk for the County. This is primarily due to the high probability of these hazards occurring, coupled with the wide spatial extent of their potential damages and impacts.

Comparing the updated ranking to those from 2016, many of the High Risk hazards remain the same, with the additions of the two newly profiled hazards (agricultural and cyber hazards). Two hazards previously considered Moderate Risk are now also rated as High Risk (Drought, Public Health Hazards), as both on-going hazards are currently impacting the County.

The hazards of extreme temperatures and tornado & straight-line wind were determined to now be a Moderate Risk to the County, as opposed to the High Risk they were previously labeled. The two Low Risk hazards remain the same.

Table 32 presents each participating jurisdictions' final individual hazard risk ranking. This ranking originated through the RF approach. Additional individual qualitative and quantitative community inputs then lead to the final hazard risk conclusions.

The remaining sections of this chapter present individual hazard profiles and risk assessments for each of the twelve hazards identified by the HMPC for the 2021 Plan update. The hazards are presented in alphabetical order rather than by their levels of risk. Additionally, individual municipal risk assessments are included in Appendix B: Municipal Annexes, which focuses on those specific High Risk hazards impacting each jurisdiction.

Table 32. Risk Factor Results by Jurisdiction

	Agricultural Hazards	Cyber Hazards	Drought	Earthquake	Extreme Temps.	Flood	Hazmat Release	Land Subsidence	Prairie Fire	Public Health Hazards	Severe Storm	Tornado & Straight-Line Wind
Weld County	High Risk	High Risk	High Risk	Low Risk	Moderate Risk	High Risk	High Risk	Low Risk	High Risk	High Risk	High Risk	Moderate Risk
Town of Ault	Low Risk	Low Risk	Moderate Risk	Low Risk	Moderate Risk	Low Risk	High Risk	Low Risk	Moderate Risk	Moderate Risk	Moderate Risk	Low Risk
City of Dacono	High Risk	High Risk	High Risk	Low Risk	Moderate Risk	High Risk	Moderate Risk	Low Risk	Moderate Risk	High Risk	High Risk	High Risk
Town of Eaton	High Risk	High Risk	High Risk	Moderate Risk	Moderate Risk	Low Risk	High Risk	Low Risk	Moderate Risk	High Risk	High Risk	High Risk
Town of Erie	High Risk	High Risk	High Risk	Moderate Risk	High Risk	High Risk	Moderate Risk	Low Risk	Low Risk	High Risk	High Risk	Moderate Risk
City of Evans	Low Risk	High Risk	High Risk	Low Risk	Low Risk	High Risk	High Risk	Low Risk	Low Risk	High Risk	High Risk	High Risk
Town of Firestone	High Risk	High Risk	High Risk	Low Risk	Moderate Risk	High Risk	Moderate Risk	Low Risk	Moderate Risk	High Risk	High Risk	High Risk
City of Fort Lupton	Low Risk	High Risk	High Risk	High Risk	High Risk	Moderate Risk	Moderate Risk	Low Risk	Moderate Risk	High Risk	High Risk	High Risk
Town of Frederick	High Risk	High Risk	High Risk	Low Risk	Moderate Risk	High Risk	Moderate Risk	Low Risk	Moderate Risk	High Risk	High Risk	High Risk
City of Greeley	High Risk	High Risk	High Risk	Low Risk	High Risk	Moderate Risk	High Risk	Low Risk	High Risk	High Risk	High Risk	Moderate Risk
Town of Hudson	Low Risk	High Risk	Moderate Risk	High Risk	High Risk	Low Risk	High Risk	Low Risk	High Risk	High Risk	High Risk	High Risk
Town of Johnstown	Moderate Risk	Moderate Risk	Moderate Risk	Low Risk	Moderate Risk	Moderate Risk	Low Risk	High Risk	Moderate Risk	High Risk	Moderate Risk	Moderate Risk
Town of Keenesburg	High Risk	High Risk	High Risk	Moderate Risk	High Risk	High Risk	High Risk	Low Risk	Moderate Risk	High Risk	High Risk	High Risk

	Agricultural Hazards	Cyber Hazards	Drought	Earthquake	Extreme Temps.	Flood	Hazmat Release	Land Subsidence	Prairie Fire	Public Health Hazards	Severe Storm	Tornado & Straight-Line Wind
Town of LaSalle	Low Risk	Moderate Risk	High Risk	Low Risk	Moderate Risk	High Risk	High Risk	Low Risk	Low Risk	High Risk	High Risk	High Risk
Town of Mead	High Risk	High Risk	High Risk	Moderate Risk	High Risk	High Risk	High Risk	Low Risk	Moderate Risk	High Risk	High Risk	High Risk
Town of Milliken	Low Risk	Moderate Risk	High Risk	Low Risk	Moderate Risk	High Risk	High Risk	Low Risk	Moderate Risk	Low Risk	Moderate Risk	Moderate Risk
Town of Nunn	Moderate Risk	Moderate Risk	Moderate Risk	Moderate Risk	Moderate Risk	Low Risk	High Risk	Low Risk	Moderate Risk	High Risk	High Risk	Moderate Risk
Town of Pierce	Low Risk	Moderate Risk	High Risk	Moderate Risk	High Risk	Moderate Risk	High Risk	Low Risk	Low Risk	Moderate Risk	High Risk	High Risk
Town of Platteville	Low Risk	Moderate Risk	Low Risk	Moderate Risk	High Risk	Moderate Risk	High Risk	Low Risk	Moderate Risk	Low Risk	High Risk	High Risk
Town of Severance	Moderate Risk	High Risk	High Risk	Low Risk	High Risk	High Risk	High Risk	Moderate Risk	Moderate Risk	High Risk	Moderate Risk	Moderate Risk
Town of Windsor	Low Risk	High Risk	High Risk	Low Risk	Moderate Risk	High Risk	High Risk	Low Risk	Low Risk	High Risk	High Risk	Moderate Risk

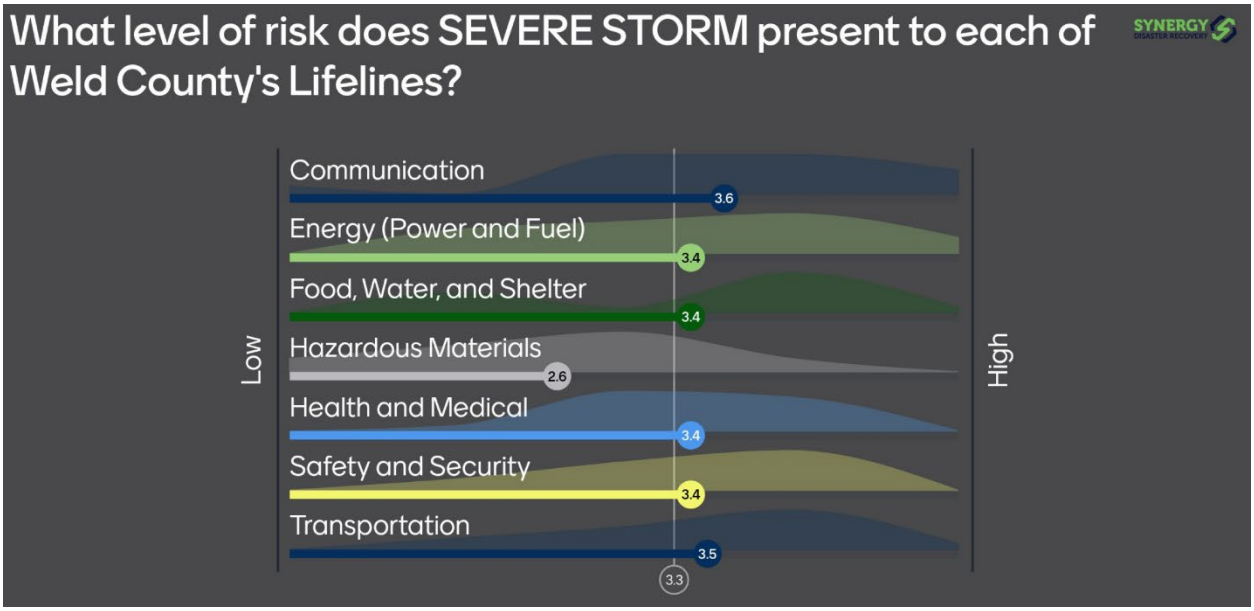
5.5 Lifeline Hazard Rankings

Hazards pose varied levels of risk to a community and its abilities to protect life safety, prevent property damages or loss, and support Lifelines. Lifelines are the most fundamental services in the community that, when stabilized, enable all other aspects of society to function. The integrated network of assets, services and capabilities that provide lifeline services are used to support the day-to-day needs of the community and enable society to function cohesively. Lifelines are separated into the following categories:

- Communications
- Energy (Power and Fuel)
- Food, Water and Shelter
- Hazardous Material
- Health and Medicine
- Safety and Security
- Transportation

As shown in Table 33 the HMPC members ranked the risk of each hazard on a scale of 1-5, based on the perceived effect of the hazard on each specific Lifeline. Figure 35 shows an example of the polling results.

Figure 35. Lifeline Risk Rankings HMPC Poll



These rankings were averaged, to gain an understanding of the overall risk that each hazard poses to these Lifelines. For example, the highest risk to all Lifelines comes from cyber attack (3.4). Other hazards posing a higher risk to Lifelines include severe storms, straight-line winds and tornadoes, Hazmat release, and flood.

The other side of determining risk is the level of risk the Lifeline itself holds. Each Lifeline encompasses agencies, organizations, and infrastructure crucial to meeting the specific needs of the community. Based on the criticality of the Lifeline, as well as the vulnerabilities within its systems, each Lifeline carries its own risk of being disrupted. For example, the HMPC rankings determined that, on average, the Lifeline

with the highest risk for disruption is Food, Water, & Shelter (3.2), followed by Health & Medical and Safety & Security.

Ultimately, the risk posed by hazards to Lifelines is best assessed individually. Every Lifeline is unique and composed of its own complex network of people, equipment, materials, structures, and infrastructure. To fully understand the risk, each component of a Lifeline's network needs to be evaluated against hazard risk.

Table 33. Lifeline Risk Ranking

Hazard	Communication	Energy (Power and Fuel)	Food, Water, and Shelter	Hazardous Materials	Health and Medical	Safety and Security	Transportation	Hazard Average
Agricultural Hazards	1.8	2.3	3.4	2.6	2.6	2.4	2.1	2.5
Cyber Hazards	4.5	3.5	2.6	2.1	3.4	4.4	3.1	3.4
Drought	1.4	2.3	4.1	1.5	2.3	2.1	1.5	2.2
Earthquake	2.2	2.9	2.7	2.7	2.7	3	3.1	2.8
Extreme Temperatures	1.9	3	3.5	2.1	3.2	2.4	2.1	2.6
Flood	2.5	3.3	3.7	2.9	2.9	3	3.7	3.1
Hazmat Release	2.3	2.6	3.3	4.4	3.8	3.1	2.8	3.2
Land Subsidence	1.6	2.1	2.1	1.9	1.7	2.1	2.4	2.0
Prairie Fire	2.4	2.6	2.3	2.4	2.7	2.9	2.1	2.5
Public Health Hazards	2.9	2.2	2.9	2.3	4.4	3.4	2.1	2.9
Severe Storm	3.6	3.4	3.4	2.6	3.4	3.4	3.5	3.3
Tornado & Straight-Line Wind	3.4	3.6	3.9	2.5	3.1	3.4	3.4	3.3
Lifeline Average	2.5	2.8	3.2	2.5	3.0	3.0	2.7	

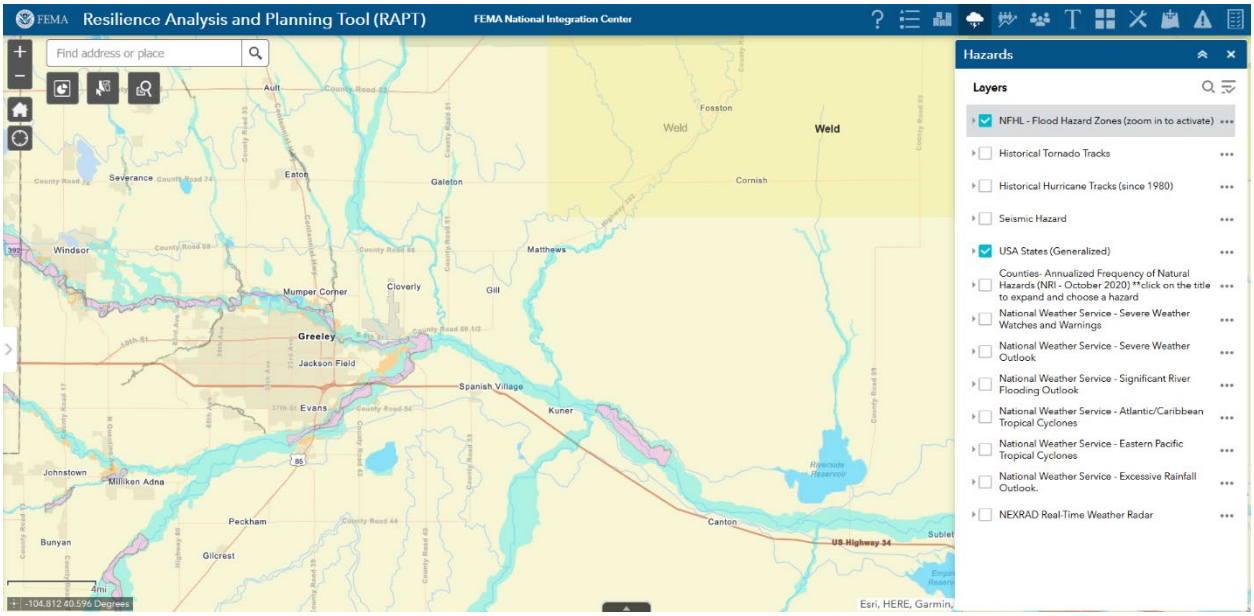
5.6 Hazard Data Viewers

All of the information contained in the following risk and vulnerability assessments is considered a snap-shot in time, based upon the best available data during the time of this Plan's development. It is expected that over the 5-year life of this updated Plan many of these data sets will continue to be updated and enhanced, while new data sources will become available. In order for communities to ensure they are referencing the latest and greatest hazard data, it is important that they are aware of how to access this information.

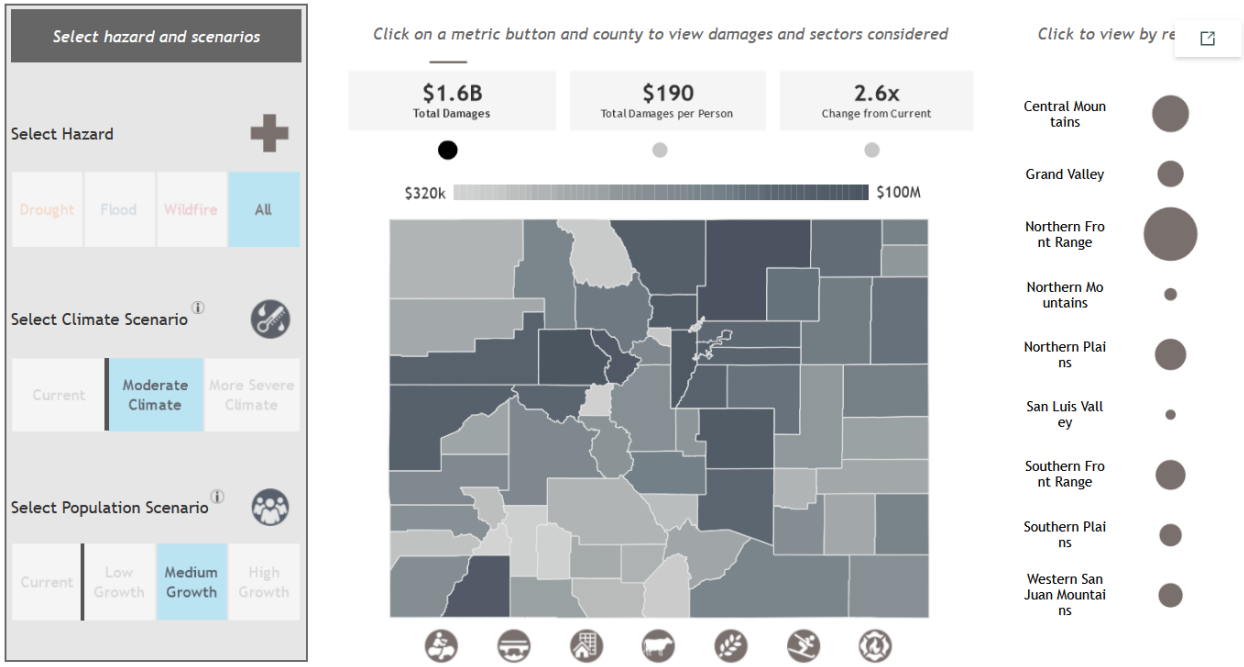
Fortunately, communities are now able to leverage state and federal web map viewers to assess the most current hazard mapping available for many of the hazards profiled in this Plan. The following bullets provide details on these tools.

- **FEMA's Resilience Analysis and Planning Tool (RAPT)**: The RAPT Viewer is a free GIS web map that allows communities to examine the interplay of census data, infrastructure

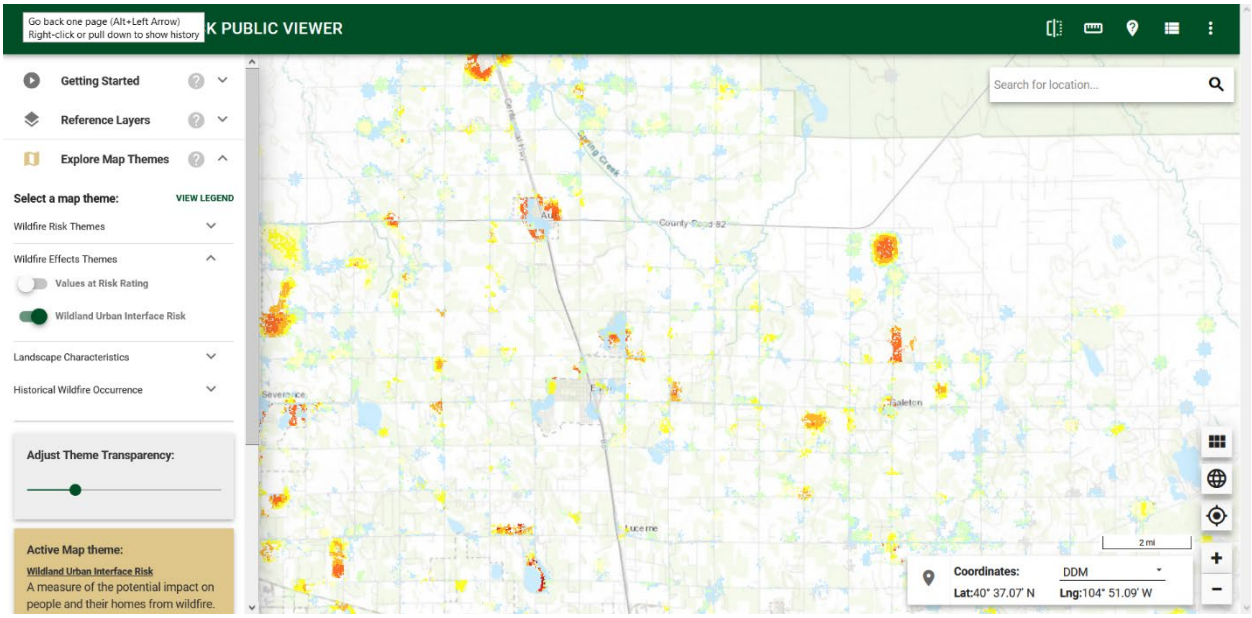
locations, and hazards, including real-time weather forecasts, historic disasters and estimated annualized frequency of hazard risk.



- **Colorado Future Avoided Cost Explorer (FACE):** The FACE Viewer is a public web map that presents the results of a statewide study concerning the direct impacts of flood, drought, and wildfire on select sectors of the Colorado economy. It is intended to help inform preparedness and resilience policies, support recovery and adaptation investments, and provide decision-makers with tools to quantify the growing cost in inaction.



- **Colorado Forest Atlas – Wildfire Risk Viewer:** The Wildfire Risk Viewer is a web-mapping application that allows users to identify specific wildfire risk levels within a 1/2-mile radius of a home, or any other point of interest on the map. A risk level description and link to additional resources is provided for users wanting to know how to reduce their risk.



5.7 Agricultural Hazards (including Disease & Pests)

HIGH RISK HAZARD

5.7.1 Hazard Identification

As agriculture is the one of the largest economic drivers for Weld County, hazard risks are a significant concern, specifically disease and pests. An outbreak of disease is when a parasite or pathogen infects animals and livestock, or in some cases crops, creating an illness that causes harm and possibly death. In the case of a pest infestation, this can include insects, animals (mammals and birds), or organisms (such as fungi and other invasive plant species, including noxious weeds) which negatively impact crop health and yield.

Diseases can include those that are known and required as reportable to the State Department of Agriculture, but can also involve those that are newly emerging. For some diseases, protocols are already put into place at the state level to minimize spread and negative impact, but it can be difficult to hold individual operations accountable to follow them.

Pest populations are impacted by climate and weather, which means they can vary greatly from year to year. Pests can be vectors for disease, such as flies and mosquitoes, or can damage agricultural products directly, such as grasshoppers and the Wheat Stem Sawfly.

Invasive plant species are those that are introduced to the agricultural area and begin to take resources, such as moisture, nutrients, and sunlight, from crops and the local ecosystem. Specifically, noxious weeds can be both non-native or indigenous to Colorado, based on the growth and range of a species throughout Colorado.

5.7.2 Previous Occurrences

There was a significant disease outbreak in 2019 of vesicular stomatitis virus (VSV) which affected counties across the State. According to the Colorado Department of Agriculture, in Weld County, this resulted in 73 quarantined animals. In 2014, 97 farms and ranches in Weld County were placed under quarantine for VSV.

The virus primarily affects horses and cattle, but exposure was shown in other animals, including swine, sheep, goats, llamas, and alpacas. There is a human risk of exposure, but it is rare. While VSV is seldom fatal, it can lead to malnutrition, dehydration, and weight loss. The mechanism of spread is unknown, however insects, specifically mites and flies, are the suspected vectors. Presently, there is no vaccine available. VSV is likely to have reoccurrence, however protocols are in place to minimize spread.

Grasshoppers are an annual occurrence and depending on the extent of population size can pose a risk to crops. Since 2005, Weld County has received USDA Secretarial Disaster declarations for insect infestation in 2006, 2012, and 2013. Weld County also experienced minimal damage to crops in 2011.

The Wheat Stem Sawfly was an issue in 2010 and 2011, where it infested the winter wheat. Data for crop loss is not available, so it is unknown how significant the impact was on the harvests for those years. The Wheat Stem Sawfly has a continuous presence in Colorado and neighboring states and has spread to other counties in Colorado, therefore it is continually a threat to wheat production in Weld County.

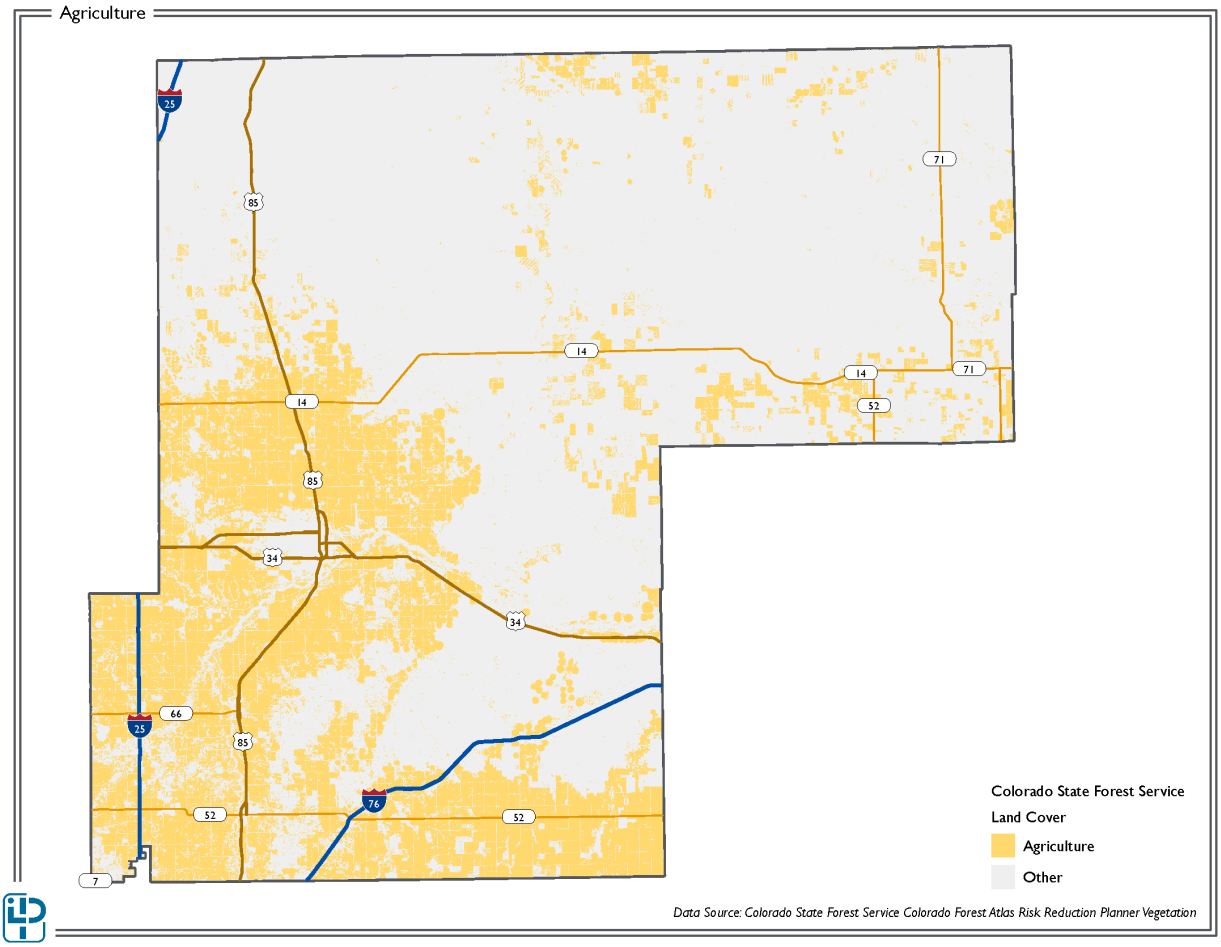
Invasive plant species or noxious weeds outbreaks are not tracked but are common throughout Colorado and Weld County. Weld County has a Weed Management Department which works with community members to identify plant species and avoid any rapid growth in the area.

In 2015, $68,000 in grant funding was used to control and remove noxious, invasive weeds along County roads in northern Weld County. This effort was jointly funded by the County, the Colorado Department of Agriculture, the US Forest Service, Pawnee National Grassland and area landowners.

5.7.3 Data Analytics

The input into the composite risk layer developed with the data analytics suitability model for agricultural hazards is shown in Figure 36.

Figure 36. Composite Risk Layer Agricultural Hazards Input



5.7.4 Inventory Exposed

In a 2017 census by the USDA, Weld County had 4,062 farms which make up 2,098,803 acres in land and employ 7,232 producers from the community. The total market value of products sold was $2,047,177,000 and accounted for 27% of the state agriculture sales.

5.7.5 Potential Losses

The agriculture industry in Weld County is a major contributor to the economy of the State and to the nation. The negative impact of an outbreak of disease, or impact of a natural or man-made disaster could

result in economic losses of enormous scale. The losses associated with an animal disease outbreak would not only directly impact the livestock value, but also the network of farming, transportation, processing, and animal medical industries that directly supports Colorado's farmers.

As agricultural losses are oftentimes a cascading hazard impact, it is important to recognize the relationship. The following Table presents insured crop losses caused by hazards from 2015 through the end of 2018. It is clear that outside of the agricultural hazards profiled in this section, severe storms (including hail) are the most potentially destructive hazard to the agricultural sector.

Table 34. Weld County Insured Crop Losses

Date	Indemnity Payments (2018 $'s)	Per Capita	Recorded Events
Drought	$1,510,192	$4.96	89
Flooding	$3,249	$0.01	1
Hail	$14,834,013	$48.79	158
Heat	$2,088,057	$7.15	57
Severe Storm / Thunder Storm	$7,837,009	$27.26	216
Wildfire	$982	$0.00	4
Wind	$669,368	$2.30	37
Winter Weather	$1,595,755	$5.55	53

Source: SHELDUS v19.0

5.7.6 Probability of Future Occurrences

The probability of future occurrences is high. The large amount of imports and exports in Weld County increases the risk of introduction of invasive species and previously unseen diseases.

Reportable diseases are closely monitored to ensure early detection of an outbreak, should one occur. One of the key responsibilities of the Animal Health Division, a branch of the Colorado Department of Agriculture, is to prepare for, control, and mitigate livestock disease outbreaks. The division has a number of preparedness and response plans for the various livestock sectors in Colorado.

The USDA's Animal and Plant Health Inspection Service (APHIS) branch is responsible for monitoring pests and diseases that pose high risks to agricultural resources. They base their preparedness and response plans from the feedback of stakeholders, however there is not a required list of reportable pests.

5.7.7 Land Use and Development

Although communities located in the eastern region of Weld County are less populated than many communities located to the west, the largely agricultural area is more susceptible to the impacts of health hazards that affect livestock and plants. In these communities, the spread of a highly destructive livestock disease or plant pest/disease could have devastating consequences to the local economy and environment. Early detection and a rapid response to a pest or disease infestation are critical to limiting the economic, social, environmental and public health impacts of such an incident.

5.8 Cyber Hazards

HIGH RISK HAZARD

5.8.1 Hazard Identification

Society is dependent on technology for day to day operations, and a major cyber incident could have significant and widespread impacts. Cyber hazards vary in the method of attack and area of technology targeted. They have been shown to affect a large variety of organizations, including hospitals, businesses and both state and local governments. These cyber attacks can result in the drastic slowing or halting entirely of productivity for an agency or organization. Data breach due to an attack is of great concern, not only for privacy reasons, but for the negative impacts that deletion or altering of data can have on future work for the organization.

Physical infrastructure damage is another cyber related hazard which should be considered. The potential cascading effects on the virtual systems that communities rely on could be devastating and long lasting. Extended power outages, fiber optic cable damage and other infrastructure damage or disruption would have widespread consequences for conducting everyday operations. Critical facilities and infrastructure (Community Lifelines) for water distribution and treatment, power and fuel supply delivery, as well as communications could see drastic impacts to capabilities from a cyber attack.

5.8.2 Previous Occurrences

Previous occurrences for cyber attacks are hard to track, as there is not a mandatory reporting structure for cyber incidents. Organizations often shield any incidents from public knowledge due to concerns about public perception of security.

5.8.3 Data Analytics

Cyber hazards were not able to be utilized as an input into the composite risk layer due to data limitations.

5.8.4 Inventory Exposed

All systems and communities are exposed to cyber hazards, either directly or indirectly, as so much of our current society is technologically dependent. Cyber hazards can impact government operations, release sensitive information, and impact Lifelines. Cyber attacks could interfere with emergency response activities in the event of a disaster and an attack may reduce the public's trust in the government. In some cases, hospitals have been attacked putting patient lives at risk, with no access to their medical records and treatment plans. Impacts specific to the County's municipalities would not vary from those of the County.

5.8.5 Potential Losses

It is difficult to predict potential losses without much publicly available previous occurrence data. Losses could vary significantly based on the event, with the potential for numerous cascading impacts across all community sectors. Losses could also be incurred through paying an attacker or through fines from regulators. Additionally, a large-scale attack could cause economic losses if services are impacted through an attack.

The Federal Bureau of Investigations oversees incidents that are voluntarily reported to them. According to their nationwide data, the incidents reported in 2019 added up to estimated losses of $3.5

billion in the U.S. Per the 2019 Internet Crime Report, Colorado ranked 11th in the nation for self-reported incidents, which resulted in losses of over $65 million.

5.8.6 Probability of Future Occurrences

Although there have been very few publicly reported previous occurrences, cyber attacks (especially ransomware attacks) are becoming more common, particularly geared towards local governments and hospitals. Therefore, the probability is assumed to be likely.

Many organizations handle cyber situations internally, which makes tracking the number of incidents that have occurred difficult to quantify and therefore it is difficult to quantify possible increases in incidents. However, per the FBI data, nationwide, almost 470,000 incidents were self-reported in 2019, or around 1,250 per day. This was a substantial increase from the 2018 number of the roughly 350,000 reported. While the actual number of incidents that has occurred each year is unknown, we can assume it is much higher than reported and growing exponentially annually.

5.8.7 Land Use and Development

With the significant population increases in the County, more people are exposed to the impacts of a potential cyber-hazard. The need for more critical infrastructure increases as population grows, which creates more opportunities for cyber-hazards to disrupt processes crucial to day to day operations.

As information technology becomes increasingly integrated with physical infrastructure operations, there is an increased risk for wide-scale or high-consequence events that could cause harm or disrupt services upon which our economy and the daily lives of millions of Americans depend. In light of the risk and potential consequences of cyber events, strengthening the security and resilience of cyberspace has become an important homeland security mission. Education for citizens and community partners is key in supporting the battle against cyber hazards.

5.9 Drought

HIGH RISK HAZARD

5.9.1 Hazard Identification

Drought is a normal part of virtually all climates, including areas with high and low average rainfall. It is caused by a deficiency of precipitation and can be aggravated by other factors such as high temperatures, high winds, and low relative humidity.

Droughts can be grouped as meteorological, hydrologic, agricultural, and socioeconomic. Representative definitions commonly used to describe the various types of drought are summarized below.

- **Meteorological** drought is defined solely on the degrees of dryness. It is expressed as a departure of actual precipitation from an expected average or normal amount based on monthly, seasonal, or annual time scales.
- **Hydrologic** drought is related to the effects of precipitation shortfalls on stream flows and reservoir, lake, and groundwater levels.
- **Agricultural** drought is defined principally in terms of soil moisture deficiencies relative to water demands of plant life, usually crops.
- **Socioeconomic** drought associates the supply and demand of economic goods or services with elements of meteorological, hydrologic, and agricultural drought. Socioeconomic drought occurs when the demand for water exceeds the supply as a result of a weather-related supply shortfall. The incidence of this type of drought can increase because of a change in the amount of rainfall, a change in societal demands for water (or vulnerability to water shortages), or both.

The Palmer Drought Severity Index (PDSI) was developed by Wayne Palmer in the 1960s and uses temperature and rainfall information in a formula to determine dryness. Over time it has become the semi-official drought index for risk assessment and hazard analysis. The Palmer Index is most effective in determining long term drought (a matter of several months) and is not used for short-term forecasts (a matter of weeks). It uses a 0 as normal conditions, and drought is shown in terms of negative numbers; for example, -2 is moderate drought, -3 is severe drought, and -4 is extreme drought. The following table provides an overview of the Palmer Index compared to other classifications.

Table 35. Drought Severity Classification

Drought Severity	Return Period (years)	Description of Possible Impacts	Drought Monitoring Indices		
			Standardized Precipitation Index (SPI)	NDMC* Drought Category	Palmer Drought Index
Minor Drought	3 to 4	Going into drought; short-term dryness slowing growth of crops or pastures; fire risk above average. Coming out of drought; some lingering water deficits; pastures or crops not fully recovered.	-0.5 to -0.7	D0	-1.0 to -1.9
Moderate Drought	5 to 9	Some damage to crops or pastures; fire risk high; streams, reservoirs, or wells low, some water shortages developing or imminent, voluntary water use restrictions requested.	-0.8 to -1.2	D1	-2.0 to -2.9
Severe Drought	10 to 17	Crop or pasture losses likely; fire risk very high; water shortages common; water restrictions imposed	-1.3 to -1.5	D2	-3.0 to -3.9
Extreme Drought	18 to 43	Major crop and pasture losses; extreme fire danger; widespread water shortages or restrictions	-1.6 to -1.9	D3	-4.0 to -4.9
Exceptional Drought	44 +	Exceptional and widespread crop and pasture losses; exceptional fire risk; shortages of water in reservoirs, streams, and wells creating water emergencies	Less than -2	D4	-5.0 or less

Source: National Drought Mitigation Center

5.9.2 Previous Occurrences

With its semi-arid climate, drought is a natural part of the Colorado environment. Because of natural variations in regional climate and precipitation, it is rare for the entire state to be deficient in moisture at the same time. Single season droughts that cover portions of the state, however, are fairly common.

Drought impacts can cover large areas and may come in many forms. The most significant drought impacts in Colorado are related to water-intensive activities including agriculture, municipal use, wildfire protections, recreation, wildlife preservation, commerce, and tourism. Drought conditions can lead to the compaction of soil, increasing erosion potential and decreasing water quality. The impacts associated with drought magnify as the duration of the event increases, as supplemental supplies in reservoirs are depleted and water levels in groundwater aquifers decline.

The State of Colorado has experienced severe, widespread drought several times since the late 1800s. The 2018 State of Colorado Drought Mitigation and Response Plan included a comprehensive description of the major droughts that have occurred in Colorado, including the Dust Bowl of 1930s,

the 1950s drought of the Great Plains, and the Colorado drought of 2002. The table below summarizes the duration of historical dry and wet periods in Colorado.

Table 36. Historical Dry and Wet Periods in Colorado

Date	Dry	Wet	Duration (years)
1893-1905	X		12
1905-1931		X	26
1931-1941	X		10
1941-1951		X	10
1951-1957	X		6
1957-1959		X	2
1963-1965	X		2
1965-1975		X	10
1975-1978	X		3
1978-1999		X	20
2000-2006	X		6
2007-2010		X	3
2011-2013	X		3

Source: 2018 Colorado Drought Mitigation and Response Plan

The previous table highlights seven multi-year droughts in Colorado since 1893. The most dramatic drought event occurred in the late 1930s and 1950s when a number of states in the region were affected by a several-year drought.

The Colorado drought of 2002 was the single most intensive year of drought in Colorado's history.[2] Statewide snowpack was at or near all-time lows, and the year is considered the driest single year recorded in Colorado history. What made the 2002 drought event so unusual was that all of the State was dry at the same time. Regional soil moisture was depleted and reservoirs dropped to extremely low levels. The dramatic drought conditions prompted widespread water restrictions that were heavily enforced and regulated. These restrictions included limits to watering lawns, washing cars, or the use of water for any other non-essential uses. Some municipalities offered incentives for property owners to remove their lawns and adopt xeriscaped landscape designs. Ultimately, it was the wet period of the late 1990s and the increased reservoir storage during that time that helped Colorado to survive the drought of 2002.

More recently, severe drought conditions have impacted the State of Colorado. Based on the U.S. Drought Monitor, approximately 50% of Colorado was already experiencing drought conditions by the start of 2012. Minimal accumulations of snow worsened conditions further, as below average snowfall and above average temperatures occurred in February and March. In April and May of 2012, warm temperatures caused early runoff as the thin snowpack melted rapidly. The entire State of Colorado was under drought conditions by the end of May 2012 and stream flows measured only slightly better compared to the extreme drought years of 1934, 1954, 1977 and 2002.

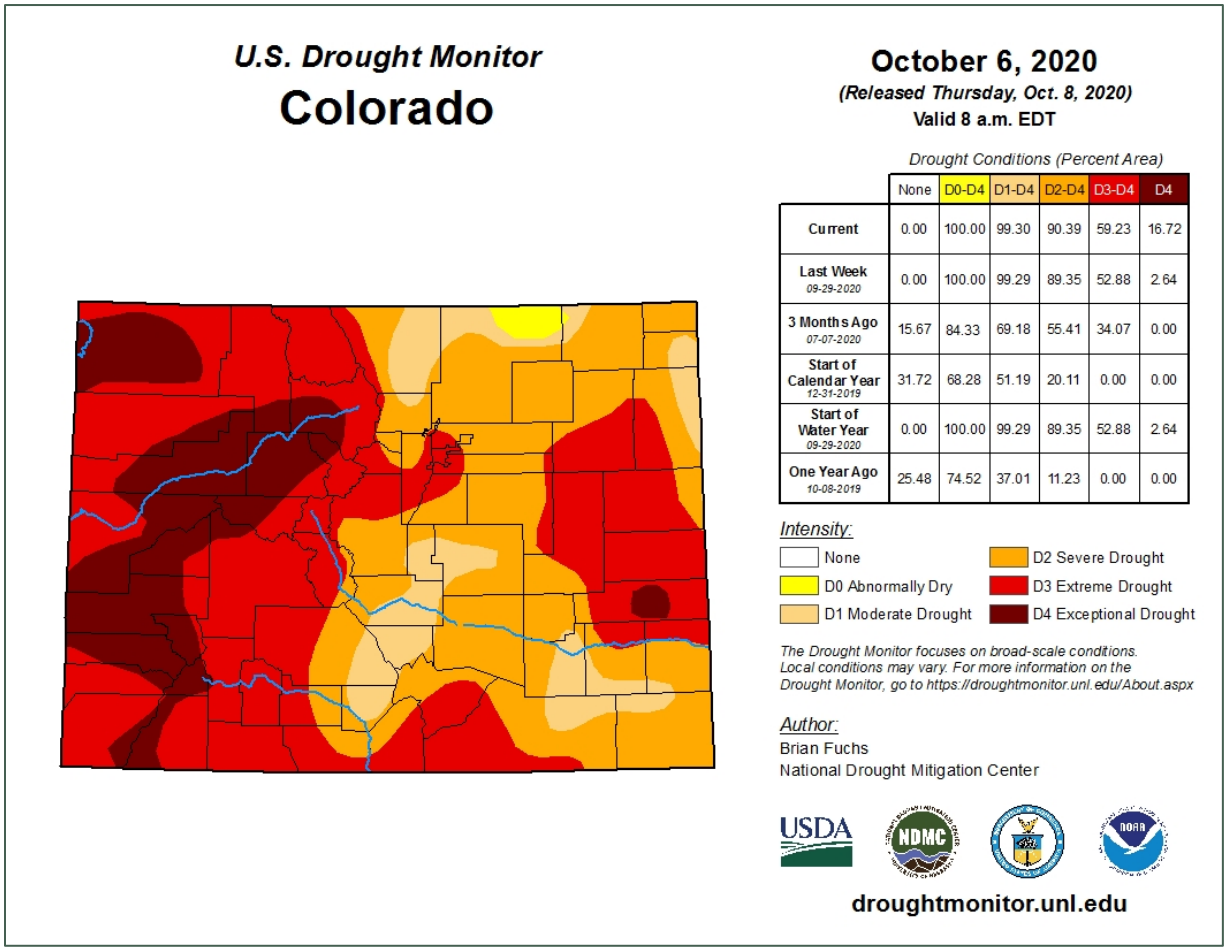
[2] Pielke and Doesken, 2003. The Drought of 2002 in Colorado.

Local agricultural production was heavily impacted by the 2011-2013 drought. Because soil moisture was low and temperatures high on the plains during the spring planting season, many crops struggled to take root and failed to survive the summer. Agricultural drought impacts were exacerbated by limited water availability for summer irrigation diversions due to less snowpack and runoff. In the eastern plains of Colorado, June temperatures were consistently over 100°F. As hay production decreased to 10% - 50% of average supply, prices increased dramatically. For example, corn prices increased 43% over two years as neighboring corn-producing regions in other states also struggled with drought. By early June 2013, many areas of the Eastern Plains normally covered by crops or cattle were barren. Many ranchers sold their herds as grasses had gone dormant and hay was expensive and in short supply.

In addition to having a devastating economic impact on Colorado agriculture and tourism, the 2011-2013 drought period contributed to elevated wildfire risk across the state. Two of the State's most destructive wildfires occurred during the 2012 drought period: the High Park Fire and the Waldo Canyon Fire. Dry conditions on the Eastern Plains contributed to an extended grass fire season that threatened homes and property.

As of the fall of 2020, large portions of the State are experiencing extreme and exceptional drought conditions. The entire State is experiencing some type of ongoing drought condition. A large majority of Weld County is experiencing severe drought, with the northwest corner of the County being less severe (abnormally dry and moderate drought). Figure 37 presents the current drought situation as of the fall of 2020.

Figure 37. U.S. Drought Monitor (October 2020)



	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	99.30	90.39	59.23	16.72
Last Week 09-29-2020	0.00	100.00	99.29	89.35	52.88	2.64
3 Months Ago 07-07-2020	15.67	84.33	69.18	55.41	34.07	0.00
Start of Calendar Year 12-31-2019	31.72	68.28	51.19	20.11	0.00	0.00
Start of Water Year 09-29-2020	0.00	100.00	99.29	89.35	52.88	2.64
One Year Ago 10-08-2019	25.48	74.52	37.01	11.23	0.00	0.00

During drought conditions Secretarial Disaster Declarations are used to make low interest loans and other emergency assistance available to those who have been affected (largely farmers and ranchers). Under the process laid out by the Farm Services Agency (FSA), a USDA Disaster Declaration can be made if any portion of a county has experienced eight consecutive weeks of severe drought according to the U.S. Drought Monitor.[3] The following Table lists the disaster declarations that have affected Weld County since 2003. Declarations have been made in four of the last five years since the previous Plan update.

[3] The 2018 Colorado Drought Mitigation Response Plan

Table 37. USDA Secretarial Disasters Affecting Weld County 2005 - Present

Year	Type
2020	Drought
2018	Drought, Flood, Excessive Rain, Hail, High Winds, Tornadoes, Lightning
2017	Drought
2016	Hail
2013	Drought, High Winds, Wildfire, Excessive Heat, Insect Infestation
2012	Drought, Hail, High Winds, Flood, Wildfire, Excessive Heat, Insect Infestation
2008	Drought, Hail
2006	Drought, Heat, High Winds, Wildfire, Excessive Heat, Insect Infestation, Crop Disease

Source: USDA – Colorado Farm Services Agency

Numerous drought declarations occurred between 2006 and 2020. One of the most significant disaster periods occurred in early July 2012, in which 62 of the State's 64 counties were included in a Secretarial disaster designation due to the 2011-2013 drought. Farmers in designated counties were able to apply for Farm Service Agency emergency loans for the next eight months.

Because drought is usually considered a regional hazard, all jurisdictions are assumed to have the same risk level within Weld County. Drought risk is based on a combination of the frequency, severity, and spatial extent (the physical nature of drought) and the degree to which a population or activity is vulnerable to the effects of drought. The degree of Weld County's vulnerability to drought depends on the environmental and social characteristics of the region and is measured by its ability to anticipate, cope with, resist, and recover from drought.

The National Drought Mitigation Center assesses the impacts caused by drought conditions. Following is a summary of the impact categories:

Agriculture: Drought impacts associated with agriculture, farming, aquaculture, horticulture, forestry or ranching. Examples of drought-induced agricultural impacts include: damage to crop quality; income loss for farmers due to reduced crop yields; reduced productivity of cropland; insect infestation; plant disease; increased irrigation costs; cost of new or supplemental water resource development (wells, dams, pipelines) for agriculture; reduced productivity of rangeland; forced reduction of foundation stock; closure/limitation of public lands to grazing; high cost or unavailability of water for livestock, Christmas tree farms, forestry, raising domesticated horses, bees, fish, shellfish, or horticulture.

Business and Industry: Drought impacts affecting non-agriculture and non-tourism businesses, such as lawn care businesses, sales of recreational vehicles or other recreational gear, and plant nurseries. Examples of drought-induced business impacts could include: reduction or loss of employees, change in sales or volume of business, variation in number of calls for service, early closure or late opening for the season, bankruptcy, permanent store closure, economic impacts.

Energy: Drought impacts associated with power production, electricity rates, energy revenue, and purchase of alternate sources of energy. Examples include hydropower and non-hydropower production when affected by drought, electricity rates, revenue shortfalls and/or windfall profits, purchase of electricity when hydropower generation is down.

Fire: Drought impacts contributing to forest, range, rural, or urban fires, fire danger, and burning restrictions. Examples of fire impacts include: Enactment/easing of burning restrictions, fireworks ban, increased fire risk, occurrence of fire (number of acres burned, number of wildfires compared to

average, people displaced, etc.), increase in firefighting personnel, state of emergency during periods of high fire danger, closure of roads land due to fire occurrence or risk.

Plants and Wildlife: Drought impacts associated with unmanaged plants and wildlife, fisheries, forests, and other fauna. Examples of drought-induced impacts on plants and wildlife include: loss of biodiversity of plants or wildlife; loss of trees from rural or urban landscapes, shelterbelts, or wooded conservation areas; reduction and degradation of fish and wildlife habitat; lack of feed and drinking water; greater mortality due to increased contact with agricultural producers, as animals seek food from farms and producers are less tolerant of the intrusion; disease; increased vulnerability to predation (from species concentrated near water); migration and concentration (loss of wildlife in some areas and too many wildlife in other areas); increased stress to endangered species; salinity levels affecting wildlife, wildlife encroaching into urban areas, loss of wetlands.

Relief, Response, and Restrictions: Drought effects associated with disaster declarations, aid programs, requests for disaster declaration or aid, water restrictions, fire restrictions. Impacts include: Disaster declarations, aid programs, USDA Secretarial disaster declarations, Small Business Association disaster declarations, government relief and response programs, state-level declarations, county-level declarations, a declared "state of emergency," requests for declarations or aid, non-profit organization-based relief, water restrictions, fire restrictions, declaration of drought watches or warnings.

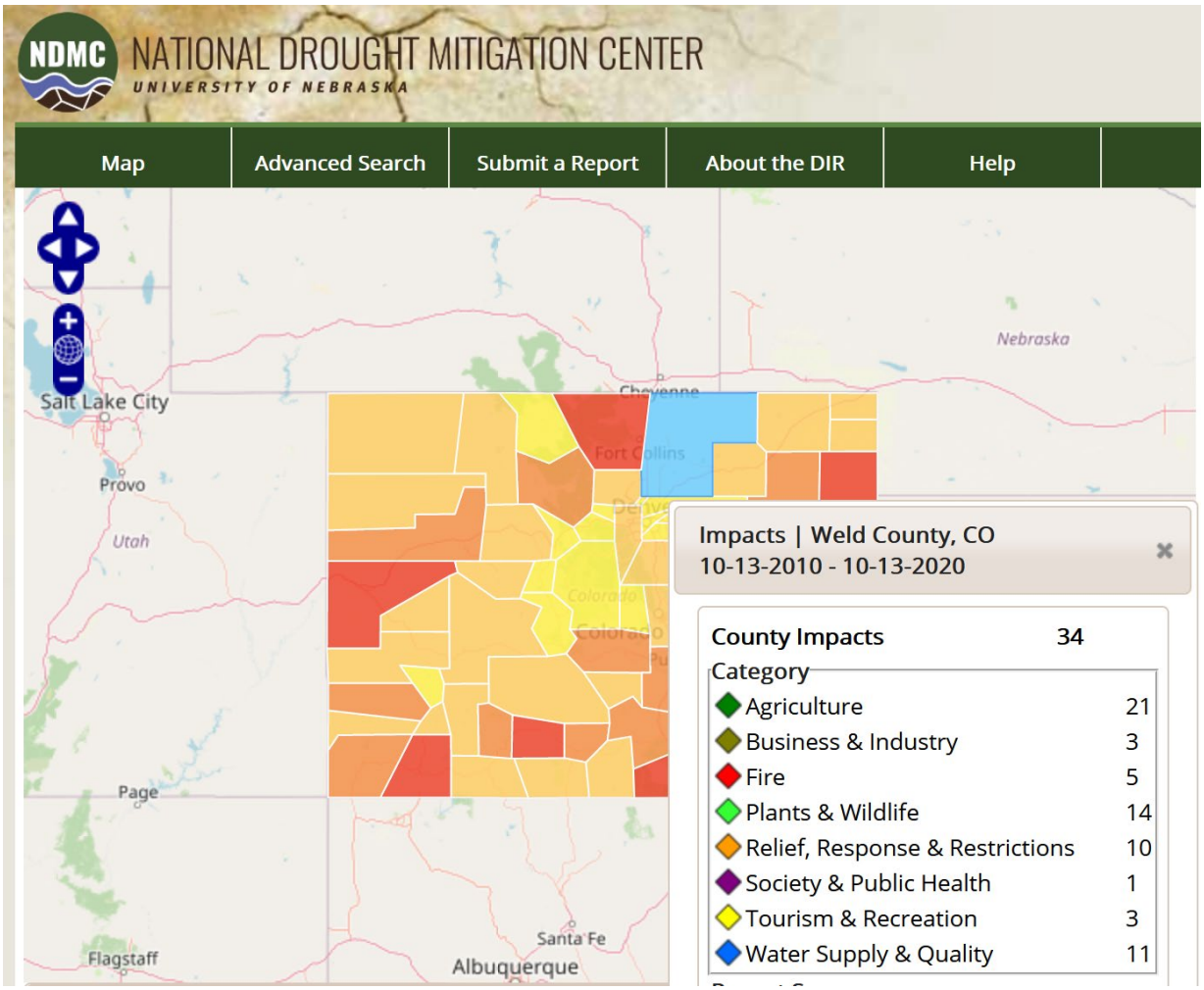
Society and Public Health: Drought effects associated with public and human health. Examples of drought-induced social impacts include: health-related problems related to reduced water quantity and/or quality, such as increased concentration of contaminants; loss of human life (e.g., from heat stress); increased respiratory ailments; increased disease caused by wildlife concentrations; population migration (rural to urban areas, migrants into the United States); loss of aesthetic values; change in daily activities (non-recreational, like putting a bucket in the shower to catch water), elevated stress levels, meetings to discuss drought, communities creating drought plans, lawmakers altering penalties for violation of water restrictions, demand for higher water rates, cultural/historical discoveries from low water levels, cancellation of fundraising events, cancellation/alteration of festivals or holiday traditions, stockpiling water, public service announcements and drought information websites, protests.

Tourism and Recreation: Drought effects associated with recreational activities and tourism. Examples of drought-induced tourism and recreation impacts include: water access or navigation problems for recreation; bans on recreational activities; reduced license, permit, or ticket sales (e.g. hunting, fishing, ski lifts, etc.); losses related to curtailed activities (e.g. bird watching, hunting and fishing, boating, etc.); reduced park visitation; delayed opening for ski resorts; increase in artificial snow generation; cancellation or postponement of sporting events.

Water Supply and Quality: Drought effects associated with water supply and water quality. Examples of drought-induced water supply and quality impacts include: Dry wells, water restrictions, changes in water rates, easing of water restrictions, increase in requests for new well permits, changes in water use due to water restrictions, greater water demand, decrease in water allocation or allotments, installation or alteration of water pumps or water intakes, changes to allowable water contaminants, water line damage or repairs due to drought stress, drinking water turbidity, change in water color or odor, declaration of drought watches or warnings, mitigation activities.

Based on data collected by the National Drought Mitigation Center (NDMC), the state-wide impact assessment, Weld County has recorded major impacts from drought since 1935.[4] Figure 38 summarizes these impacts over the last decade. A majority of the impacts affect agriculture, with other common impacts focused on: plants & wildlife; relief, response, & restrictions; and water supply & quality.

Figure 38. Weld County Drought Impacts (2010-20)



Source: NDMC Drought Impact Reporter

The National Oceanic and Atmospheric Administration Paleoclimatology Program studies drought by analyzing records from tree rings, lake and dune sediments, archaeological remains, historical documents, and other environmental indicators to obtain a broader picture of the frequency of droughts in the United States. According to their research, "paleoclimatic data suggest that droughts as severe as the 1950's drought have occurred in central North America several times a century over the past 300-400 years, and thus we should expect (and plan for) similar droughts in the future. The paleoclimatic record also indicates that droughts of a much greater duration than any in the 20th century have

[4] 2018 Colorado Drought Mitigation and Response Plan

occurred in parts of North America as recently as 500 years ago." Based on this research, the 1950's drought situation could be expected approximately once every 50 years or a 20% chance every ten years. An extreme drought, worse than the 1930's "Dust Bowl," has an approximate probability of occurring once every 500 years or a 2% chance of occurring each decade.[5] A 500-year drought with a magnitude similar to that of the 1930's that destroys the agricultural economy and leads to wildfires is an example of a high magnitude event.

5.9.3 Data Analytics

Drought was not utilized as an input into the composite risk layer due to the hazards lack of geographic variability.

5.9.4 Inventory Exposed

Drought typically does not have a direct impact on structures and infrastructure, though certain Lifelines can be affected. Lifelines impacted by drought include Food / Water, with indirect impacts to Health & Medical, and Safety & Security. Drought conditions evolve slowly over time and communities typically have ample time to prepare for the effects. Should a drought affect the water available for public water systems or individual wells, the availability of clean drinking water could be compromised. This situation would require emergency actions and could possibly overwhelm the local government and financial resources.

Impacts from drought can include the following:

- Economic losses to agricultural producers (crops and livestock)
- Physical and mental health issues
- Water supply interruption for business and industry
- Water quality problems
- Reduced soil and vegetation moisture
- Vegetation mortality, insect infestations
- Impacts to fish and wildlife populations
- Increase in wildland fires and associated losses

5.9.5 Potential Losses

Possible losses/impacts to facilities include the loss of critical function due to low water supplies. Severe droughts can negatively affect drinking water supplies. Should a public water system be affected, the losses could total into the millions of dollars if outside water is shipped in. Private springs/wells could also dry up. Possible losses to infrastructure include the loss of potable water.

Although drought events rarely pose immediate risks to public health, they can impact local public health in numerous ways. Examples of drought-induced public health impacts include: increased respiratory ailments due to increased particulate matter in the air; sickness due to decreased availability of clean water; increased disease caused by wildlife concentrations; population migrations (rural to urban areas); loss of human life (e.g. from heat stress, suicides); and impacts on behavioral health (due to unemployment in the agricultural sector, stress on the tourism and other businesses related to the natural environment and/or water).

[5] National Oceanic and Atmospheric Administration, 2003

The impacts of drought on local vegetation and wildlife can include death from dehydration and spread of invasive species or disease because of stressed conditions. In general, environmental impacts from drought are more likely at the interface of the human and natural world. The loss of crops or livestock due to drought can have far-reaching economic effects on communities, wind and water erosion can alter the visual landscape, and dust can damage property. Water-based recreational resources are also heavily affected by drought conditions. Indirect impacts from drought arise from wildfire, which may have additional effects on the landscape and sensitive resources such as historic or archeological sites.

Due to the nature of drought, all jurisdictions within Weld County are expected to experience similar physical impacts from drought conditions. However, local communities with large agricultural, livestock, and tourism-based economies are expected to bear the brunt of drought effects in the county.

5.9.6 Probability of Future Occurrences

Due to the nature of drought, it is an extremely difficult hazard to predict. However, identifying various indicators of drought, and tracking these indicators, provides a crucial means of monitoring drought. Additionally, understanding the historical frequency, duration, and spatial extent of drought assists in determining the likelihood and potential severity of future droughts. The characteristics of past droughts provide benchmarks for projecting similar conditions into the future. The probability of Weld County and its municipalities experiencing a drought event can be difficult to quantify. However, based on historical record of 7 drought-related USDA Secretarial Disasters affecting Weld County between 2006 and 2020, this type of event has occurred once every 2 years.

Historic frequency suggests that there is a 50% chance of this type of event occurring each year. The Colorado Climate Report, published by the Colorado Water Conservation Board (CWCB), include climate models that project Colorado will warm by 2.5°F by 2025 and 4°F by 2050, relative to the 1950-99 baseline. If these projections are accurate, changes in the quantity and quality of water are likely to occur due to warming, even in the absence of precipitation changes.

5.9.7 Land Use and Development

Society's vulnerability to drought is affected largely by population growth, urbanization, demographic characteristics, technology, water use trends, government policy, social behavior, and environmental awareness. These factors are continually changing, and society's vulnerability to drought may rise or fall in response to these changes. For example, increasing and shifting populations puts increasing pressure on water and other natural resources—more people need more water.

Future development greatly impacts drought hazards by stressing both surface and ground water resources. Agricultural and industrial water users consume large amounts of water. Expansion of water-intensive enterprises is limited in a time when water resources are strained. In rapidly growing communities, new water and sewer systems or significant well and septic sites could use up more of the water available, particularly during periods of drought. Public water systems are monitored, but individual wells and septic systems are not as strictly regulated. Therefore, future development could have a profound impact on the vulnerability of Weld County communities to drought.

Related to both current land use and future development trends, the use of turf grass affects the available water supplies. Maintaining lush, green lawns in the semi-arid climate of the Front Range requires large amounts of water. Urban lawn watering is the single largest water demand on most municipal supplies. Outdoor water use accounts for about 55 percent of the residential water use in the

Front Range urban area, most of which is used on turf. [6] Residential and commercial landscaping can greatly impact future drought events and future water use regulations may be able to mitigate this trend.

As Weld County continues to grow, it will consider practical guidelines for determining the impacts of drought such as measuring the economic value of water in alternative uses and objective methods for quantifying non-market impacts of drought on those uses. Additionally, Weld County will consider guidance found within the State of Colorado's Multi-Hazard Mitigation Plan as well as the Colorado Drought Mitigation and Response Plan.

[6] http://www.ext.colostate.edu/pubs/consumer/09952.html

5.10 Earthquake

LOW RISK HAZARD

5.10.1 Hazard Identification

An earthquake is the motion or trembling of the ground produced by sudden displacement of rock usually within the upper 10 – 20 miles of the Earth's crust. Earthquakes can affect hundreds of thousands of square miles, cause damage to property measured in the tens of billions of dollars, result in loss of life and injury to hundreds of thousands of people, and disrupt the social and economic functioning of the affected area. Most property damage and earthquake-related deaths are caused by the failure and collapse of structures due to ground shaking which is dependent upon amplitude and duration of the earthquake.

Regardless of the source of the earthquake, the associated energy travels in waves radiating outward from the point of release. When these waves travel along the surface, the ground shakes and rolls, fractures form, and water waves may be generated. Earthquakes generally last a matter of seconds but the waves may travel for long distances and cause damage well after the initial shaking at the point of origin has subsided.

Breaks in the crust associated with seismic activity are known as "faults" and are classified as either active or inactive. Faults may be expressed on the surface by sharp cliffs or scarps or may be buried below surface deposits.

"Foreshocks," minor releases of pressure or slippage, may occur months or minutes before the actual onset of the earthquake. "Aftershocks," which range from minor to major, may occur for months after the main earthquake. In some cases, strong aftershocks may cause significant additional damage, especially if the initial earthquake impacted emergency management and response functions or weakened structures.

The damage associated with each earthquake is subject to four primary variables:

Seismic Activity: The properties of earthquakes vary greatly from event to event. Some seismic activity is localized (a small point of energy release), while other activity is widespread (e.g., a major fault shifting or slipping all at once). Earthquakes can be very brief (only a few seconds) or last for a minute or more. The depth of release and type of seismic waves generated also play roles in the nature and location of damage; shallow quakes will hit the area close to the epicenter harder, but tend to be felt across a smaller region than deep earthquakes.

Geology and Soils: The surface geology and soils of an area influence the propagation (conduction) of seismic waves and how strongly the energy is felt. Generally, stable areas (e.g., solid bedrock) experience less destructive shaking than unstable areas (e.g., fill soils). The siting of a community or even individual buildings plays a strong role in the nature and extent of damage from an event**.**

Development: An earthquake in a densely populated area which results in many deaths and considerable damage may have the same magnitude as a shock in a remote area that has no direct impacts. Large magnitude earthquakes that occur beneath the oceans may not even be felt by humans.

Time of Day: The time of day of an event controls the distribution of the population of an affected area. On work days, the majority of the community will transition between work or school, home, and

the commute between the two. The relative seismic vulnerability of each location can strongly influence the loss of life and injury resulting from an event.

Additional damages from an earthquake can stem from the following processes:

Shaking: During minor earthquake events, objects often fall from shelves and dishes rattle. In major events, large structures may be torn apart by the forces of the seismic waves. Structural damage is generally limited to older structures that are poorly maintained, poorly constructed, or improperly (or not) designed for seismic events. Un-reinforced masonry buildings and wood frame homes not anchored to their foundations are typical victims of earthquake damage.

Loose or poorly secured objects also pose a significant hazard when they are loosened or dropped by shaking. These "non-structural falling hazard" objects include bookcases, heavy wall hangings, and building facades. Home water heaters pose a special risk due to their tendency to start fires when they topple over and rupture gas lines. Crumbling chimneys may also be responsible for injuries and property damage.

Dam and bridge failures are significant risks during stronger earthquake events, and due to the consequences of such failures, may result in considerable property damage and loss of life. In areas of severe seismic shaking hazard, shaking Intensity levels of VII or higher (see Table 38) can be experienced even on solid bedrock. In these areas, older buildings especially are at significant risk.

Ground Displacement: Ground displacement can also occur due to shaking, resulting in similar damages as mentioned previously.

Landslides: Even small earthquake events can cause landslides. Rock falls are common as unstable material on steep slopes is shaken loose, but significant landslides or even debris flows can be generated if conditions are ripe. Roads may be blocked by landslide activity, hampering response and recovery operations.

Liquefaction and Subsidence: Soils may liquefy and/or subside when impacted by the seismic waves. Fill and previously saturated soils are especially at risk. The failure of the soils has the potential to cause widespread structural damage. The oscillation and failure of the soils may result in increased water flow and/or failure of wells as the subsurface flows are disrupted and sometimes permanently altered. Increased flows may be dramatic, resulting in geyser-like water spouts and/or flash floods. Similarly, septic systems may be damaged creating both inconvenience and health concerns.

Seiches: Seismic waves may rock an enclosed body of water (e.g., lake or reservoir), creating an oscillating wave referred to as a "seiche." Although not a common cause of damage in past Colorado earthquakes, there is a potential for large, forceful waves similar to a tsunami ("tidal waves") to be generated on the large reservoirs within and neighboring Weld County. Such a wave would be a hazard to shoreline development and pose a significant risk on dam-created reservoirs. A seiche could either overtop or damage a dam leading to downstream flash flooding.

The impact an earthquake event has on an area is typically measured in terms of earthquake intensity. Intensity is most commonly measured using the Modified Mercalli Intensity (MMI) Scale based on direct and indirect measurements of seismic effects.

Another way to express an earthquake's severity is to compare its acceleration to the normal acceleration due to gravity. Peak ground acceleration (PGA) measures the strength of ground movements in this manner. PGA represents the rate in change of motion of the earth's surface during

an earthquake as a percent of the established rate of acceleration due to gravity. PGA can be partly determined by what soils and bedrock characteristics exist in the region. Unlike the MMI, PGA is not a measure of the total energy released by an earthquake, but rather of how hard the earth shakes at a given geographic area (the intensity). PGA is measured by using instruments including accelerographs and correlates well with the Mercalli scale. A detailed description of the Modified Mercalli Intensity Scale is shown in the following table.

Table 38. Modified Mercalli Intensity Scale

SCALE	INTENSITY	DESCRIPTION OF EFFECTS	PGA (g)	RICHTER SCALE MAGNITUDE
I	Instrumental	Detected only on seismographs	< 0.0017	< 4.2
II	Feeble	Some people feel it	0.0018 – 0.014	
III	Slight	Felt by people resting; like a truck rumbling by		
IV	Moderate	Felt by people walking	0.015 – 0.039	
V	Slightly Strong	Sleepers awake; church bells ring	0.040 – 0.092	< 4.8
VI	Strong	Trees sway; suspended objects swing; objects fall off shelves	0.093 – 0.18	< 5.4
VII	Very Strong	Mild alarm, walls crack, plaster falls	0.19 – 0.34	< 6.1
VIII	Destructive	Moving cars uncontrollable, masonry fractures, poorly constructed buildings damaged	0.34 – 0.65	< 6.9
IX	Ruinous	Some houses collapse, ground cracks, pipes break open	0.65 – 1.24	
X	Disastrous	Ground cracks profusely, many buildings destroyed, liquefaction and landslides widespread	> 1.24	< 7.3
XI	Very Disastrous	Most buildings and bridges collapse, roads, railways, pipes and cables destroyed, general triggering of other hazards	> 1.24	< 8.1
XII	Catastrophic	Total destruction, trees fall, ground rises and falls in waves	> 1.24	> 8.1

Studies indicate that there are about 100 potentially active fault lines in Colorado. Over 500 earthquake tremors of magnitude 2.5 or higher have been recorded across the state since 1870. It is likely that more earthquakes of similar magnitude occurred during that time, but were not recorded due to low population densities and limited coverage of sensors across most of the State. For comparison, over 20,500 similarly sized events have been recorded in the State of California since 1870.

Relative to other western states, Colorado's earthquake risk is higher than Kansas or Oklahoma, lower than Utah, and much lower than Nevada and California (Colorado OEM, 2003). Despite Colorado's lower earthquake risk, based on geologic observations and characteristics of faults located in the region, seismologists predict that Colorado will indeed experience a magnitude 6.5 earthquake at some point in the future.

Future earthquakes are assumed to be likely to occur where earthquakes have produced faults in the geologically recent past. Quaternary faults are faults that have slipped in the last 1.8 million years and it is widely accepted that they are the most likely source of future large earthquakes. For this reason, quaternary faults are used to make fault sources for future earthquake models.

5.10.2 Previous Occurrences

Earthquakes are relatively infrequent in Colorado and records of historical earthquakes in and around Weld County are limited. The following Table provides a list of Colorado's larger earthquakes recorded since 1870.

Table 39. Notable Earthquake Events in Colorado (1870 – 2020)

Date	Location	Magnitude	Intensity
1870	Pueblo/Ft. Reynolds		VI
1871	Lily Park, Moffat County		VI
1880	Aspen		VI
1882	North central Colorado	6.6*	VII
1891	Axial Basin (Maybell)		VI
1901	Buena Vista		VI
1913	Ridgeway Area		VI
1944	Montrose/Basalt		VI
1955	Lake City		VI
1960	Montrose/Ridgeway	5.5	V
1966	NE of Denver	5.0	V
1966	CO-NM border, near Dulce, NM	5.5	VII
1967	NE Denver	5.3	VII
1967	NE Denver	5.2	VI
2011	Southwest of Trinidad	5.3	VIII

**Estimated, based on historical felt reports*

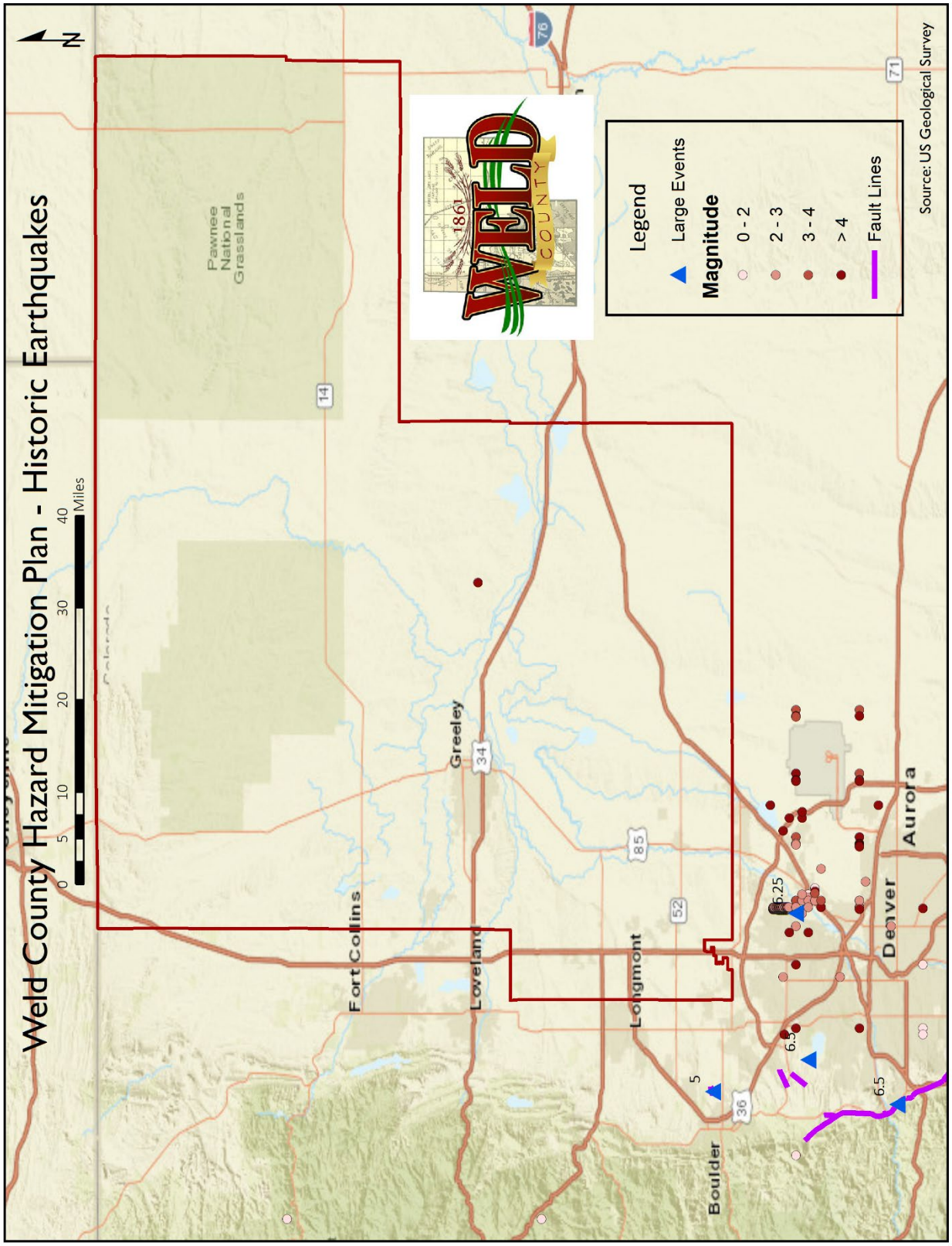
Source: Colorado Geological Survey

The most economically damaging earthquake in Colorado's history occurred on August 9th, 1967 in the Denver metro area. The 5.3 magnitude earthquake caused more than a million dollars of damage in Denver and the northern suburbs. That earthquake was followed by an earthquake of magnitude 5.2 three months later in November 1967. Although these two earthquake events cannot be classified as

"major earthquakes" they are significant because of their location along the Front Range Urban Corridor, an area where nearly 75 percent of Colorado residents and many Lifelines are located. Historically, earthquake risk in Colorado has been rated lower than most subject experts consider justified. It is critically important that local emergency managers in and around Weld County become fully aware of the size and consequences of an earthquake that could occur.

Figure 39 presents the locations of historical earthquakes around Weld County. Many of the larger events in the Region have occurred within miles of the County's Southern boundary.

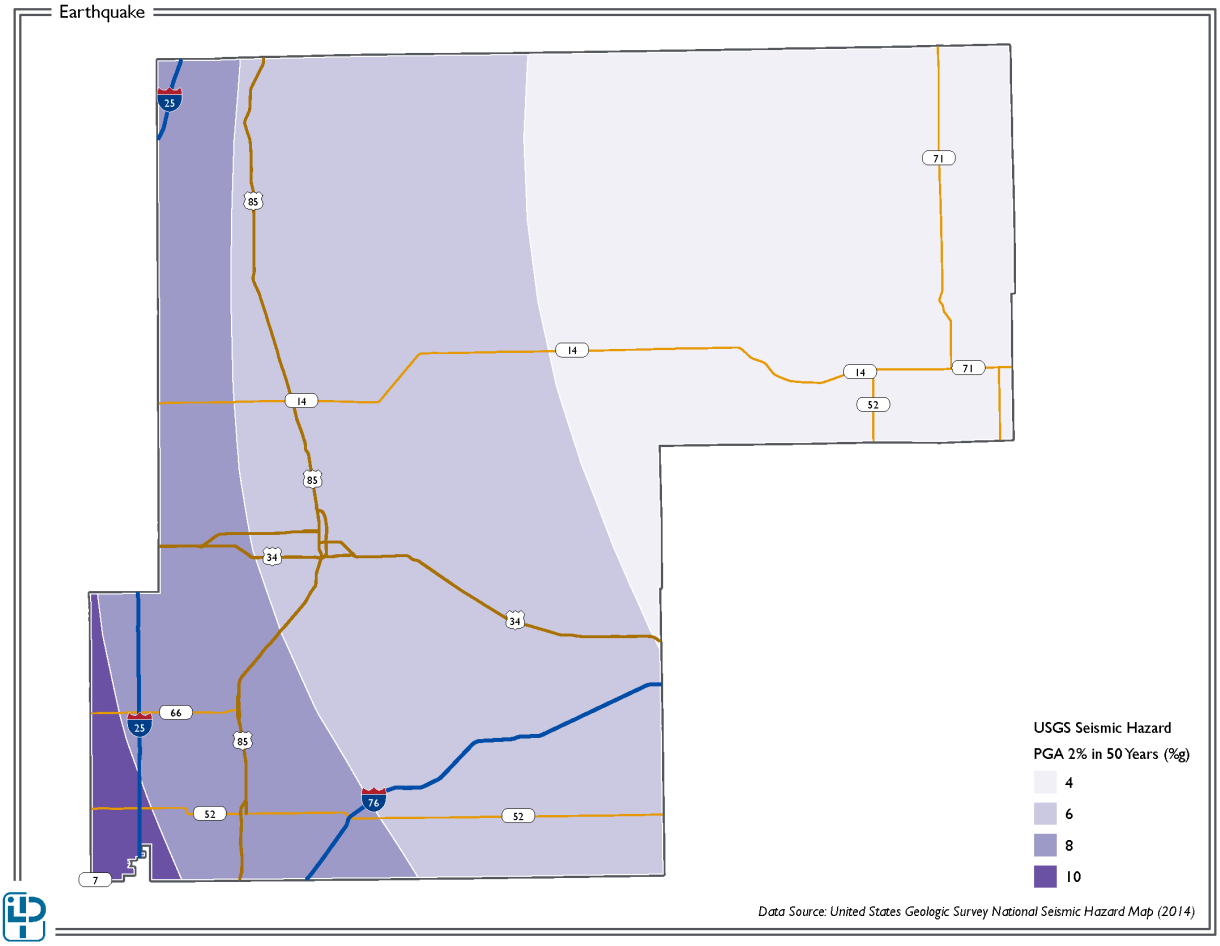
Figure 39. Historical Earthquakes



5.10.3 Data Analytics

The input into the composite risk layer developed with the data analytics suitability model for earthquake is shown in Figure 40.

Figure 40. Composite Risk Layer Earthquake Input



5.10.4 Inventory Exposed

The most appropriate risk assessment methodology for seismic hazards involves scenario modeling using FEMA's Hazus loss estimation software. Hazus is a very useful planning tool because it provides an acceptable means of forecasting earthquake damage, loss of function of infrastructure, and casualties, among many other factors.

Utilizing Hazus 4.2, an updated earthquake analyses was conducted for Weld County. The Hazus earthquake scenario modeled a magnitude 6.5 probabilistic event using a 2,500 year return period. This return period equates to a 2% probability of occurrence in 50 years and is the return period used by the International Building Code as the basis for seismic building design. This scenario was used because it represents the "worst case scenario" for Weld County communities.

According to the Hazus inventory, there are an estimated 90,000 buildings in Weld County with a total building replacement value (excluding contents) of over $23 Billion. Approximately 92% of the buildings (and 82% of the building value) are associated with residential housing.

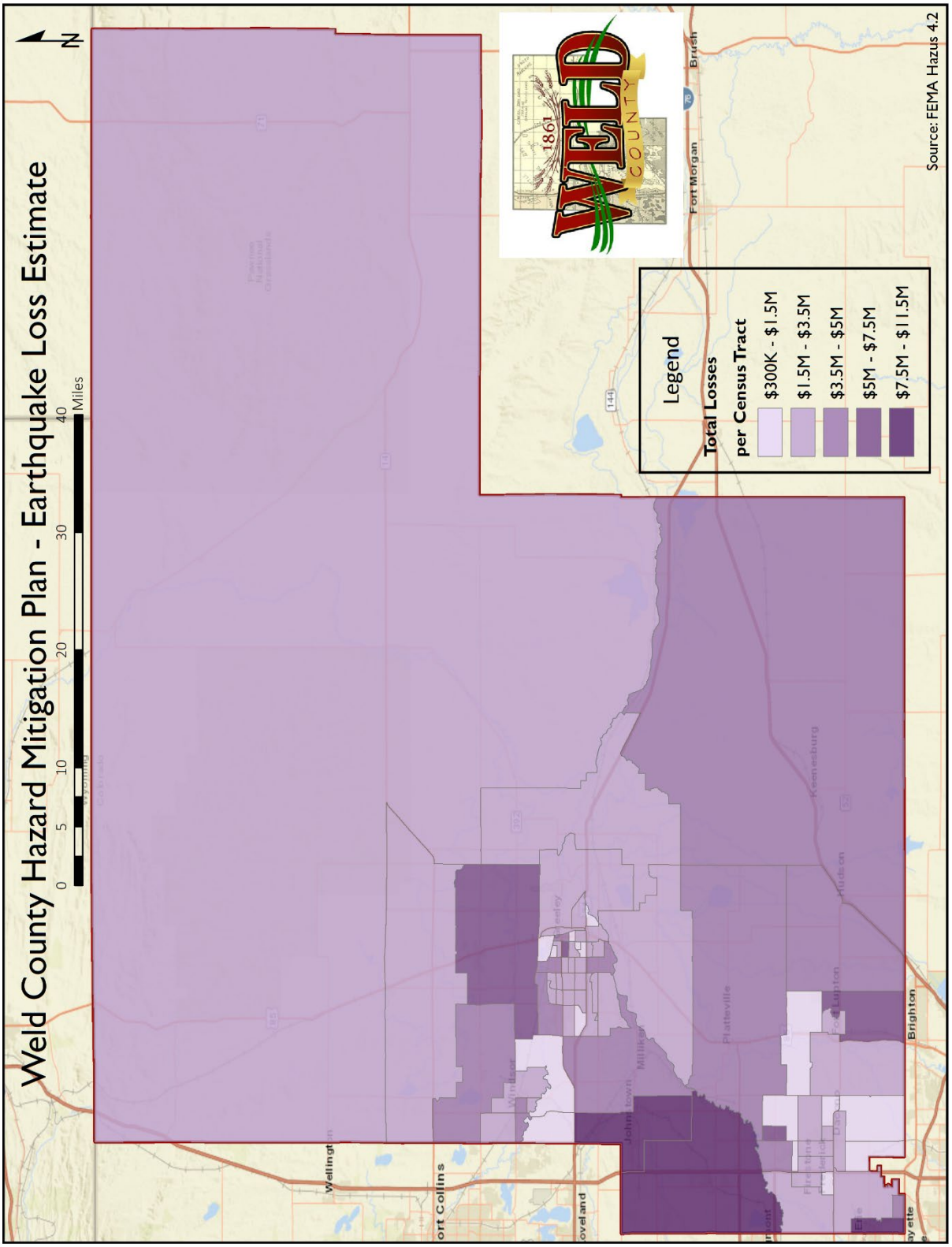
5.10.5 Potential Losses

In Colorado, earthquakes are considered low probability, high-consequence events. Although earthquakes may occur infrequently, they can have devastating impacts. Ground shaking can lead to the collapse of buildings and bridges and disruptions to other Lifelines. Deaths, injuries, and extensive property damage are possible vulnerabilities from this hazard. Some secondary hazards caused by earthquakes may include fire, hazardous material release, landslides, flash flooding, seiches, and dam failure. Moderate and even very large earthquakes are inevitable, although very infrequent, in areas of normally low seismic activity. Consequently, buildings in these regions are seldom designed to deal with an earthquake threat; therefore, they are extremely vulnerable.

Most property damage and earthquake-related injuries and deaths are caused by the failure and collapse of structures due to ground shaking. The level of damage depends upon the amplitude and duration of the shaking, which are directly related to the earthquake size, distance from the fault, site, and regional geology.

Figure 41 details the estimated total economic losses based upon the modeled 6.5 event. The Hazus tool performs its earthquake analysis at the Census Tract level. In Weld County, the largest losses are expected to occur in Greeley and the surrounding areas. This is caused by the higher population densities in these areas, coupled with the age and type of building stocks present across those communities. A number of variables are included in Hazus analyses in order to arrive at the estimated values of loss. For this reason, it is important to note that the Hazus loss estimates detailed below should not be used as a precise measure, but rather viewed from the perspective of the potential magnitudes of expected losses.

Figure 41. Hazus Earthquake Estimated Losses



Other loss estimates from the Hazus scenario to point out include:

- The vast majority of damages are expected to affect residential housing.
- Unreinforced masonry structures will experience ~70% of the collective expected complete building damages.
- No major damages are modeled for any "Essential Facilities", which includes: hospitals, schools, fire and police stations, and EOCs.
- No major damages are expected to any transportation systems or utility facilities, though a number of water utility pipeline leaks and breaks are anticipated.
- 61,000 tons of debris are expected to be generated from this type of event.
- Only 56 households are modeled as being displaced by this event.

For additional loss estimates and further details see Appendix C: Earthquake Hazus Risk Report.

5.10.6 Probability of Future Occurrences

Even though the seismic hazard risk in Weld County is low to moderate, it is likely that earthquakes will occur in the County in the future. It is reasonable to expect future earthquakes as large as magnitude 6.5, the largest event on record in Colorado. Calculations based on the historical earthquake records and geological evidence of recent fault activity suggest that an earthquake of magnitude 6 or greater may be expected somewhere in Colorado every several centuries.

Ultimately, the probability of an earthquake occurring in Weld County is low. Additionally, if an earthquake were to occur in the near future it is likely to be of a low magnitude, with expected damages to property and people to be minimal. History has shown, however, that Weld County and Colorado are at risk to a larger magnitude seismic event. Should that type of event occur, major damages and losses should be expected. This fact makes these low probability, high impact hazards a challenge to deal with when planning a mitigation strategy to combat all hazards faced by a community.

5.10.7 Land Use and Development

With the unpredictable nature of earthquake epicenter locations, it is not feasible to identify specific areas where development may exacerbate the risk to an earthquake. It should be assumed that all development increases the risk to the County from the threat of earthquakes. As population and development continue to expand in Weld County, continued enforcement of the unified construction code has great potential to mitigate increasing vulnerability and development pressure.

Due to the nature of earthquake hazards, areas in Weld County with high population densities and large numbers of structures and Lifelines are expected to experience greater damage and loss from an earthquake event. This includes jurisdictions located primarily in the central western and southwestern portion of the county, such as:

- Greeley
- Windsor
- Johnstown
- Evans
- Fort Lupton

Communities located in the eastern part of the County, may experience differential impacts from an earthquake event if transportation or utility infrastructure is damaged and prevents communities from responding or evacuating.

Standard building codes have the opportunity to provide Weld County with reasonable guidance for development throughout unincorporated and incorporated areas. Contractors and builders should be aware of applicable codes and regulations designed to reduce losses sustained by new and existing construction due to seismic hazards.

As development grows in the County and its municipalities, it will be important for citizens to consult with local building codes as modern building codes generally require seismic design elements for new construction.

5.11 Extreme Temperatures

MODERATE RISK HAZARD

5.11.1 Hazard Identification

Extreme temperatures pose a risk to all Weld County communities and include the ranges on the far ends of a thermometer, exceptionally cold or extraordinarily hot. These temperatures can lead to crop or property damage and in the worst cases injuries or death of community members. The impacts of extreme cold and extreme heat differ, but are immediate and can be long lasting.

Extreme Cold

Weld County has relatively mild temperatures throughout the year, which do not vary much across the County geography. Winter temperature averages fall between 40-50°F highs and 15-25°F lows, between November and February. Winters on the eastern plains are typically dry, cold, and windy. Although snowfall is usually light, winter blizzards do affect Weld County residents.

Hazardous cold temperatures are those that drop well below what is considered normal for an area during the winter months. Windchill temperature is a critical factor in deciding the safety of the outside weather. Windchill is how cold people or animals feel outside and is based on the rate of heat loss from exposed skin to wind and cold. Windchill is calculated from wind speed and the outdoor temperature. As the wind increases, it draws heat from the body, driving down skin temperature and eventually the internal body temperature. These temperatures can be life threatening to people and animals exposed for extended periods of time.

The elderly, young children, people with mobility issues, those with independent living difficulty, low income families, and those experiencing homelessness are the most likely to suffer the negative effects of extreme cold.

The Wind Chill Chart (Figure 42) from the National Weather Service illustrates the effect of wind speeds on temperatures. The chart shows the actual air temperature and based on the effect of wind speed, what the perceived temperature is. The data also includes the amount of time until frostbite occurs.

Figure 42. Wild Chill Chart

Wind Chill Chart

Wind (mph)	Temperature (°F)																	
Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98

Frostbite Times: 30 minutes, 10 minutes, 5 minutes

$$\text{Wind Chill (°F)} = 35.74 + 0.6215T - 35.75(V^{0.16}) + 0.4275T(V^{0.16})$$

Where, T= Air Temperature (°F) V= Wind Speed (mph)

Effective 11/01/01

The National Weather Service issues alerts when weather conditions may be dangerous. The following table explains the specific circumstances for an alert to be issued.

Table 40. National Weather Service Wind Chill Alert

Advisory	Description
Wind Chill Watch	There is a chance that wind chill temperatures will decrease to at least 24°F below zero during the next 24 to 48 hours.
Wind Chill Advisory	The wind chill conditions could be life threatening if action is not taken. The expected wind chill readings will be between 15°F to 24°F below zero.
Wind Chill Warning	Wind chill readings are life threatening. Expected readings of 25°F below zero or lower.

Source: National Weather Service

Table 41. Extreme Cold Illnesses

Condition	Description	Symptoms
Frost Bite	Frostbite is caused by freezing, resulting in a loss of feeling and color in the affected areas. It most often affects the nose, ears, cheeks, chin, fingers, or toes. Frostbite can permanently damage body tissues	Reduced blood flow to hands and feet Numbness, Tingling or stinging, Aching Bluish or pale, waxy skin
Hypothermia	Abnormally low body temperature which affects the brain, making the victim unable to think clearly or move well. Particularly dangerous because a person may not know it is happening and will not be able to do anything about it.	Shivering, Fatigue, Blue skin Loss of coordination Confusion and disorientation Dilated pupils Slowed pulse and breathing Loss of consciousness

Source: Centers for Disease Control

Extreme Heat

Weld County see its highest temperatures between June and August. Summer temperature averages fall between 80-90°F highs and 50-60°F lows. Extreme heat events are most common between June and August, when above average temperatures are sustained for an extended period, but events may occur in May or September, as well.

Extreme heat criteria vary based on the average high temperature for a region. A heat wave is described as extreme high temperatures for at least two days and prolonged exposure to the heat can lead to illness and possibly death. While rare in Weld County, high humidity during heat waves makes the effects of heat more harmful.

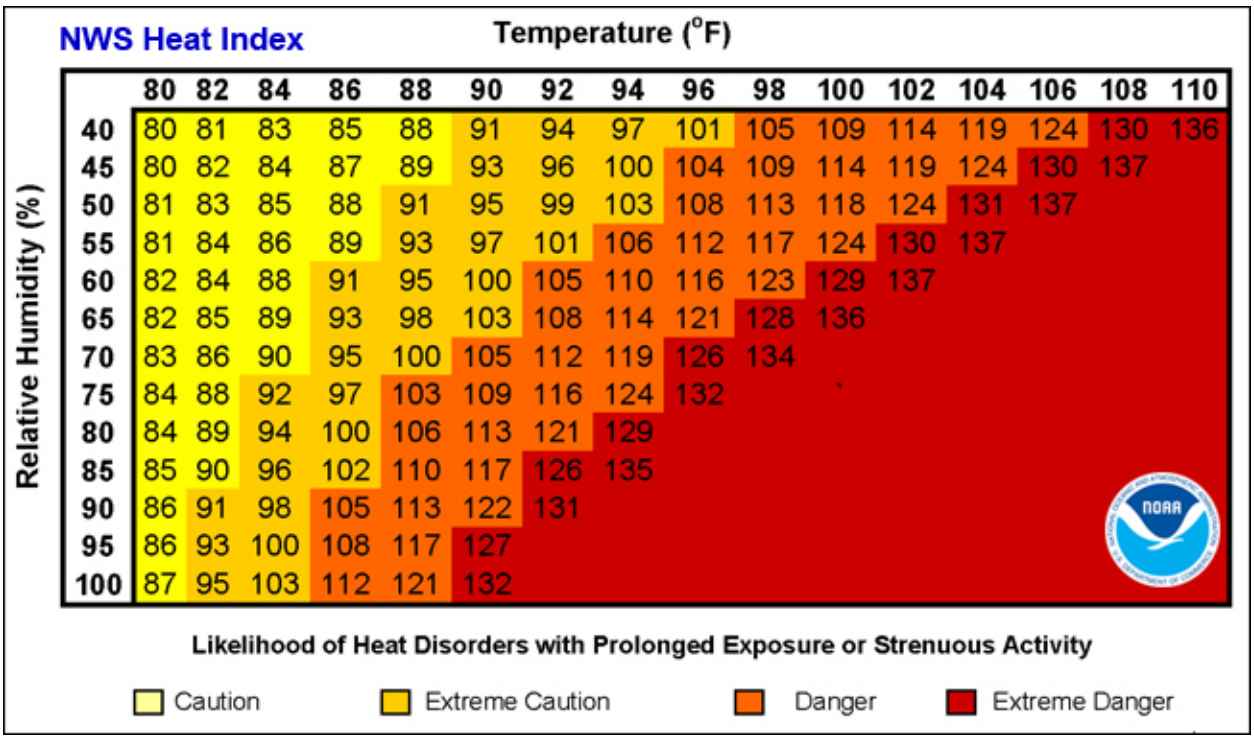
Extreme heat events are a considerable public health concern and heat is the primary weather-related cause of death in the United States. Especially susceptible are young children, the elderly, people with mobility issues, those with independent living difficulty, low income families, outdoor laborers and those experiencing homelessness.

During extreme heat events, individuals can suffer a variety of health problems, including heatstroke, heat exhaustion, heat syncope, and heat cramps. Heat-related illness and death can occur from exposure to intense heat in one afternoon, however, heat stress on the body has a cumulative effect.

The National Weather Service Heat Index (Figure 43) measures the severity of hot weather by estimating how hot it feels to humans. By combining air temperature and relative humidity, the Heat Index is directly related to skin temperature. The index includes classification of how dangerous exposure and strenuous activity can be based on the temperature range.

It is worth noting heat index values were devised for shady, light wind conditions and exposure to full sunshine can increase heat index values by up to 15°F. Also, strong winds, particularly with very hot, dry air, can be extremely hazardous.

Figure 43. National Weather Service Heat Index



Relative Humidity (%)	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
55	81	84	86	89	93	97	101	106	112	117	124	130	137			
60	82	84	88	91	95	100	105	110	116	123	129	137				
65	82	85	89	93	98	103	108	114	121	128	136					
70	83	86	90	95	100	105	112	119	126	134						
75	84	88	92	97	103	109	116	124	132							
80	84	89	94	100	106	113	121	129								
85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127										
100	87	95	103	112	121	132										

Source: National Weather Service

The National Weather Service issues alerts when weather conditions may be dangerous. The following table explains the specific circumstances for an alert to be issued.

Table 42. National Weather Service Heat Alerts

Alert	Description
Excessive Heat Warning	Issued within 12 hours of onset of extremely dangerous conditions. Criteria vary across the country, but in general warning is issued when the maximum heat index temperature is expected to be 105°F or higher for at least 2 days and nighttime air temperatures will not drop below 75°F.
Excessive Heat Watch	Issued when conditions are favorable for an excessive heat event in the next 24 to 72 hours. Used when the risk of a heat wave has increased but its occurrence and timing is still uncertain.

Source: National Weather Service

Table 43 holds explanations of the most dangerous illnesses related to heat exposure. For the safety of community members, it is important to understand that not all heat-related illness occurs during extreme event conditions and it is critical to recognize the onset of a heat-related illness regardless of weather activity. Understanding the signs and symptoms can help to get medical care for a person as quickly as possible. Outside temperatures that may not seem dangerous can have negative effects on a variety of people, such as sports teams practicing outside and construction workers due to strenuous activity. Incredibly unfortunate incidents can happen when people and pets are left in cars or homes without air conditioning on what seems like a reasonable temperature day. Proper education about

heat illness and temperature fluctuations involves the understanding that extreme heat can come in a weather event, but illness and death can occur due to smaller scale temperature fluctuations.

Table 43. Heat Stress Illnesses

Condition	Description	Symptoms
Heat Exhaustion	Excessive loss of the body's water due to excessive sweating, typically. Most susceptible are the elderly, those with high blood pressure and those work in a hot environment.	Headache, Nausea, Dizziness, Weakness, Irritability, Thirst, Heavy sweating, Elevated body temperature
Heat Stroke	The most serious of heat-related illness, can be fatal if treatment is delayed. Body temperature can rise to 106°F or higher within 10 to 15 minutes.	Confusion, slurred speech, Loss of consciousness (coma). seizures Hot, dry skin or profuse sweating Very high body temperature

Source: Centers for Disease Control

5.11.2 Previous Occurrences

Extreme Cold

Winter weather alerts go out to the region at least once a year and most of these warn about large amounts of snow and expected road conditions. In some cases, they will warn specifically about extreme cold dangers and discourage people from being outside for extended periods. Two recent storms were large enough to impact Weld County considerably, with dangerous roadways and extreme cold conditions that put the community at significant risk.

In March 2019, a bomb cyclone impacted large parts of the state, disrupting power, causing numerous multi-car accidents and stranding 1,500 motorists across the state. A bomb cyclone is a storm characterized by a large, rapid drop in barometric pressure over 24 hours and wind gusts between 60-100 mph. The impacts of the bomb cyclone in Weld County began with beneficial steady rainfall and progressed to 54 mph wind gusts, whipping snow across roadways and crops. With a midday high temperature of only 29°F the event brought windchill temperatures of 10°F and below. While only 4.1 inches of snow fell in Greeley during the March event other towns got up to 9 inches. An April storm which was predicted to be similar to the bomb cyclone, brought 10 inches of snow to Greeley. The April storm was milder in winds with only 36mph wind gusts and less barometric pressure change, but had windchill temperatures of around 10°F.

In January 2017, an unforecasted storm surprised Weld County residents with 6 inches of snow overnight. The storm continued to snow with accumulation between 6-12 inches across the county. With hazardous conditions of low visibility and icy roads on the I-25 corridor, the temperatures presented even more of a threat to motorists and residents. Low temperatures of -2°F and wind chill temperatures of -25°F created a dangerous extreme cold event

NOAA's National Center for Environmental Information (NCEI) storm database tracks historical cold weather conditions, which are categorized as winter weather, winter storm, blizzard or cold/windchill events.

- Winter weather is an event in which there is freezing rain or when 2-4 inches of snow (alone or in combination with sleet and freezing rain) is expected to cause inconvenience for community members.
- Winter storm is a weather event which has more than one significant hazard (a combination of two or more of the following: snow, heavy or blowing snow, ice or sleet) and meets or exceeds 12 and/or 24 hour local warning criteria for at least one of the precipitation elements. Normally a winter storm would pose a threat to life or property.
- A blizzard is a life-threatening event produced by a combination of falling or blowing snow, and high winds, typically 35 mph or more for a prolonged period of time. There is no temperature requirement that must be met to achieve blizzard conditions. This combination can create potentially deadly travel conditions with impassable roads and zero visibilities.
- Cold/wind chill events have periods of extremely low temperatures or wind chill temperatures reaching or exceeding locally/regionally defined warning criteria.

The NCEI database began in 1950, however, data for Weld County is only available beginning in 1996. The NCEI explains that this is due to adaptations in data collection and processing procedures over time. It can be logically assumed that Weld County had significant weather and extreme cold events prior to 1996. Unfortunately, the lack of data interferes with the ability to track changes and patterns longitudinally. Table 44 lists the significant winter weather and cold/wind chill events for Weld County, separated by type and grouped by decade. Listing the specific events in each year does not lend itself to creating a holistic picture of the number of events seen in Weld County over time.

Table 44. Cold Weather Events in Weld County (1996 – June 2020)

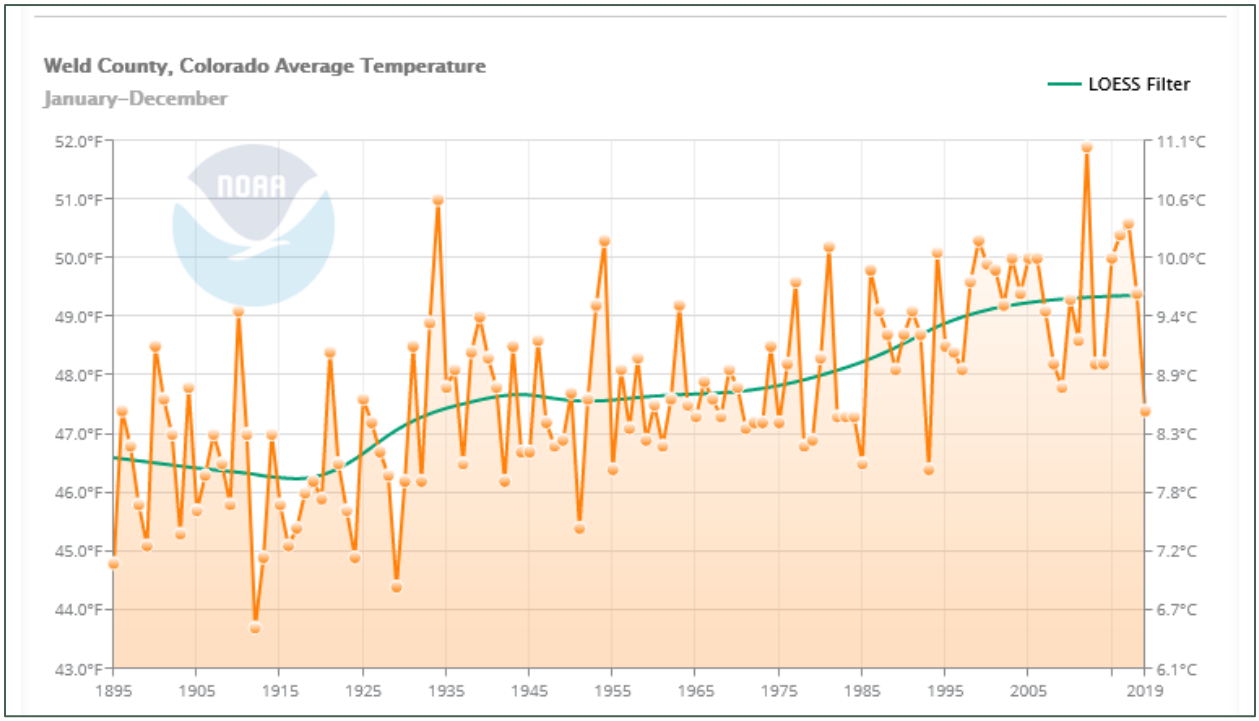
Period	Winter Weather	Winter Storm	Blizzard	Cold/ Wind Chill	Injuries	Deaths	Property Damage	Crop Damage
1996 - 2005	0	21	0	2	0	0	0	0
2006 - 2015	23	22	0	1	0	0	$102,000	0
2016- June 2020	18	12	7	0	0	1	0	0
Event Type Totals	**41**	**55**	**7**	**3**	**0**	**1**	**$102,000**	**0**
Total Events	**106**							

Source: NOAA, NCEI Storm Events Database; SHELDUS; Weld County

Extreme Heat

Data supports a shift towards a warmer climate with an increase in extreme high temperatures across the United States. Figure 44 below depicts the Colorado annual mean temperature history from 1895 to 2019. The probability of continued and more frequent extreme heat events across Colorado is supported by the clear upward trend in high temperatures since 1895.

Figure 44. Mean Colorado Temperature Trends (1895 – 2019)



Source: NOAA National Centers for Environmental information, Climate at a Glance

The Extreme Heat Events data available on CDC WONDER are county-level measures of the number of heat wave days in the months of May through September spanning the years 1981-2010. Heat events for daily maximum Heat Index were defined as any period of at least two consecutive days on which the county maximum Heat Index reached or exceeded the 95th percentile. When this condition was met, each of the consecutive days was identified as a "heat event day" for this definition. Table 45 presents this data by decade.

Table 45. Weld County Heat Wave Days (1981-2010)

Period	Heat Wave Days
1981- 1990	39
1991- 2000	41
2001-2010	94
Total Events	**174**

Source: CDC WONDER Database

5.11.3 Data Analytics

Extreme temperatures were not utilized as an input into the composite risk layer due to the hazard's lack of geographic variability.

5.11.4 Inventory Exposed

Damages in Weld County from extreme temperature events depend on a variety of factors and which end of the thermometer the event is defined by. All inventory and assets located in Weld County can be considered to be exposed to extreme temperatures.

The County's critical facilities should be able to provide adequate protection to community members in the event of an extreme temperature incident. Facilities with back-up generators are equipped to handle power outages during severe weather. Additionally, public buildings with heating and cooling systems are ideal shelters for both extreme cold or extreme heat occurrences.

Crops and livestock can be adversely affected by all extreme temperature events. Livestock are as sensitive as humans to low temperatures and even lower wind chill, so shelter is imperative for farmers during these events. If a low temperature event comes too early in the season, crops that may still be viable in the field could freeze and be lost before the chance to harvest them. During heat events, livestock may struggle without adequate water or shade, and crops may be irreversibly damaged due to the extended period of heat. Unfortunately, in most cases, there is little that can be done by farmers to mitigate the effects of extreme temperatures on their crops.

Extreme Cold

The most common building damage from extreme cold temperature exposure are freezing pipes that may burst and cause water damage. This is an issue for private homeowners and businesses, as well as Weld County properties.

Risks for buildings exposed to extreme cold changes are based on features such as the age and type of the building, construction material used, and condition of the structure. Specific construction elements can pose a greater likelihood of damage, such as large span roofs, which may leak or collapse under heavy snow loads.

Travel infrastructure can be affected during the winter months, as freezing temperatures and repeated freeze-thaw events can cause potholes, which may damage vehicles. Hazardous travel conditions, due to winter weather, may be more dangerous if potholes are not tended to promptly.

Damage and possible losses to critical infrastructure are a significant concern during an extreme cold event. Physical damage to essential parts of infrastructure due to ice build-up, burst pipes or high winds could result in disruption of vital services, including water, fuel and power supply systems, communications, and impassable roadways.

While people may stay indoors during an extreme cold event, without proper heating they are still susceptible to conditions such as frostbite and hypothermia. Extended power outages during a cold weather event can lead to dangerous situations for those trying to heat their homes with portable generators. If not vented properly, this can lead to carbon monoxide poisoning.

Motorists may be stranded due to poor winter road conditions, which requires the exposure of first responders who must go out and retrieve the motorists from their vehicles. Once retrieved, the logistical needs of shelter, feeding and medical care become another challenge.

Extreme Heat

The most significant impact of extreme heat on general building stock and critical facilities within Weld County is the resulting increased demand on air conditioning equipment. Surges in air conditioning demand may strain electrical systems and energy resources. Public utility infrastructure (including electrical generating and conveyance systems) may become damaged and break down causing localized and/or widespread power outages.

Transport and roadways could be impacted resulting in service disruptions and potentially hazardous travel conditions. Extreme heat may cause damage to the pavement of roads and bridges and could possibly cause railroad tracks to crack or buckle.

5.11.5 Potential Losses

Since 1996, there has only been one extreme cold event that caused property damage losses of $102,000. Currently, estimated property and crop losses associated with extreme temperature hazards are anticipated to be minimal across the planning area.

Despite the low likelihood of monetary losses, the human risk is considered great. Extreme heat and cold events present a significant life and safety threat to the population of Weld County, especially those with mobility issues, independent living difficulty, the elderly, low income families, outdoor laborers and those experiencing homelessness. Some of these people may be isolated, with no immediate family and/or limited mobility, which makes it more difficult for them to remove themselves from danger.

Casualties caused by extreme cold events can result from a lack of adequate heating and carbon monoxide poisoning from unsafe or unventilated heating systems, and hypothermia or frostbite from exposure to the elements. Individuals may not have access to a heat source or may be unable to afford to operate one on a regular basis, also increasing their risk for burst pipes. On the other end of the spectrum, those without adequate cooling can succumb to heat illnesses and struggle to find a way to cool down.

5.11.6 Probability of Future Occurrences

Based on data provided by the NWS and NCEI, it is likely that Weld County will continue to experience extreme temperature events in the future which will last for longer periods of time.

As more extreme temperature events are expected, limiting the effect of this hazard on the people and property in Weld County is crucial, as well as feasible. Ongoing mitigation activities should focus on protecting lives and preventing injuries during periods of extreme heat or cold. This includes actions such as community outreach campaigns to educate the public about risks and available support, establishing cooling and heating centers, reaching out to susceptible populations and educating the public on what advisories and warnings mean.

5.11.7 Land Use and Development

Increased development trends in and around Weld County will multiply the opportunities for exposure of growing areas to extreme temperatures. Enforcing and adhering to building codes for new development is imperative for community safety during future climate extremes. As the rural portions of the county continue to grow, consideration of reliable access to those rural residents should be prevalent in emergency management and mitigation planning.

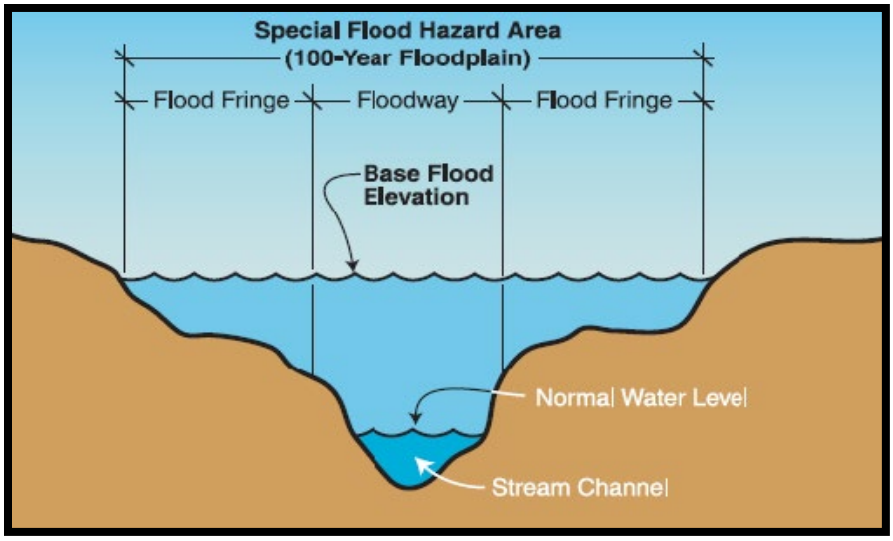
5.12 Flood (including Dam & Levee Failure)

HIGH RISK HAZARD

5.12.1 Hazard Identification

A flood is a naturally occurring event for rivers and streams and occurs when a normally dry area is inundated with water. Excess water from snowmelt or rainfall accumulates and overflows onto the stream banks and adjacent floodplains. As illustrated in Figure 45 below, floodplains are lowlands, adjacent to rivers, streams, and creeks that are subject to recurring floods. Flash floods, usually resulting from heavy rains or rapid snowmelt, can flood areas not typically subject to flooding, including urban areas. Additionally, extreme cold temperatures can cause streams and rivers to freeze, causing ice jams and creating flood conditions.

Figure 45. Floodplain Terminology



Floods are considered hazards when people and property are affected. Nationwide, hundreds of floods occur each year, making it one of the most common hazards in all 50 states and U.S. territories. Most injuries and deaths from flooding happen when people are swept away by flood currents and most property damage results from inundation by sediment-filled water. Fast-moving water can wash buildings off of their foundations and sweep vehicles away. Pipelines, bridges, and other infrastructure can be damaged when high water combines with flood debris. Basement flooding can also cause extensive damage. Flooding can cause extensive damage to crop lands and bring about the loss of livestock. Several factors determine the severity of floods including rainfall intensity and duration, topography, and ground cover.

Flood

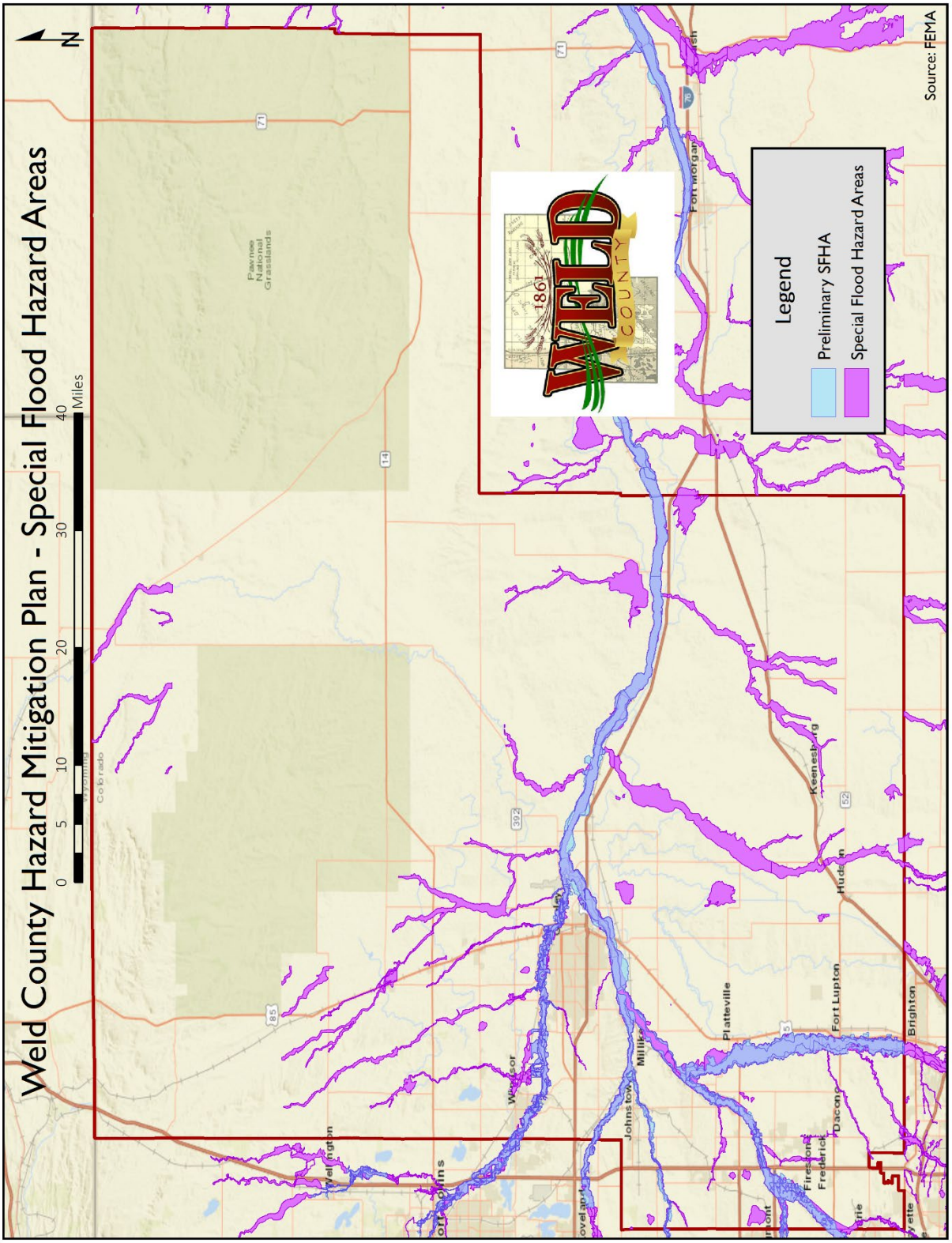
Riverine flooding originates from a body of water, typically a river, creek, or stream, as water levels rise onto normally dry land. Water from snowmelt, rainfall, freezing streams, ice flows, or a combination thereof, causes the river or stream to overflow its banks into adjacent floodplains. Winter flooding usually occurs when ice in the rivers creates dams or streams freeze from the bottom up during

extreme cold spells. Spring flooding is usually the direct result of melting winter snow packs, heavy spring rains, or a combination of the two.

Flooding events are typically measured in terms of magnitude and the statistical probability that they will occur. The 1% annual chance flood event is the standard national measurement for flood mitigation and insurance. A 1% annual chance flood, also known as the '100-year flood', has a 1 in 100 chance of being equaled or exceeded in any 1 year and has an average recurrence interval of 100 years. It is important to note that this recurrence interval is an average; it does not necessarily mean that a flood of such a magnitude will happen exactly every 100 years. Sometimes, only a few years may pass between one 1% annual chance flood and another while two other 1% annual chance floods may be separated by 150 years. The 0.2% annual chance flood event, or the '500-year flood', is another measurement which represents a 0.2% chance (or 1 in 500 chance) of occurring in a given year.

Figure 46 shows the current Effective FEMA Special Flood Hazard Areas (SFHA) across Weld County, which correlate to the 1% annual chance flood event. In addition, the current updated Preliminary, and not yet regulatory, SFHAs are also presented. It is expected that these Preliminary floodplains will supersede the current Effective floodplains in the near future for those areas.

Figure 46. FEMA Special Flood Hazard Areas



Flash floods can occur anywhere when a large volume of water flows or melts over a short time period, usually from slow moving thunderstorms, rapid snowmelt, or a snow on rain event. Because of the localized nature of flash floods, clear definitions of hazard areas do not exist. These types of floods often occur rapidly with significant impacts. Quickly moving water, only a few inches deep, can lift people off their feet, and only a depth of a foot or two is needed to sweep cars away. Most flood deaths result from flash floods.

Urban flooding is the result of development and the ground's decreased ability to absorb excess water without adequate drainage systems in place. Typically, this type of flooding occurs when land uses change from fields or woodlands to roads and parking lots. Urbanization can increase runoff two to six times more than natural terrain. The flooding of developed areas may occur when the amount of water generated from rainfall and runoff exceeds a storm water system's capability to remove it.

Ice jams are stationary accumulations of ice that restrict flow through a waterway. Ice jams can cause considerable increases in upstream water levels, while at the same time, downstream water levels may drop. Types of ice jams include freeze up jams, breakup jams, or combinations of both. When an ice jam releases, the effects downstream can be similar to that of a flash flood or dam failure. Ice jam flooding generally occurs in the late winter or spring.

Dam Failure

Floods from Dam Failure events are typically the result of either hydrologic or structural deficiencies. Dam failure by hydrologic deficiency is a result of inadequate spillway capacity, which can cause a dam to be overtopped during large flows into the reservoir. Failure usually occurs when excessive runoff happens after unusually heavy precipitation events. The sudden inflow from upstream dam failures is another potential cause of dam failure by overtopping.

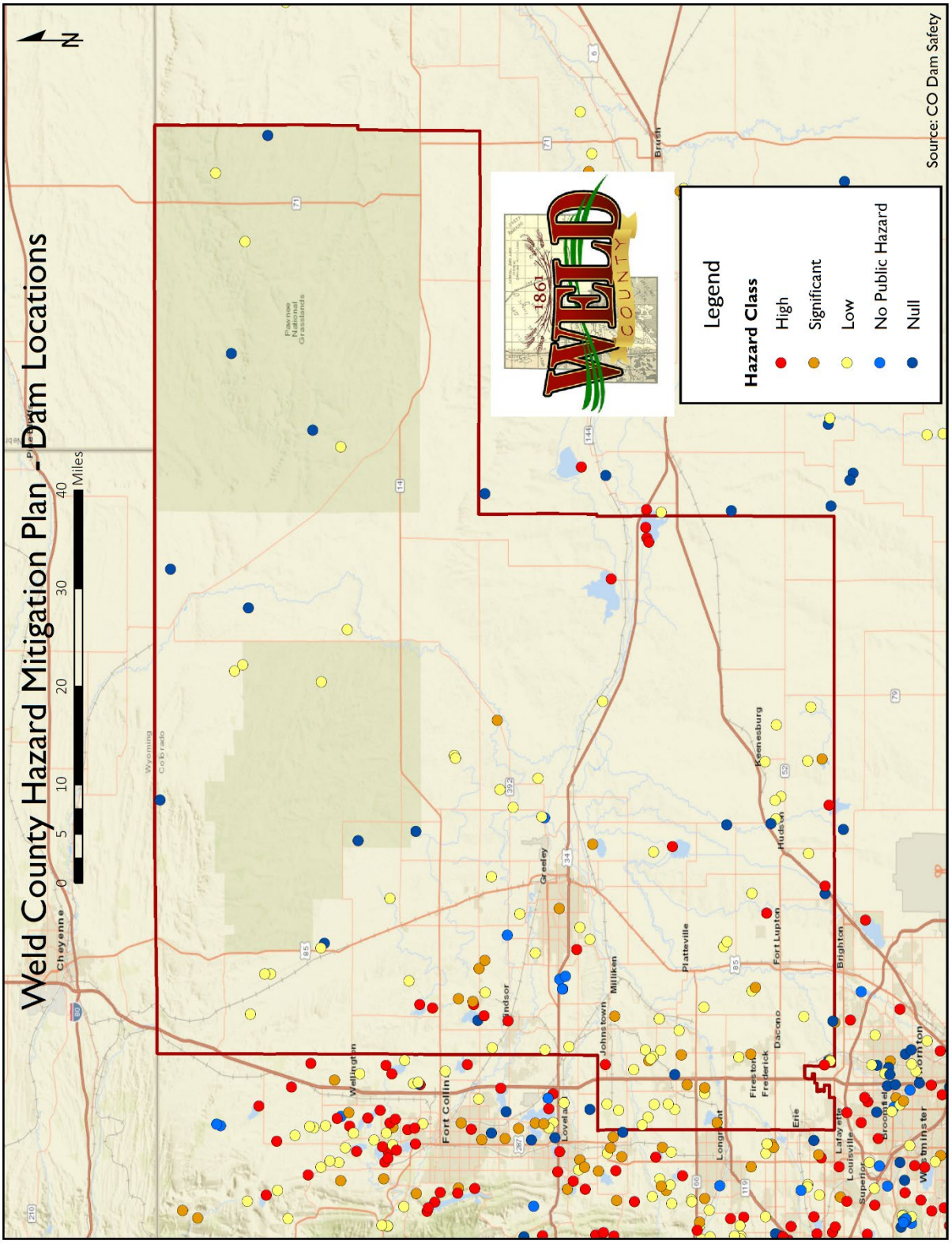
Colorado's Dam Safety Program rates the hazard classifications for dams on a three-tier system:

- High Hazard: A high-hazard rating does not imply or otherwise suggest that a dam suffers from an increased risk for failure. It simply means that if failure were to occur, the resulting consequences likely would be a direct loss of human life and extensive property damage.
- Significant Hazard: Significant hazard dams are those structures whose failure would result in significant damage to developed downstream property and infrastructure or that may result in an indirect loss of human life.
- Low Hazard: Low hazard dams typically are located in sparsely populated areas that would be largely unaffected by a breach of the dam. Although the dam and ancillary features may be totally destroyed, damages to downstream property would be restricted to undeveloped land with minimal impacts to existing infrastructure.

Figure 47 presents dams located throughout Weld County and the State. There are 117 located within the County, and many more across the Region that could impact Weld County communities. Of these within the County, sixteen are rated by the Colorado Dam Safety Program as being High Risk with another sixteen labeled a Significant Risk. Currently, there are eight dams with an Overall Condition ranking of Unsatisfactory.

Thirty-three Weld County dams are required to have Emergency Action Plans (EAP). Of these EAPs, twenty-four have been updated within the last five years. Twenty-five of the EAPs have inundation mapping identified. It should be noted that in many cases these inundation areas are larger than the SFHA.

Figure 47. Dam Locations & Hazard Class

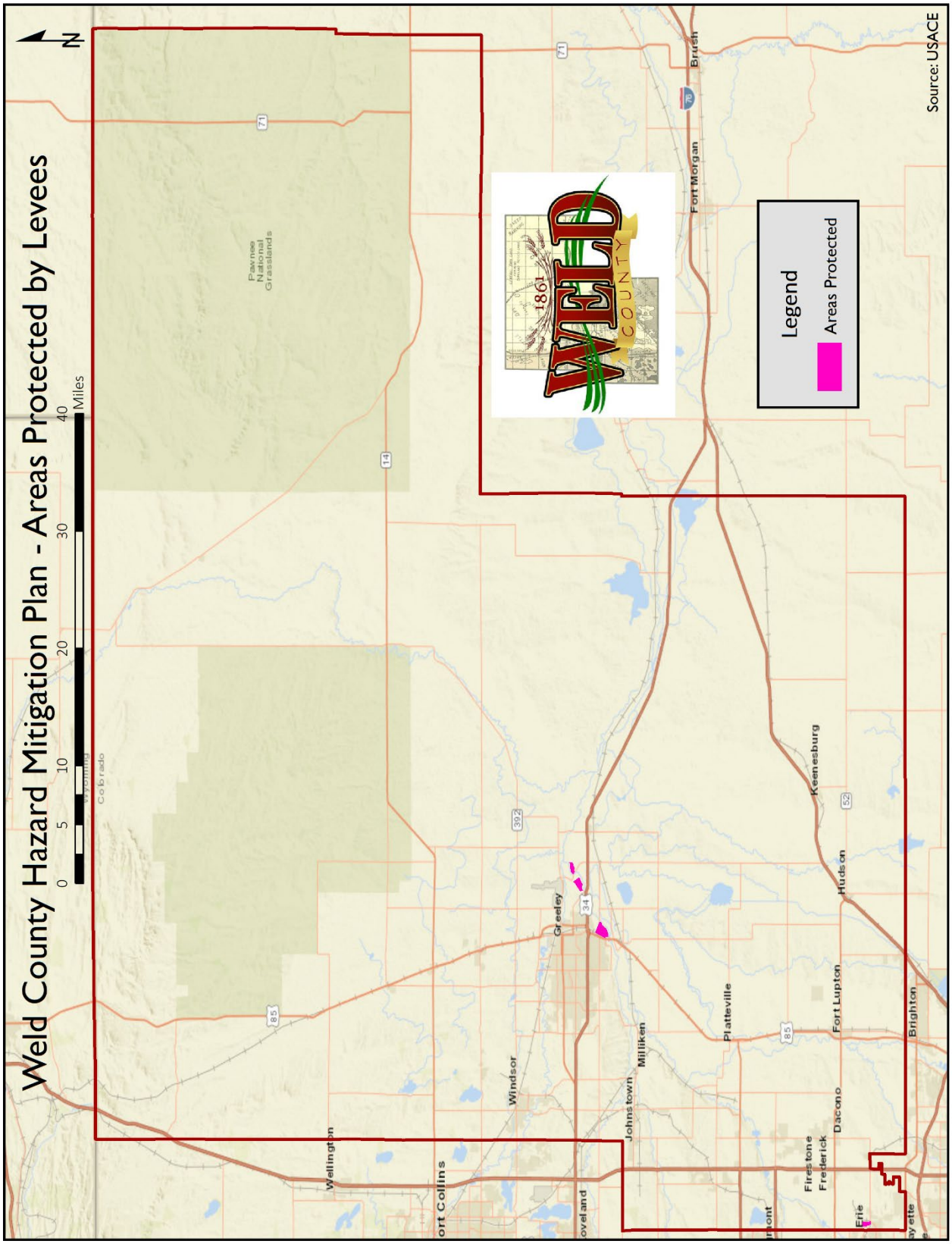


Levee Failure

Levees provide strong flood protection; however, they do not eliminate risk because they only reduce the risk to individuals and structures behind them. Levees are designed to protect against specific, pre-determined flood levels and are sometimes overtopped during severe weather events. As water passes over the top of a levee, it sometimes erodes the levee, worsening the flooding and potentially causing a breach. Levee Failure floods occur when a breach occurs, which may happen gradually or suddenly. The most dangerous breaches happen quickly. The resulting torrent can quickly inundate a large area behind the failed levee with little or no warning.

Figure 48 presents those areas identified by the U.S. Army Corps of Engineers (USACE) as being protected by levees. Note that there may be other areas protected by levee-like structures that are not officially tracked by the USACE.

Figure 48. Identified Areas Protected by Levee



5.12.2 Previous Occurrences

Documentation of flooding in Colorado collected by NOAA's National Center for Environmental Information (NCEI) goes back to 1950. The table below provides a history of major flood events that affected Weld County between 1950 and 2019. The earliest reported damaging event in Weld County didn't occur until 1996, but it is known that here were flooding events prior to then.

Table 46. Weld County Historical Flood Events (1950 – 2018)

Date	Hazard Type	Injuries	Deaths	Property Damage	Crop Damage
9/25/2020	Dam Failure	0	0	0	0
6/18/2018	Flash Flood	0	0	$10,000	0
5/8/2017	Flash Flood	0	0	$500,000	$50,000
7/17/2016	Flash Flood	0	0	$5,000	$10,000
6/13/2015	Flash Flood	0	0	$15,000	$10,000
6/2/2015	Flood	0	0	$25,000	$50,000
5/20/2015	Flood	0	0	$250,000	$100,000
5/9/2015	Flood	0	0	$15,000	$5,000
5/8/2015	Flood	0	0	$500,000	$100,000
8/25/2014	Flood	0	0	$25,000	$25,000
7/29/2014	Flash Flood	0	0	$10,000	$10,000
6/1/2014	Flood	0	0	$250,000	$50,000
5/30/2014	Flash Flood	0	0	$15,000	$10,000
5/25/2014	Flood	0	0	$15,000	$10,000
9/14/2013	Flash Flood	0	0	0	0
9/12/2013	Flood	0	0	$230,000,000	$3,750,000
8/3/2013	Flash Flood	0	0	$50,000	$50,000
9/26/2012	Flash Flood	0	0	$15,000	$10,000
6/7/2012	Flash Flood	0	0	$10,000	$5,000
7/12/2011	Flash Flood	0	0	$50,000	$100,000
6/12/2010	Flash Flood	0	0	$24,000	$50,000
6/11/2010	Flash Flood	0	0	$24,000	$50,000
5/26/2010	Flash Flood	0	0	$24,000	$250,000
5/25/2009	Flash Flood	0	0	$24,000	$50,000
8/6/2008	Flash Flood	0	0	$50,000	$25,000
8/22/2007	Flash Flood	0	0	$1,000	0
8/2/2007	Flash Flood	0	0	$1,000	0
6/9/2004	Flash Flood	0	0	0	0
7/26/2003	Flash Flood	0	0	0	0
7/13/2001	Flash Flood	0	0	$600,000	0
7/11/2001	Flash Flood	0	0	0	0
6/7/2001	Flash Flood	0	0	0	0
8/17/2000	Flash Flood	0	0	0	0
8/4/2000	Flood	0	0	0	0
7/19/2000	Flash Flood	0	0	0	0
7/10/1999	Flood	0	0	0	0
5/4/1999	Flood	0	0	0	0
5/1/1999	Flood	0	0	$200,000	0
4/28/1999	Flood	0	0	0	0
7/4/1998	Flood	0	0	0	0

Date	Hazard Type	Injuries	Deaths	Property Damage	Crop Damage
7/29/1997	Flash Flood	0	0	0	0
7/28/1997	Flash Flood	0	0	0	0
7/27/1997	Flash Flood	0	0	0	0
6/14/1997	Flood	0	0	0	0
6/3/1997	Flood	0	0	0	0
5/24/1997	Flash Flood	0	0	0	0
8/29/1996	Flash Flood	0	0	0	0
8/27/1996	Flood	0	0	0	0
Total		0	0	$232,708,000	$4,770,000

Source: SHELDUS; NOAA (NCEI)

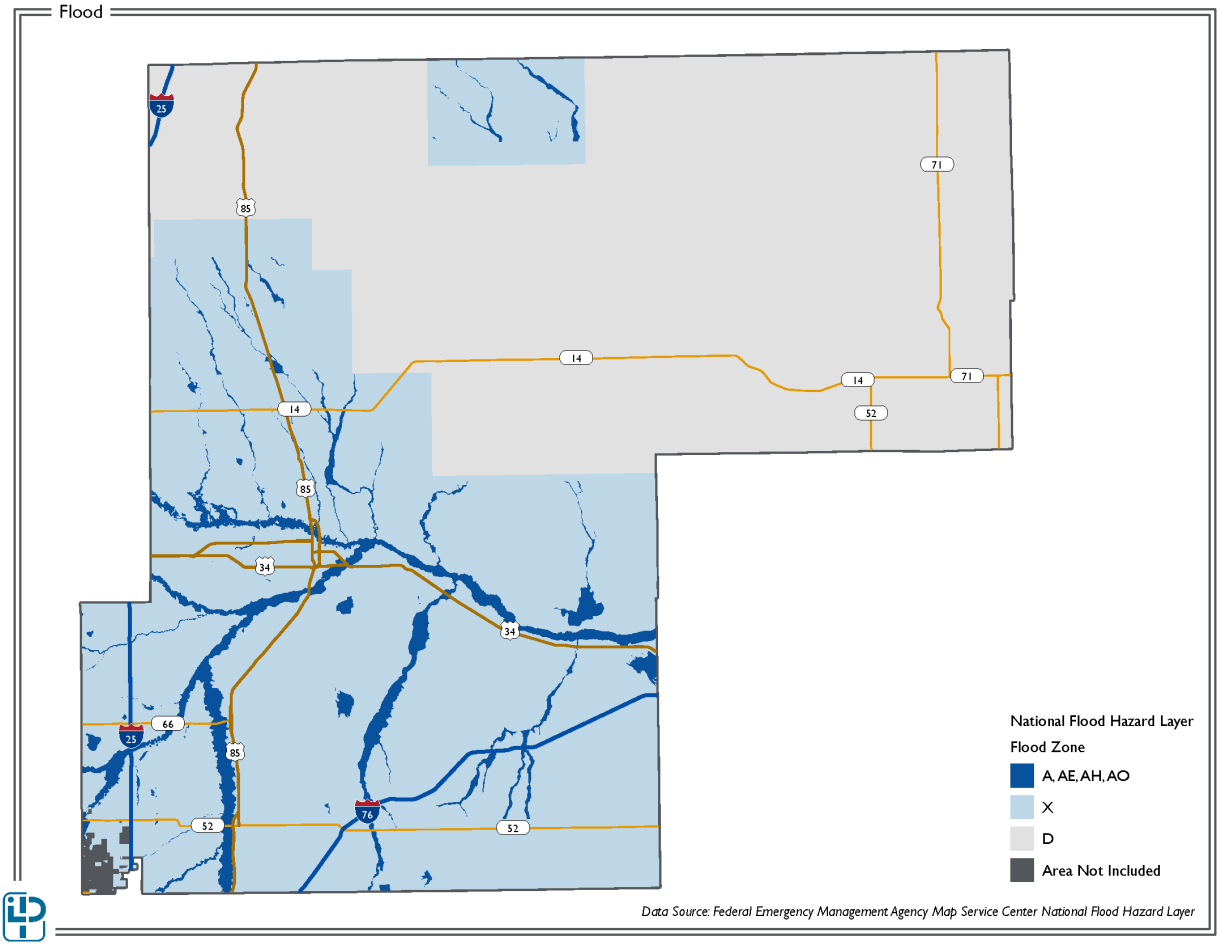
The most significant flooding event to collectively impact the State of Colorado occurred during September 2013. During the week beginning on September 9th, a slow moving cold front circulated over the state, clashing with warm, humid monsoonal air from the south. NOAA's NCEI estimates that Weld County sustained $231 million in property damage and another $4.5 million in crop damage. It should be noted, however, that the 2013 flooding was not a worst-case event for Weld County.

In September 2020, a dam failure did occur in Johnstown. No losses were reported, though repairs are anticipated to cost the Town $425 thousand. Additional details can be found in Table 25.

5.12.3 Data Analytics

The input into the composite risk layer developed with the data analytics suitability model for flood is shown in Figure 49.

Figure 49. Composite Risk Layer Flood Input



5.12.4 Inventory Exposed

Flood

The most appropriate risk assessment methodology for flooding involves scenario modeling using FEMA's Hazus loss estimation software. Hazus is a very useful planning tool because it provides an acceptable means of forecasting flood damage, loss of function of infrastructure, and casualties, among many other factors.

Utilizing Hazus 4.2, an updated flood analysis was conducted for Weld County. The Hazus flood scenario modeled a countywide 1% annual chance flood event. According to the Hazus inventory, there are an estimated 90,000 buildings in Weld County with a total building replacement value (excluding contents) of over $23 Billion. Approximately 92% of the buildings (and 82% of the building value) are associated with residential housing.

Additional exposure analysis was also conducted outside of Hazus. There are 2,177 address points across Weld County that have elevated potential for flooding due to their location in the SFHA. This equates to 1.6% of all address points within the County.

Dam Failure

There are 28,411 address points across Weld County that have elevated potential for flooding due to their location in mapped dam failure inundation areas. This equates to 1.0% of all address points within the County. It is important to note that not all dams across the County currently have this mapping available. While this inundation data is unable to be mapped in this Plan, community leadership is able to access this data housed by the Colorado Dam Safety Program.

Levee Failure

There are 1,308 address points across Weld County that have elevated potential for flooding due to their location in mapped areas protected by known levees. This equates to 1.6% of all address points within the County.

5.12.5 Potential Losses

The type of property damage caused by flood events depends on the depths and velocity of the floodwaters. Faster moving floodwaters can wash buildings off their foundations and sweep cars downstream. Pipelines, bridges, and other infrastructure can be damaged when high waters combine with flood debris. Extensive damage can be caused by basement flooding and landslide damage related to soil saturation from flood events. Seepage into basements is common during flood events. Most flood damage is caused by water saturating materials susceptible to loss (e.g., wood, insulation, wallboard, fabric, furnishings, floor coverings, and appliances). Homes in flooded areas can also suffer damage to septic systems and drain fields. In many cases, flood damage to homes renders them uninhabitable.

Flood events impact businesses by damaging property and by interrupting business. Flood events can cut off customer access to a business as well as close a business for repairs or permanently. A quick response to the needs of businesses affected by flood events can help a community maintain economic vitality in the face of flood damage. Responses to business damages can include funding to assist owners in elevating or relocating flood-prone business structures.

During flooding events, homes, businesses, and people face the threat of explosions and fires caused by leaking gas lines along with the possibility of being electrocuted. Domestic and wild animals forced out of their homes and brought into contact with humans by floodwaters can also pose a threat. In rural areas, property damage caused by flooding can be devastating to ranchers and farmers. When flooding occurs during the growing season, farmers can suffer widespread crop loss. Stock growers may lose livestock if they are unable to find safety from rising floodwaters. Flooding may also cause damage to pasture land, fences, barns, and out buildings.

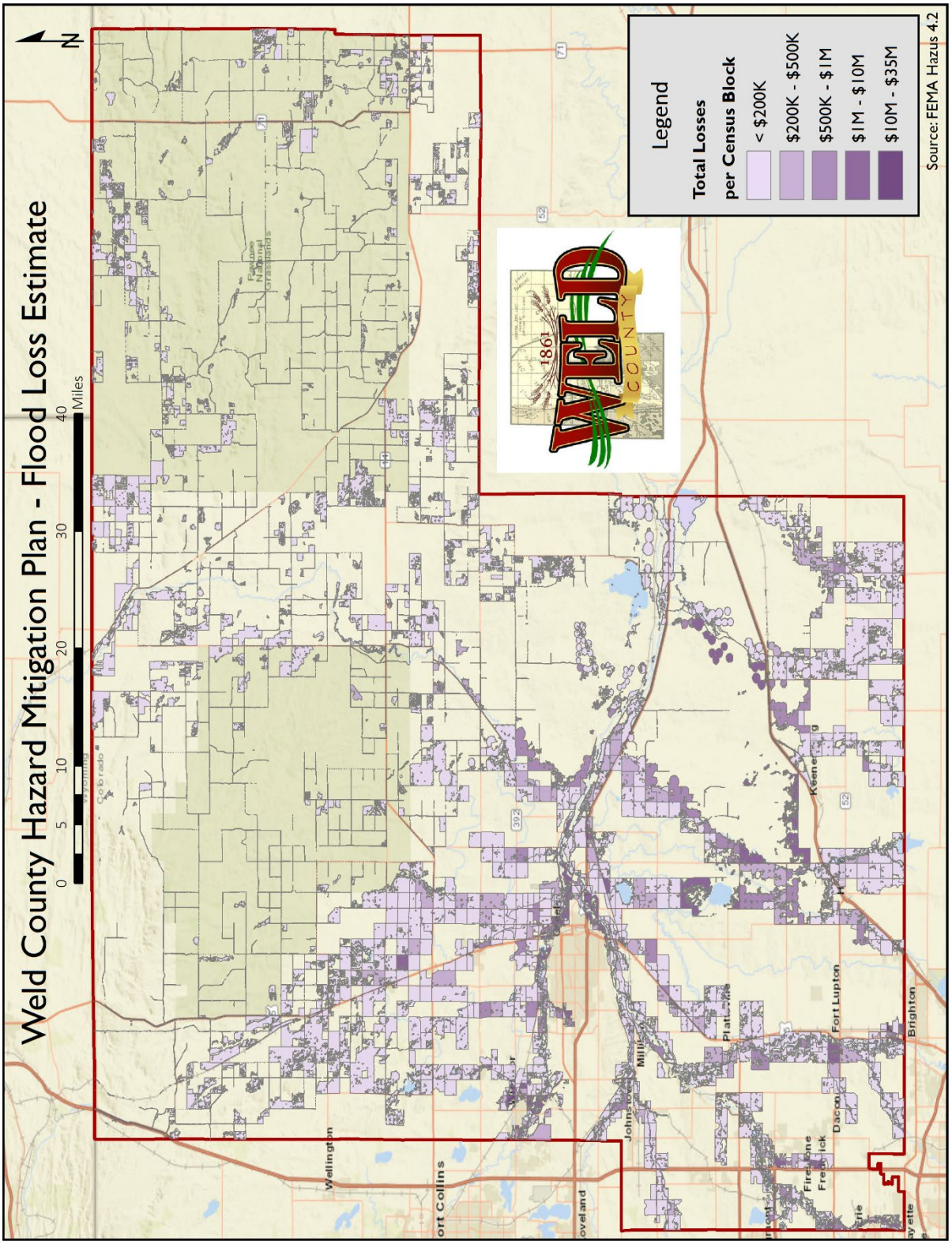
Publicly owned facilities are a key component of daily life for all citizens of the county. Public buildings are of particular importance during flood events because they house critical assets for government response and recovery activities. Damage to public water and sewer systems, transportation networks, flood control facilities, emergency facilities, and offices can hinder the ability of the government to deliver services. Loss of power and communications can be expected. Drinking water and wastewater treatment facilities may be temporarily out of operation.

Mitigation against flood events is accomplished through sensible floodplain management and regulations as well as identifying flood prone areas, tributary watersheds that experience instability or sediment loading problems, and channel instability hazards. This involves strategies to modify flooding and to modify infrastructure to decrease the likelihood of damage. To modify the impact of flooding, measures must be taken to decrease susceptibility to flood damage and disruptions. Natural and cultural resources must also be protected and managed. Coordination with mitigation plans by Floodplain managers will increase effectiveness of flood mitigation projects. City and County Planners will be valuable resources to incorporate flood mitigation plans into their respective plans.

The methodology used to determine potential losses to flooding was conducted using FEMA's Hazus loss estimation software. For this Plan, a 100-year flood scenario was modeled for the County. The results of the Hazus assessment are presented below.

Figure 50 details the estimated total economic losses based upon the 1% annual chance flood scenario. The Hazus tool performs its flood analysis at the Census Block level. While losses are estimate across most all of Weld County, it is clear some of the larger losses correlate to those floodprone areas with higher population and building densities. A number of variables are included in Hazus analyses in order to arrive at the estimated values of loss. For this reason, it is important to note that the Hazus loss estimates should not be used as a precise measure, but rather viewed from the perspective of the potential magnitudes of expected losses.

Figure 50. Hazus Flood Estimated Losses



Other loss estimates from the Hazus scenario to point out include:

- The vast majority of damaged structures are expected to be residential housing.
- Damages are modeled for "Essential Facilities", which includes: hospitals, schools, fire & police stations, and EOCs. The analysis expects damages to a handful of fire & police stations, in addition to a few schools.
- The model estimates ~8,200 people will be displaced due to the flooding.
- Total building-related losses are estimated to be ~$250 Million. 45% of these losses related to expected business interruptions. Residential housing makes up ~41% of these losses.

For additional loss estimates and further details see Appendix D: Flood Hazus Risk Report.

5.12.6 Probability of Future Occurrences

Frequency of previously reported flood events in Weld County provide an acceptable framework for determining the probability of future flood occurrence in the area. The probability that the County and its municipalities will experience a flood event can be difficult to predict or quantify. However, based on historical records of forty-eight flood events since 1950, it can reasonably be assumed that this type of event has occurred once every 0.7 years from 1950 through 2020. It should be noted that the oldest historical record of flood is from 1996. Looking only since then, two flood events have occurred on average each year.

Severe flooding has the potential to inflict significant damage to people and property in Weld County. Mitigating flood damage requires that communities throughout the County remain diligent and notify local officials of potential flood (and flash flood) prone areas near infrastructure such as roads, bridges, and buildings. While the potential for flooding is always present, Weld County has existing land-use policies and regulations for development to help lessen potential damage due to floods.

5.12.7 Land Use and Development

As population continues to increase in Weld County, future development trajectories can be expected to put more people and property, both private and public, at risk of flooding. It is essential that zoning and land use plans take into account not only the dollar amount of damage that buildings near waterways could incur, but also the added risk of floodplain development activity that alters the natural flood plain of the area (for example, narrowing the floodplains by building new structures close to rivers

and streams). The county as a whole should plan for the likelihood of increased exposure of property and humans to flood events.

Existing floodplain management ordinances are intended to address methods and practices to minimize flood damage to new and substantial home improvement projects as well as to address zoning and subdivision ordinances and state regulations. Currently, Weld County is a National Flood Insurance Program (NFIP) participant and continues to support floodplain management activity at the county and local scale.

The greatest protection against flooding is afforded by quality construction and compliance with local ordinances which exceed NFIP requirements. Code adoption by local jurisdictions, compliance by builders, and local government inspection of new homes can greatly reduce the risk of flooding. Moving forward, Weld County will continue to support monitoring, analysis, modeling, and the development of decision-support systems and geographic information applications for floodplain management activities. Additionally, jurisdictions within the county should consider participating in the Community Rating System (CRS).

In addition to land-use planning, zoning, and codes applicable to new development, flood mitigation measures include structural and non-structural measures to address susceptibility of existing structures. Flood mitigation measures such as acquisition, relocation, elevation-in-place, wet/dry flood proofing, and enhanced storm drainage systems all have the potential to effectively reduce the impact of flooding in Weld County.

5.12.8 National Flood Insurance Program (NFIP)

Weld County and many of its municipalities have been mapped for flood hazards and participate in the National Flood Insurance Program (NFIP). Given the flood hazard and risk across the County, and recognizing the importance of the NFIP in mitigating flood losses, an emphasis will be placed on continued compliance with the NFIP by participating jurisdictions. As NFIP participants, many of these communities have and will continue to make every effort to remain in good standing with NFIP. This includes continuing to comply with the NFIP's standards for updating and adopting floodplain maps and maintaining and updating the floodplain zoning ordinance.

Details of local jurisdiction participation status are shown in Table 47. Currently, FEMA is in the process of updating a number of floodplain maps across the County and Preliminary maps are being reviewed by the local communities.

Table 47. NFIP Participation

CID	Community	FIRM Date
080266	Weld County	1/20/2016
080179	Town of Ault	1/20/2016
080236	City of Dacono	1/20/2016
080180	Town of Eaton	1/20/2016
080181	Town of Erie	8/15/2019
080182	City of Evans	1/20/2016
080241	Town of Firestone	1/20/2016
080183	City of Fort Lupton	1/20/2016
080244	Town of Frederick	1/20/2016
080123	Town of Gilcrest	1/20/2016
080184	City of Greeley	1/20/2016
080249	Town of Hudson	1/20/2016
080250	Town of Johnstown	12/19/2006
080251	Town of Keenesburg	1/20/2016
080186	Town of La Salle	1/20/2016
080182	Town of Mead	1/20/2016
080187	Town of Milliken	1/20/2016
080188	Town of Nunn	1/20/2016
080189	Town of Pierce	1/20/2016
080190	Town of Platteville	1/20/2016
080317	Town of Severance	1/20/2016
080264	Town of Windsor	1/20/2016

Source: FEMA 7/17/2020

Repetitive Loss properties (RL) are structures covered by a contract for flood insurance made available under the National Flood Insurance Program (NFIP) that: (a) have incurred flood-related damage on two occasions, in which the cost of repair, on the average, equaled or exceeded 25% of the market value of the structure at the time of each flood event; and (b) at the time of the second incidence of flood-related damage, the policy for flood insurance contained Increased Cost of Compliance Coverage.

Weld County has had a total of nineteen RL events, with two in Erie and the remainder in Unincorporated areas. These 19 events correlate to nine properties, all of which are single family residences.

A Severe Repetitive Loss property (SRL) is defined as a single-family or multi-family residential property that is covered under an NFIP flood insurance policy and: a) has at least four NFIP claim payments (including building and contents) over $5,000 each, and the cumulative amount of such claims payments exceeds $20,000; or, b) a property for which at least two separate claim payments (building payments only) have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. For both a) and b) above, at least two of the referenced claims must have occurred within any ten-year period, and must be greater than ten days apart.

There is one severe repetitive loss (SRL) structure located within Weld County. The single-family residence is located in the City of Greeley and is currently in a Zone A floodplain. The property has not undergone any mitigation projects.

Table 48. Severe Repetitive Loss Property - City of Greeley

Date of Loss	Building Payment	Contents Payment	Total
5/31/2014	$8,251.70	$3,047.70	$11,299.40
9/15/2014	$102,217	$102,217.42	$204,434
6/11/2011	$7,333.92	$18,055.11	$25,389.03
6/10/2010	$18,055.11	$1,786.72	$19,841.83
Total	**$135,857.73**	**$125,106.95**	**$260,964.68**

Source: Colorado Division of Homeland Security and Emergency Management

Table 49. SRL Structure - City of Greeley Loss Summary

Property Value	$374, 702
Cumulative Loss and LAE Paid	$219,328
Replacement Cost	$329,100
30 Year Savings to the Fund Value	$197,948
100 Year Savings to the Fund Value	$227,622

Source: Colorado Division of Homeland Security and Emergency Management

The City of Greeley has identified this property in their mitigation strategy and has developed a Mitigation Action Guide to reduce the risk (and cost) associated with flooding of the SRL structure.

Table 50 presents the current status of flood insurance policies and claims paid across the County. Weld County has a total of 459 NFIP policies (412 were documented in the 2016 Plan). Unincorporated areas of Weld County have by far the largest number of policies and historical claims paid.

Table 50. NFIP Flood Insurance Summary

CID	Community	Total Premiums	Policies in Effect	Total Coverage	Total Claims since 1978	Total Paid since 1978
080266	Weld County	$292,318	234	$62,305,900	125	$5,052,696
080179	Town of Ault	$1,865	2	$177,600	0	$0
080236	City of Dacono	$25,686	15	$3,341,500	4	$133,425
080180	Town of Eaton	$4,032	6	$1,820,000	1	$0
080181	Town of Erie	$26,934	55	$14,783,100	7	$78,68
080182	City of Evans	$22,796	35	$9,647,800	0	$0
080241	Town of Firestone	$10,125	17	$3,715,600	6	$38,123
080183	City of Fort Lupton	$2,751	5	$2,015,800	0	$0
080244	Town of Frederick	$10,221	25	$7,240,100	10	$40,592
080184	City of Greeley	$93,356	74	$25,210,500	13	$66,902
080249	Town of Hudson	$5,020	3	$670,200	0	$0
080250	Town of Johnstown	$5,756	15	$4,411,000	1	$9,971
080186	Town of LaSalle	$2,610	4	$1,280,000	4	$88,671
080187	Town of Milliken	$2,323	4	$1,720,900	3	$150,680
080188	Town of Nunn	$8,945	8	$1,327,000	0	$0
080189	Town of Pierce	$35,623	18	$3,557,300	1	$312
080190	Town of Platteville	$412	1	$280,000	0	$0
080317	Town of Severance	$2,471	8	$1,608,100	0	$0
080264	Town of Windsor	$28,683	64	$20,170,000	11	$6,932
Total*:		**$520,554**	**459**	**$125,918,700**	**167**	**$5,571,401**

Source: FEMA 7/17/2020, if a jurisdiction is not listed it does not currently have any policies

** Total does not include bi-county communities (Erie, Johnstown, Windsor)*

Weld County communities do not participate in FEMA's Community Rating System (CRS) program. CRS is a voluntary program for NFIP participating communities. The goals of the CRS is to reduce flood damages to insurable property, to strengthen and support the insurance aspects of the NFIP, and to encourage a comprehensive approach to floodplain management.

The CRS was developed to provide incentives in the form of insurance premium discounts to communities that go above and beyond the minimum floodplain management requirements and develop extra measures to reduce flood risk. There are 10 CRS classes and the classification determines the insurance premium discount for policy holders. The discounts range from 5% to a maximum of 45%. CRS activities are summarized into four main categories and include: public information, mapping & regulation, flood damage reduction, and flood preparedness.

5.13 Hazmat Release

HIGH RISK HAZARD

5.13.1 Hazard Identification

A hazardous material (also known as Hazmat) is defined by the U.S. Department of Transportation as "articles or substances which are capable of posing a risk to health, safety, property, or the environment, are listed or classified in the regulations and are transported in commerce."

Hazardous materials are defined and regulated in the United States primarily by laws and regulations administered by the U.S. Environmental Protection Agency (EPA), the U.S. Occupational Safety and Health Administration (OSHA), the U.S. Department of Transportation (DOT), and the U.S. Nuclear Regulatory Commission (NRC). Each has its own definition of a "hazardous material."

For the purpose of tracking and managing hazardous materials, the DOT divides regulated hazardous materials into nine classes.

Table 51. Hazardous Materials - Classes and Descriptions

Hazard Class	Description
Class 1: Explosives	1.1 mass explosion hazard 1.2 projectile hazard 1.3 minor blast/projectile/fire 1.4 minor blast 1.5 insensitive explosives 1.6 very insensitive explosives
Class 2: Compressed Gases	2.1 flammable gases 2.2 non-flammable compressed 2.3 poisonous
Class 3: Flammable Liquids	Flammable (flash point below 141°) Combustible (flash point 141°-200°
Class 4: Flammable Solids	4.1 flammable solids 4.2 spontaneously combustible 4.3 dangerous when wet
Class 5: Oxidizers and Organic Peroxides	5.1 Oxidizer 5.2 Organic Peroxide
Class 6: Toxic Materials	6.1 Material that is poisonous 6.2 Infectious Agents
Class 7: Radioactive Material	Radioactive I Radioactive II Radioactive III
Class 8: Corrosive Material	Destruction of the human skin Corrode steel at a rate of 0.25 inches per year
Class 9: Miscellaneous	A material that presents a hazard during shipment but does not meet the definition of the other classes

There are three common sources for Hazmat incidents within the County: delivery lines, fixed storage facilities/use locations, and transportation lines. Specific safety regulations apply when handling and storing hazardous materials at fixed facilities. Hazardous materials that are being transported must have specific packaging and labeling. If a Hazmat incident occurs, the area impacts will depend on the nature of the chemical and climate conditions. All areas should be considered at risk. Some areas may have greater impacts from a spill, such as those close to aquifers and other water supplies.

Weld County's 2035 Transportation Plan summarizes existing transportation conditions including current hazardous materials routes. "Weld County has significant oil well activity," states the 2035 Plan. "As a result, trucks carrying oil well production utilize nearly every road in the county."

In Weld County, transportation of hazardous materials is occurring throughout the day, every day, by rail and road. While roadway transport accounts for the largest amount of hazardous materials moving though the County, rail cars pose an increased risk due to the large quantities they can carry. With that said, there have been a limited number of Hazmat incidents involving rail cars in Weld County.

Routing of hazardous materials by motor vehicles on all public roads in the state is governed by Title 42, Article 20 of the Colorado Revised Statutes. CDOT Policy Directive 1903.0 (effective 5/20/2010), and CDOT Procedural Directive 1903.1 (effective 2/3/2011), govern CDOT's role in the designation of hazardous material routes. In order to designate a Colorado state highway as hazardous material route, CDOT staff members, local governments, or private entities must request the Mobility Section of the Division of Transportation Development to perform an analysis of the route. To perform this analysis, the Mobility Section convenes a "Hazmat Advisory Team" to determine if the proposed route meets the required criteria. If the required criteria are met and approved by the Transportation Commission, CDOT will file a petition with the Colorado State Patrol (CSP) for approval. If the petition is approved, the route is designated a hazmat route.

*Approved by the Board of Commissioners on July 8, 2019, the **Weld County Oil and Gas Energy Department** (OGED) was created to firmly establish the county's local control over mineral resources in unincorporated Weld County - a delegation included in Senate Bill 181 and accepted by the commissioners upon the bill being signed into law on April 16, 2019.*

With the goal of serving residents and the energy industry, the OGED is where to file and get more information about 1041 Weld County Oil and Gas Location Assessment (1041 WOGLA) permits, Location Assessment for Pipeline (LAP) permits and more. The OGED can also assist residents who have questions regarding oil and gas activity in Weld County. You can find many of the documents you need and the answers to many questions you may have throughout this website.

The OGED is responsible for permitting, regulating and enforcing surface regulations related to oil and gas operations for drilling sites located in unincorporated Weld County. The department is currently staffed with 12 employees who will enforce regulations to ensure the health, safety and welfare of the public and the environment.

Weld County is the number one producer of oil and gas in the State. 87% of all crude oil production and 43% of all natural gas production in Colorado comes from Weld County!

Currently Weld County has submitted a petition to CSP for an oil, crude, and gas exemption for CR 49, between Highway 34 and I-76.

The required criteria that the route must meet before it is brought before the Transportation Commission are as follows:

- The route(s) under consideration are feasible, practicable, and not unreasonably expensive for such transportation.
- The route(s) is continuous within a jurisdiction and from one jurisdiction to another.
- The route(s) does not unreasonably burden interstate or intrastate commerce.
- The route(s) designation is not arbitrary or intended by the petitioner merely to divert the transportation of hazardous materials to other communities.
- The route(s) designation will not interfere with the pickup or delivery of hazardous materials.
- The route(s) designation is consistent with all applicable state and federal laws and regulations; and
- The route(s) provides greater safety to the public than other feasible routes. Considerations include but are not limited to:
    - AADT, crash and fatality rates
    - Population within a one-mile swath of each side of the highway
    - Locations of schools, hospitals, sensitive environmental areas, rivers, lakes, etc.
    - Emergency response capabilities on the route
    - Condition of the route, i.e., vertical and horizontal alignment, pavement condition, level of access to the route, etc.

Colorado State Patrol
Hazardous Materials Unit

(303) 273-1900
http://csp.state.co.hazmat.html

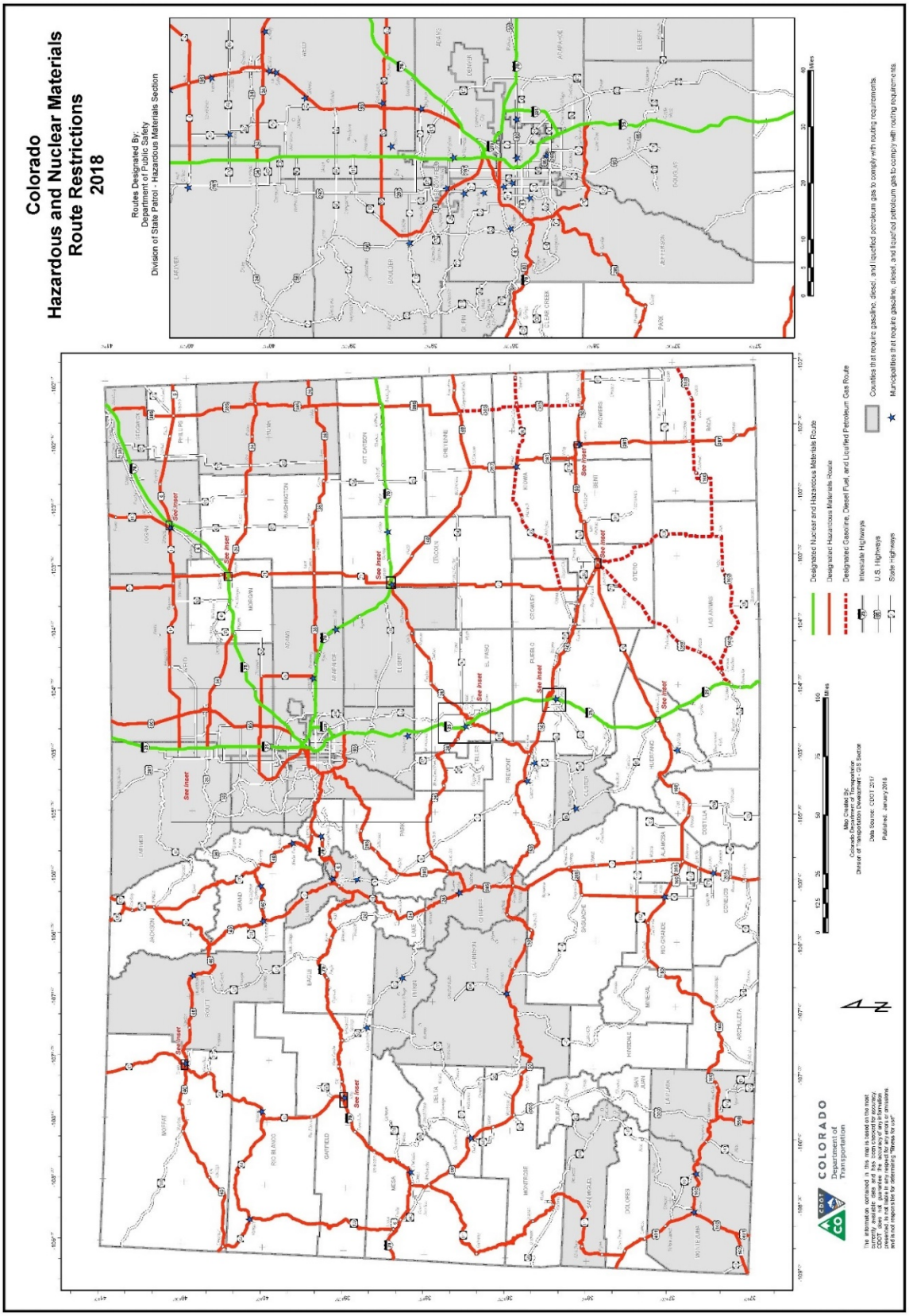
Troop 8-C is the Hazardous Materials Section of the Colorado State Patrol. Their mission is to contribute to the safety of hazardous materials transportation in order to protect citizens and the environment. Twenty-eight troopers trained as Hazardous Materials Technicians are deployed throughout the state.

Weld County's Office of Emergency Management is the Designated Emergency Response Authority (DERA) for all unincorporated areas of the County. Local municipalities are the DERA for their community unless they have delegated their role to local fire districts. State Patrol has jurisdiction for highways.

For security reasons, it is not within the scope of this plan to map the locations of all industrial and commercial fixed sites.

The following CDOT map shows the state's designated nuclear, hazardous materials, and gasoline, diesel fuel, and liquid petroleum gas routes, many of which pass through the western portion of Weld County.

Figure 51. Colorado Hazardous and Nuclear Materials Route Restrictions



5.13.2 Previous Occurrences

The Pipeline and Hazardous Materials Safety Administration's (PHMSA) Incident Reports Database, shows a total of 200 Hazmat incidents reported in Weld County between 1977 and 2019. The majority of these incidents occurred due to improper preparation for transport, product leakage due to loose or defective components, and overfilling of product. Roughly 10% were traffic accidents.

Table 52. PHMSA Causes of Hazardous Material Incidents (1977 – 2019)

Period	Total	Defective Component or Device	Improper Transport Preparation	Overfilled Capacity	Vehicle Accident	Other
1977-1988	2	2	-	-	-	-
1990-1999	62	8	11	14	4	25
2000-2009	46	16	10	4	2	14
2010-2019	90	34	10	2	14	30
Total	**200**	**60**	**31**	**20**	**20**	**69**

The Colorado Oil & Gas Conservation Commission (COGCC) also keeps a database of past spills and releases. Table 53 presents these documented incidents since 2010. The County averaged 292 spills and releases per year during this time. It should be pointed out the 12% drop from that average during 2020. This recent reduction in spills is attributed to on-going work between the county and industry.

Table 53. COGCC Hazardous Material Incidents (2010 – 2020)

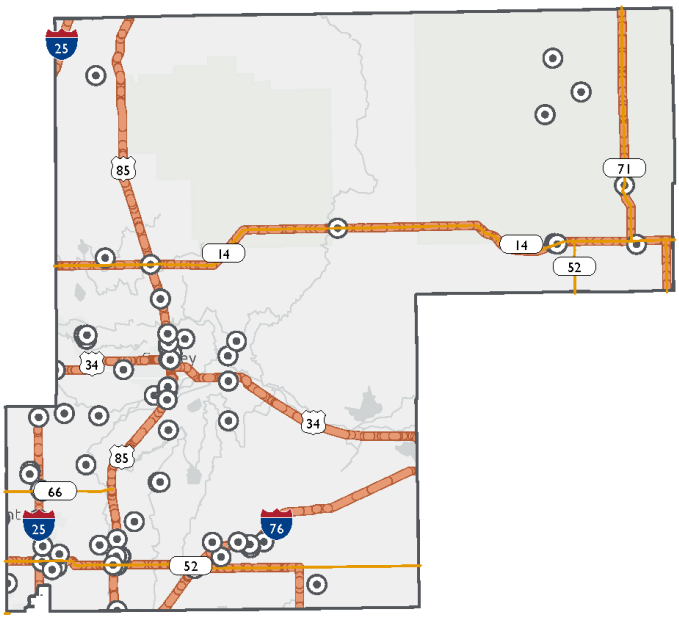
Year	Total
2010	159
2011	179
2012	199
2013	327
2014	418
2015	327
2016	262
2017	367
2018	364
2019	352
2020	258
Total	**3,212**

5.13.3 Data Analytics

The input into the composite risk layer developed with the data analytics suitability model for Hazmat release is shown in Figure 52.

Figure 52. Composite Risk Layer Hazmat Release Input

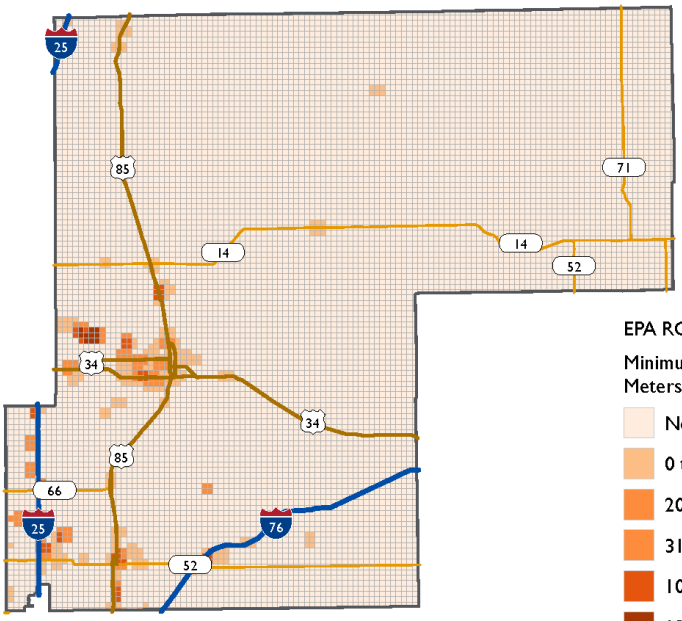
Hazardous Material



PHMSA Incidents (1971 - 2020)

Hazardous Materials Routes

Data Sources: United States Department of Transportation Pipeline and Hazardous Materials Safety Administration
Colorado Department of Transportation Current Hazmat Routes



EPA RCRA Active Sites Hazardous Materials Generation

Minimum Kilograms Generated Monthly within 800 Meters (~1/2 Mile)*

- None
- 0 to 20
- 20 to 315
- 315 to 1000
- 1000 to 1300
- 1300 to 4400

Data Source: Environmental Protection Agency Facility Registry Service Facilities

* Notes and Assumptions: Ready recommends evacuating at least a 1/2 mile in the event of a hazardous materials incident

5.13.4 Inventory Exposed

Approved transportation routes crisscross the County geography, moving large amounts of hazardous materials each day, and significant quantities of chemicals are used in the agricultural regions. Therefore, the inventory and assets in the County, public and private, are exposed. Risks to people, property and crops may vary substantially at local levels and should be determined in mitigation planning accordingly.

As development continues closer to existing industrial areas and population density increases near hazardous materials transportation routes, the inventory exposed to future occurrences multiplies.

The effects of exposure may not only be near a direct spill or release of hazardous materials, as some chemical vapors can travel considerable distances based on wind conditions and the type of chemical. The inventory that is most often exposed to Hazmat risks are railways, roadways, and fixed facilities that contain hazardous materials, and all assets that lie within at least a mile of the potential release areas.

5.13.5 Potential Losses

Hazmat related events occur throughout Weld County every year. The potentials costs and damages are based on the intensity, magnitude and risk of these incidents. Hazardous material responses depend on various factors including:

- Type of material released
- Cause and process of release
- Weather conditions
- Location of the event
- Presence of population nearby
- Time until responders arrive

These events have the potential to threaten lives, disrupt services to the public and disrupt business activity due to possible evacuations and extended closure of roadways. Hazmat incidents can result in environmental contamination to non-renewable resources such as soil and water sources.

Human exposure to hazardous materials may have the most immediate and extreme consequences. The presence of a Hazmat response teams brings with it very specific dangers to first responders and the protective equipment they wear is typically discarded after the response, creating a need for this inventory to be replenished.

Potential losses should consider the costs of responses. The Colorado Department of Public Safety has a set of rules and regulations concerning claims for reimbursement of costs incurred for the handling of hazardous substance incidents. These direct costs include:

- Personnel overhead
- Supplies expended
- Vehicles and equipment
- Contracted services
- Laboratory testing
- Storage/disposal of the materials

Indirect costs such as administrative staff hours may also be included. If the incident response is not properly documented, submitted, and processed, it could result in only partial or no reimbursement to the local jurisdiction.

5.13.6 Probability of Future Occurrences

The probability of future occurrences of Hazmat events is likely. The COGCC incident data shows an average of 292 events occurred yearly since 2010. Trends from the last four years show that incidents are decreasing, most likely due to increased coordination between the county and industry.

As operations utilizing hazardous materials fluxtuate, such as oil production, so do handling and transport. This contributes to the probability and risks of future events.

5.13.7 Land Use and Development

As Weld County continues to experience population growth and development over time, considerations must be made concerning land use and regulations. Increasing development may cause residential and commercial investment closer to railways and identified hazardous and nuclear materials routes.

5.14 Land Subsidence

LOW RISK HAZARD

5.14.1 Hazard Identification

Land Subsidence describes any depressions, cracks, and/or sinkholes in the earth's surface which can threaten people and property. Causes of subsidence include, but are not limited to, the removal or reduction of sub-surface fluids (water, oil, gas, etc.), mine subsidence, and hydro compaction. Of these causes, hydro compaction and mine subsidence usually manifest as localized events, while fluid removal may occur either locally or regionally.

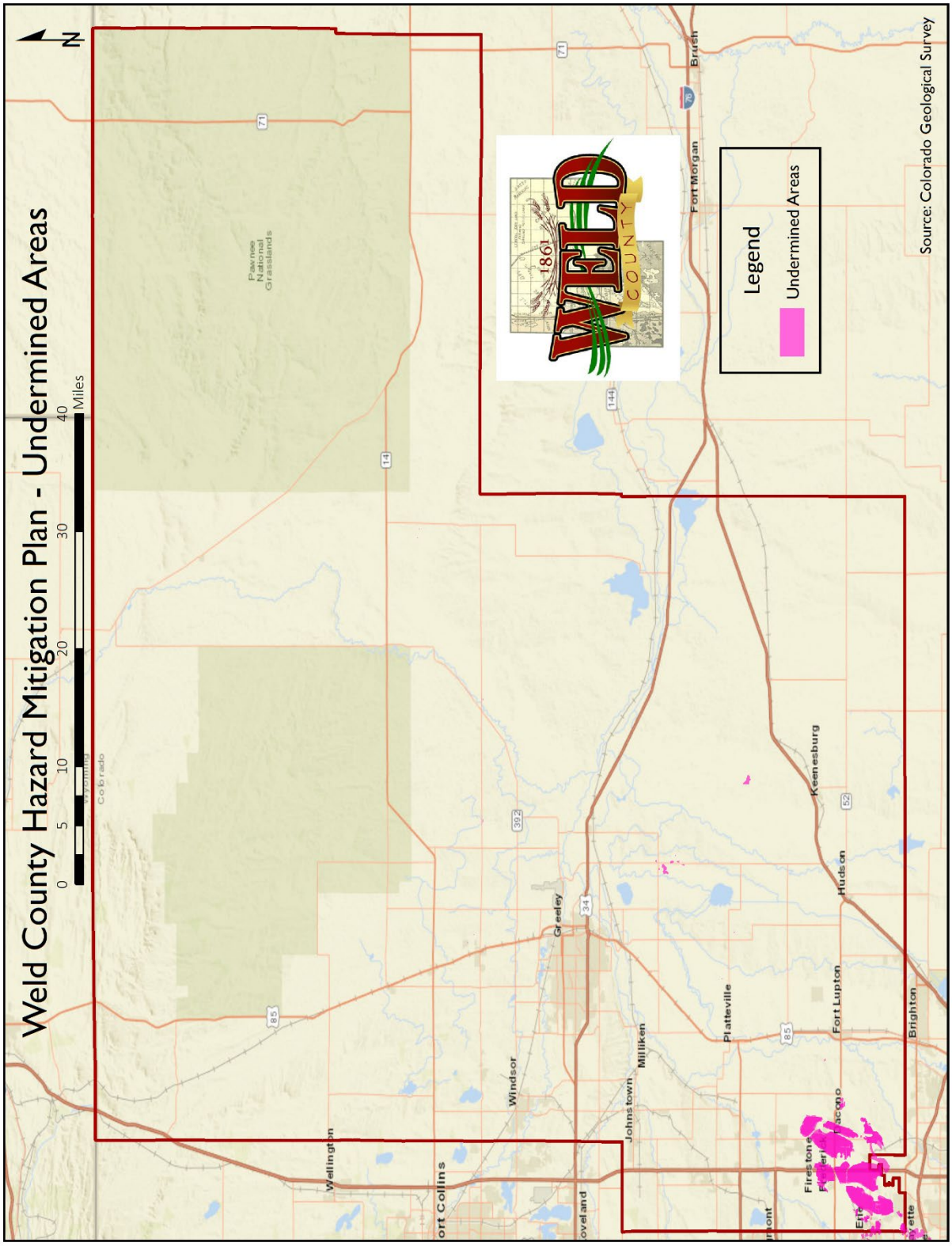
Land subsidence can occur rapidly due to a sinkhole or the collapse of an underground mine, or during major earthquakes. Subsidence can also take place slowly, becoming evident over the time span of many years. Soils that tend to collapse and settle are those characterized by low-density materials that shrink in volume when they become wet and/or are subjected to weight from development. Subsidence events, depending on their location, can pose significant risks to health, safety, and local agricultural economies and interruption to transportation, and other services.

There are hundreds of abandoned underground coal mines scattered throughout Colorado that present potential subsidence hazards to structures and surface improvements. The Colorado Geological Survey (CGS) operates the Colorado Mine Subsidence Information Center (MSIC) which is the repository for all of the known existing maps of inactive or abandoned coal mines in the state. Subsidence tends to be problematic along the Colorado Front Range, Western Slope, and in the central mountains near Eagle and Garfield Counties.[7]

Based on data provided by CGS, there are a number of known undermined areas within southwestern Weld County that are more vulnerable to subsidence, with additional small pockets scattered across the southern half of the County. Figure 53 presents a map identifying the locations within Weld County that have potential for subsidence due to historical mining activity. Note that this data is best available and is the same utilized during the 2016 Plan update.

[7] 2013 Colorado Natural Hazards Mitigation Plan

Figure 53. Undermined Areas



5.14.2 Previous Occurrences

Reliable, county-specific historical records of land subsidence events in the State of Colorado is sparse. That said, CGS has been researching land subsidence in Colorado for over two decades. In addition to publishing regional susceptibility maps and GIS datasets, the CGS has also compiled a series of case histories that describe select land subsidence events across the state.

Out of the five case histories highlighted on the CGS "Geologic Hazards" resource site, two are located in Weld County.

Table 54. CGS Land Subsidence Case Histories – Weld County

Location	Event Summary
Erie, CO	January 2009 - A large subsidence hole was reported at a residence near the corner of a horse barn. The property owners reported the hole opened up overnight and a fence and gate had been destroyed by the event. The hole measured roughly 25 feet by 25 feet by 15 feet deep and was filled with water. Because of the nature of the opening and the proximity to livestock and human activities, the event was considered a subsidence emergency and was backfilled by the Abandoned Mine Lands program
Erie, CO	December 2008 - A large subsidence hole in a field west of Erie was reported. The hole was about 50 feet in diameter and 35 feet deep before being filled with water. The field where the hole appeared was under consideration for annexation by the town for future residential development. A geophysical investigation conducted 3 months prior did not show any evidence of voids in the area. The hole was located outside of the mined area shown on the mine map indicating that the mine map was inaccurate. During the mitigation process, a secondary subsidence pit of smaller dimensions was found directly west of the original hole. Both holes were backfilled by the Abandoned Mine Lands program.

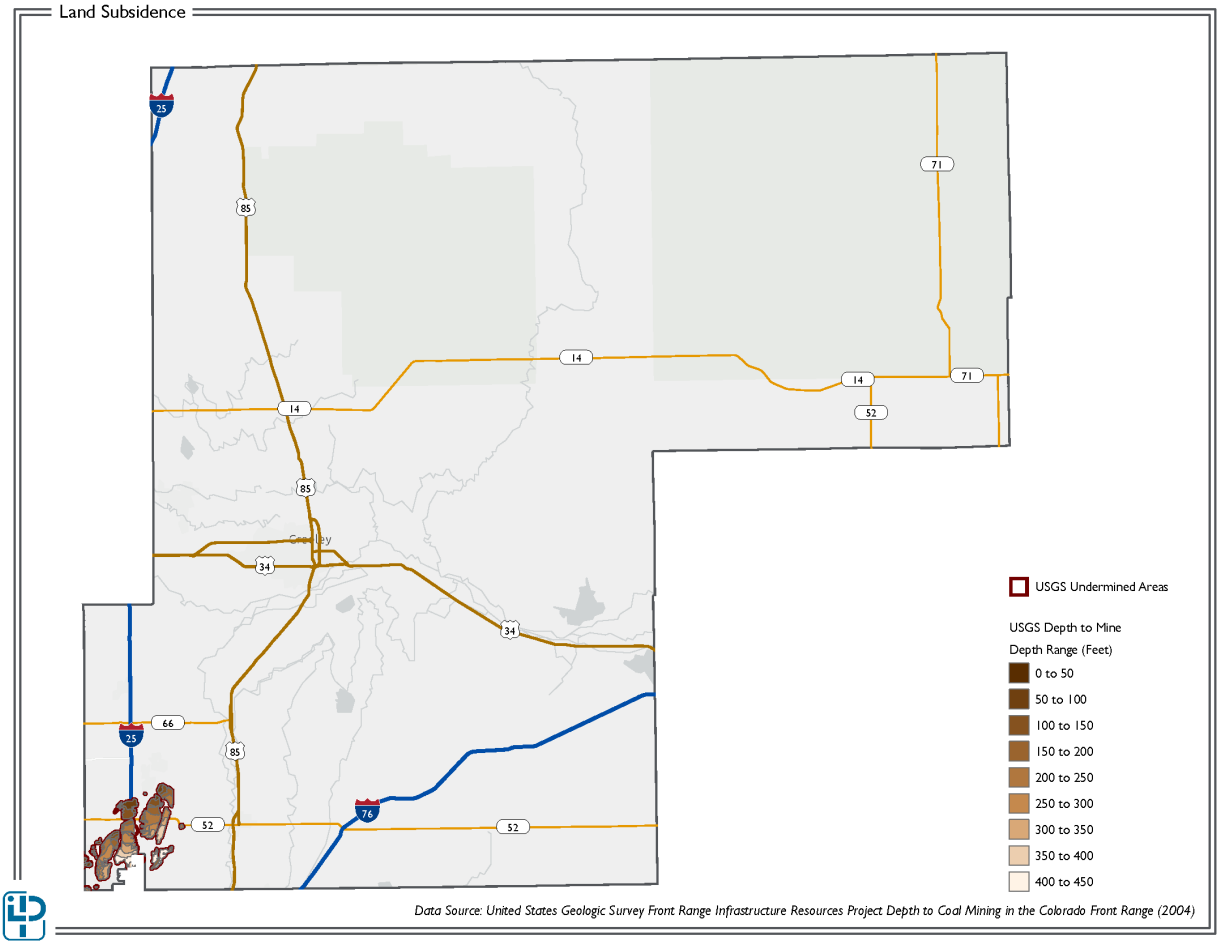
Source: CGS

As a general rule of thumb, land subsidence occurrence can be expected where it has occurred in the past. For this reason, the County may benefit from developing a reporting system and database for tracking land subsidence events.

5.14.3 Data Analytics

The input into the composite risk layer developed with the data analytics suitability model for land subsidence is shown in Figure 54.

Figure 54. Composite Risk Layer Land Subsidence Input



5.14.4 Inventory Exposed

A structure may be at risk to the impacts of land subsidence if it is located over or close to an undermined area. Therefore, an important first step in determining exposure at a specific location is to determine if the area is undermined or near an area where underground mining took place. There are 8,453 address points across Weld County that have elevated potential for subsidence due to historical mining activity and development activity. This equates to 6.2% of all address points within the County.

Most of the undermined areas within Weld County that are vulnerable to subsidence are located in the southwestern portion of the County. This is an area of the County where both development and population are growing rapidly. Impacted communities include Erie, Dacono, and Frederick. As population growth brings new development into available land in the southwestern portion of the County, more assets may become exposed to subsidence hazards.

5.14.5 Potential Losses

The risk analysis indicates that Weld County has relatively high exposure to land subsidence, primarily because of the location of historically undermined areas in relation to urban development and population growth. Not only have there been previous land subsidence events reported in the County, CGS data of at-risk areas shows a number of areas of historical undermining in the County, many of

which intersect with Lifelines, largely populated areas, and future development areas. A lack of historical losses makes it difficult to quantify potential losses from land subsidence events.

5.14.6 Probability of Future Occurrences

Due to the lack of identified subsidence occurrences and uncertainty associated with existing data, it is challenging to calculate any type of probability for future events. It can be assured however, that subsidence will continue to slowly alter the landscape of Weld County.

In areas where there is decreased precipitation in the summer months and reduced surface-water supplies, communities are often forced to pump more ground water to meet their needs. In Colorado, the major aquifers are composed primarily of compressed clay and silt, soil types that are prone to compact when groundwater is pumped. In the past, major land subsidence has occurred in agricultural settings where groundwater has been pumped for irrigation. It is important that Weld County considers future mitigation actions that will address this hazard, particularly in rapidly growing areas.

5.14.7 Land Use and Development

As the population of Weld County grows, there is a possibility that some development will encroach into identified subsidence hazard areas. These hazards include the potential for sagging ground, sinkholes, and the collapse of mine shafts that have not been adequately closed. Any of these hazards can cause damage to property, structures, transportation infrastructure, utility lines, and in some cases, can threaten human life. Only a few inches of differential settlement beneath a structure could cause many thousands of dollars of damage. It is important that subsidence risk data is considered in the designs and plans of future development proposals.

5.15 Prairie Fire

HIGH RISK HAZARD

5.15.1 Hazard Identification

Prairie Fires (also known as wildfires) are defined as unwanted or unplanned wildland fires. They include unauthorized human caused fires, escaped prescribed burn projects, and all other wildland fires where the objective is to put the fire out.

Prairie fires are fueled by natural ground cover, including native and non-native species of trees, brush and grasses, and crops along with weather conditions and topography. While available fuel, topography, and weather provide the conditions that allow fires to spread, most fires are caused by people through criminal or accidental misuse of fire.

Prairie Fire near Weld County

Prairie fires pose serious threats to human safety and property in Weld County. They can destroy crops, timber resources, recreation areas, and critical wildlife habitat. Wildfires are commonly perceived as hazards in the western part of the state; however, they are a growing problem in the wildland-urban interfaces of eastern Colorado, including communities within Weld County.

Prairie fire behavior is dictated in part by the quantity and quality of available fuels. Fuel quantity is the mass of material per unit area. Fuel quality is determined by a number of factors, including fuel density, chemistry, and arrangement. Arrangement influences the availability of oxygen surrounding the fuel source. Another important aspect of fuel quality is the total surface area of the material that is exposed to heat and air. Fuels with large area-to-volume ratios, such as grasses, leaves, bark and twigs, are easily ignited when dry.

Climatic and meteorological conditions that influence prairie fires include solar insulation, atmospheric humidity, and precipitation, all of which determine the moisture content of wood and leaf litter. Dry spells, heat, low humidity, and wind increase the susceptibility of vegetation to fire. Additional natural agents can be responsible for igniting fires, including lightning, sparks generated by rocks rolling down a slope, friction produced by branches rubbing together in the wind, and spontaneous combustion.

Arson and accidents, including sparks from equipment and vehicles, can also cause prairie fire. Human-caused fires are typically worse than those caused by natural agents. Arson and accidental fires usually start along roads, trails, streams, or at dwellings that are generally on lower slopes or bottoms of hills and valleys. Nurtured by updrafts, these fires can spread quickly uphill. Arson fires are often set

deliberately at times when factors such as wind, temperature, and dryness contribute to the spread of flames.

Local impacts from prairie fire events include the following:

- Loss of life (human, livestock, wildlife)
- Damage to municipal watersheds
- Loss of property
- Evacuations
- Transportation interruption (closing highways)
- Reductions in air quality and human health
- Injuries – burns, smoke inhalation, etc.
- Coal seam or other energy facility ignitions
- Loss of vegetation (erosion, loss of forage and habitat for livestock and wildlife)
- Expense of responding (equipment, personnel, supplies, etc.)
- Loss of revenue from destroyed recreation and tourism area

Predicting the intensity of a prairie fire, its rate of spread, and its duration are important for wildfire mitigation activity, response, and firefighter safety. Listed below are the three key factors affecting prairie fire behavior in the Wildland Urban Interface (WUI). Very often, however, the only factor that a community can have direct influence over is fuel.

1. **Fuels:** The type, density, and continuity of surrounding vegetation and, sometimes, flammable structures, that provide fuel to keep a wildfire burning. Fuels consist of combustible materials and vegetation (including grasses, leaves, ground litter, plants, shrubs, and trees) that feed a fire.
2. **Weather:** Relative humidity, wind, and temperatures all affect wildfire threat and behavior.
3. **Topography:** The steepness and aspect (direction) of slopes, as well as building-site locations, are features that affect fire behavior.

Wildfires are often rated based on their ability of their fuels to ignite. Descriptions for the commonly used "Fire Danger Rating" system are listed below:

- **Low:** Fuels do not ignite readily from small firebrands. However, an intense heat source, such as lightning, may start fires in duff or rotted wood. Fires in open grasslands may burn freely for a few hours after rain, but wood fires spread slowly by creeping or smoldering, and burn in irregular fingers. There is little danger of spotting.
- **Moderate:** Fires can start from most accidental causes, with the exception of lightning. Fires in open grasslands will burn briskly and rapidly on windy days. Timber fires spread slowly to moderately fast. The average fire is of moderate intensity, although heavy concentrations of fuel may burn hot. Short-distance spotting may occur. Fires are not likely to become serious and control is relatively easy.
- **High:** All fine dead fuels ignite readily and fires start easily from most causes. Unattended brush and campfires are likely to escape. Fires spread rapidly and short-distance spotting is common. High-intensity burning may develop on slopes or in concentrations of fine fuels. Fires may become serious and their control difficult unless they are attacked successfully while small.

- **Extreme/Very High:** Fires start easily from all causes and immediately after ignition, spread rapidly and increase quickly in intensity. Spot fires are a constant danger. Fires burning in light fuels may quickly develop intensity characteristics such as long-distance spotting and fire whirlwinds when they burn into heavier fuels.

For the purpose of prairie fire mitigation strategy development, this Plan divides the various land use types within Weld County into four categories: *cultivated agricultural land*, *forested land*, *grazing land*, and *miscellaneous*. Cultivated agricultural lands include both irrigated and non-irrigated crop land. Typically, this category of land has very dynamic burning characteristics and seasons. Crops and dormant stands located on Weld County's cultivated agricultural land can both serve as fuel for wildfires. What makes agricultural land unique is the dynamic nature of the fuel locations and seasons of availability. These factors add to the challenge of wildfire suppression and mitigation.

In the context of the Weld County landscape, forested land includes the riparian forest, windbreaks, shelterbelts, living snow fences, and urban forests. Much of the forested land in Weld County occurs along rivers, seasonal water courses, lakes, and ponds. Other forested lands include farmsteads and urban areas. Here, trees are often planted near homes and outbuildings, which contribute to elevated wildfire risk. In addition to the trees, forested lands include a surface cover of dry brush and grasses, which are primary fuel sources for rapidly moving fires.

Grazing lands are primarily made up of sandhill steppe and prairie landscapes. Sandhill steppe is a combination of mixed grasses and sage, and is widely used for livestock grazing. Fuel loads on grazing lands are moderate to heavy and large fires have occurred with this fuel type during springtime wind events. In some areas within Weld County livestock grazing maintains a rather sparse fuel load. Miscellaneous areas include transportation right of ways, fence lines, disturbed areas, and other locations that contain grasses, tumbleweeds, wild sunflowers, and other vegetation.

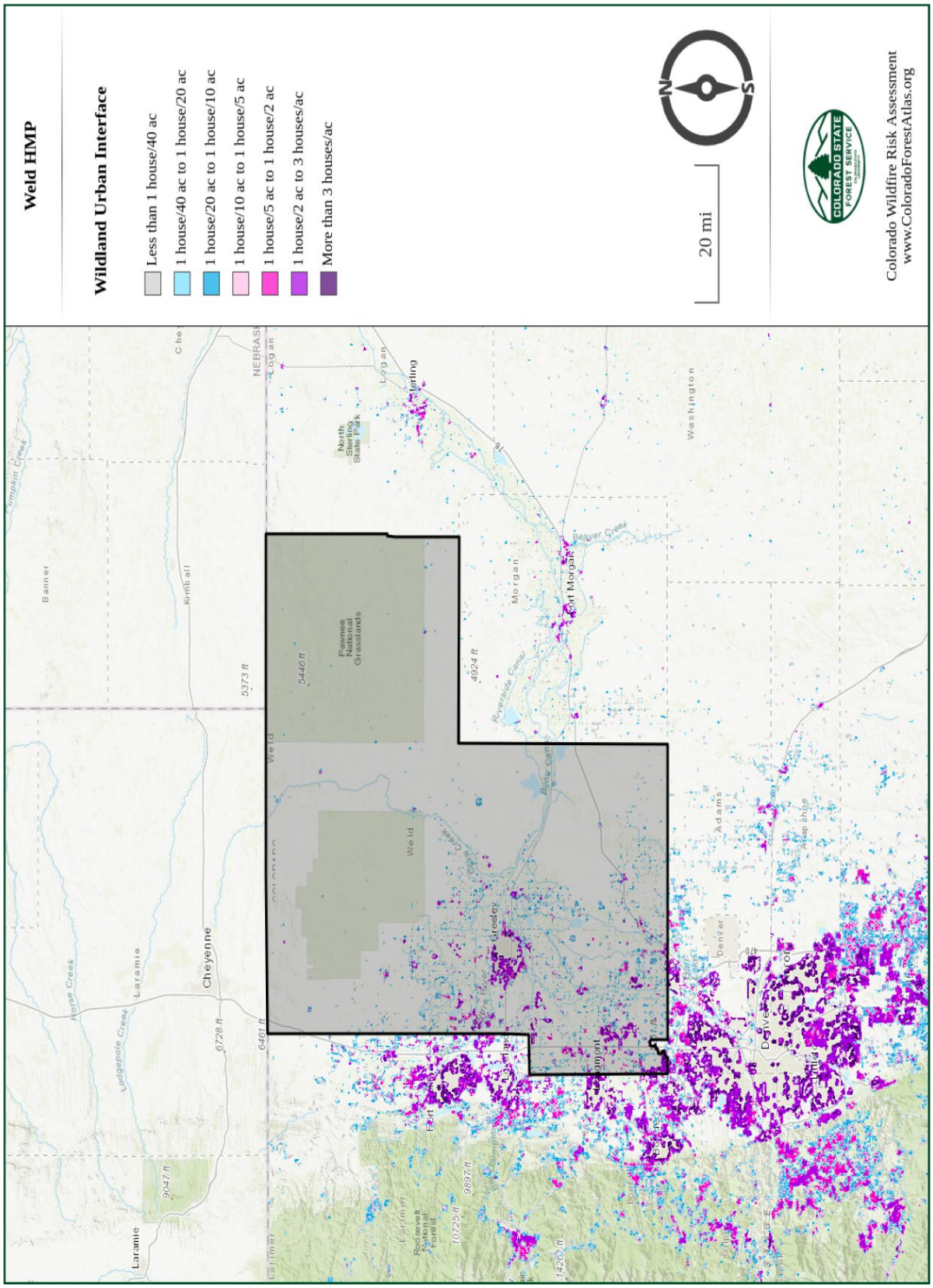
Long-term regional weather patterns in Colorado have followed a cyclical pattern of wet years (characterized by average to high precipitation levels for the region), followed by a series of drought years (characterized by below average precipitation levels). During wet years, the typical fire season is from March through November. During drought years, the fire season in Colorado has been as long as the full year.

Before discussing wildland fire risk in Weld County, a key wildfire management term must first be defined. The term "wildland-urban interface", or WUI, is widely used within the wildland fire management community to describe any area where manmade buildings are constructed close to or within a boundary of natural terrain and fuel, where high potential for wildland fires exist. Communities are able to establish the definition and boundary of their local WUI, and the boundaries often help in meeting local management needs.

As part of this Plan's risk assessment, the Colorado State Forest Service (CSFS) produced Weld County's Wildfire Risk Assessment Summary Report. This report provides many additional details pertaining to wildfire risk across the County. It has been included in Appendix E: Wildfire Risk Assessment Summary Report. Some pieces of this report are also included on the following pages. Readers can also visit the Colorado Forest Atlas to learn more and access a web viewer of these various risk maps.

Figure 55 provides an overview of Weld County's WUI. These areas have been identified mainly in the Southwestern quarter of the County.

Figure 55. Wildland-Urban Interface



"Wildfire Risk" represents the possibility of loss or harm occurring from a wildfire. It identifies areas with the greatest potential impacts from a wildfire, considering both WUI Risk, Drinking Water Risk, Forest Assets Risk, and Riparian Areas Risk.

Figure 56 identifies areas with the greatest potential impacts from a prairie fire, in other words, those areas most at risk. The highest wildfire risk areas are located in the Northwest corner of the County in addition to some areas in Southcentral Weld County.

Specific to WUI Risk, Figure 57 presents the CSFS data that rates the potential impact of a wildfire on people and their homes. This data identifies those areas of the County at the most risk, which can be seen to vary across much of the Western portion of the County.

Figure 56. Wildfire Risk

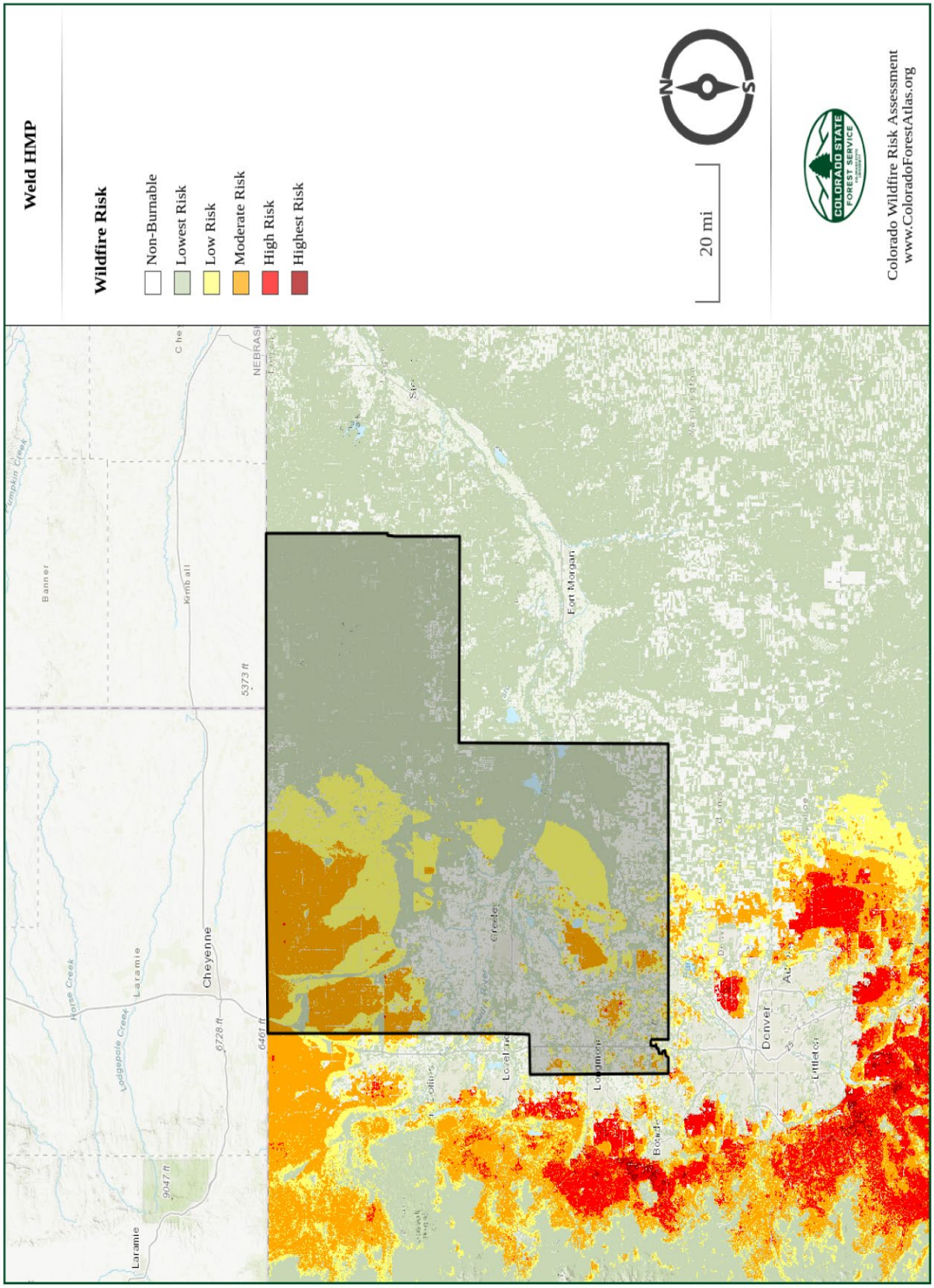
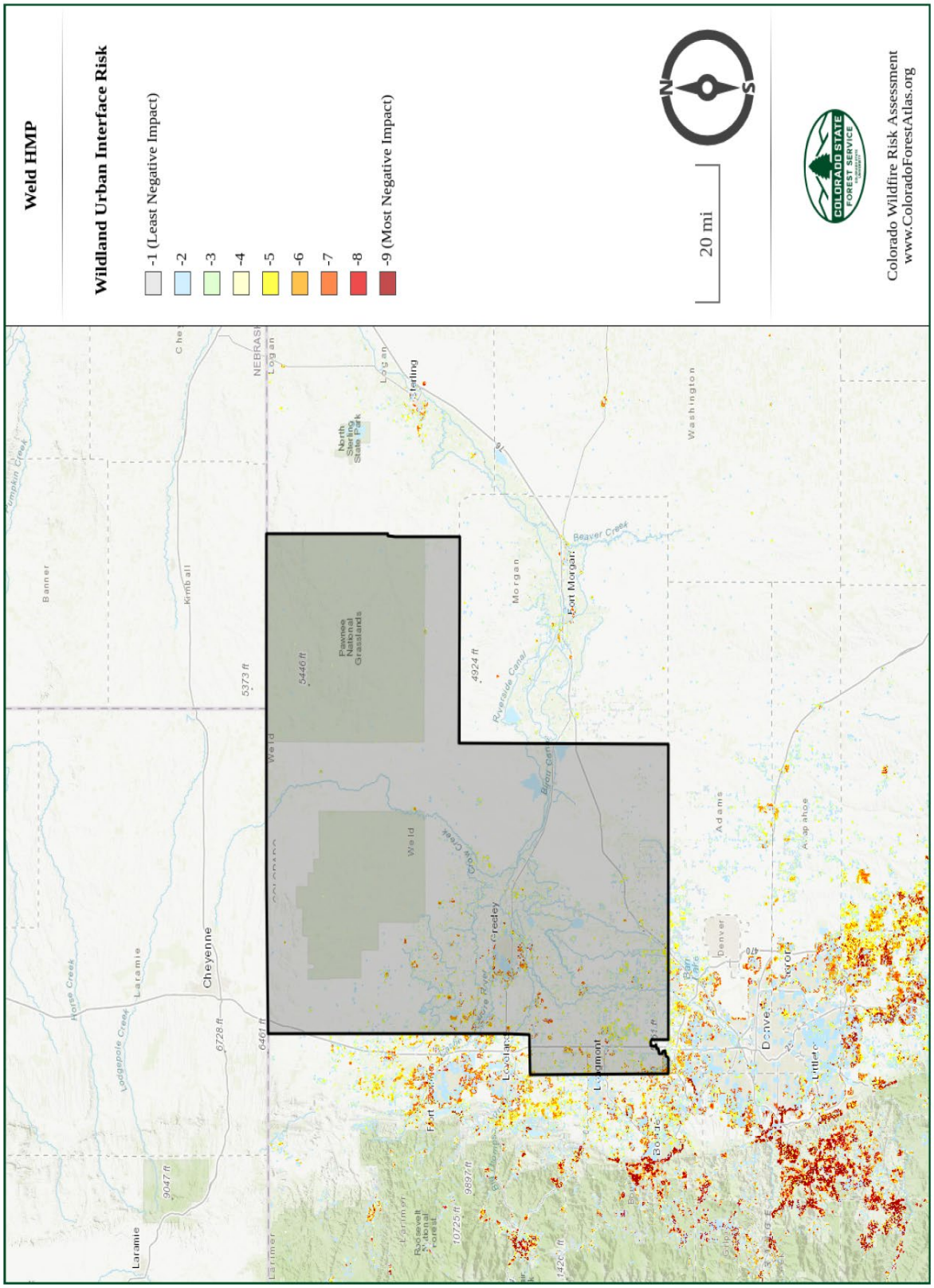


Figure 57. Wildland-Urban Interface Risk



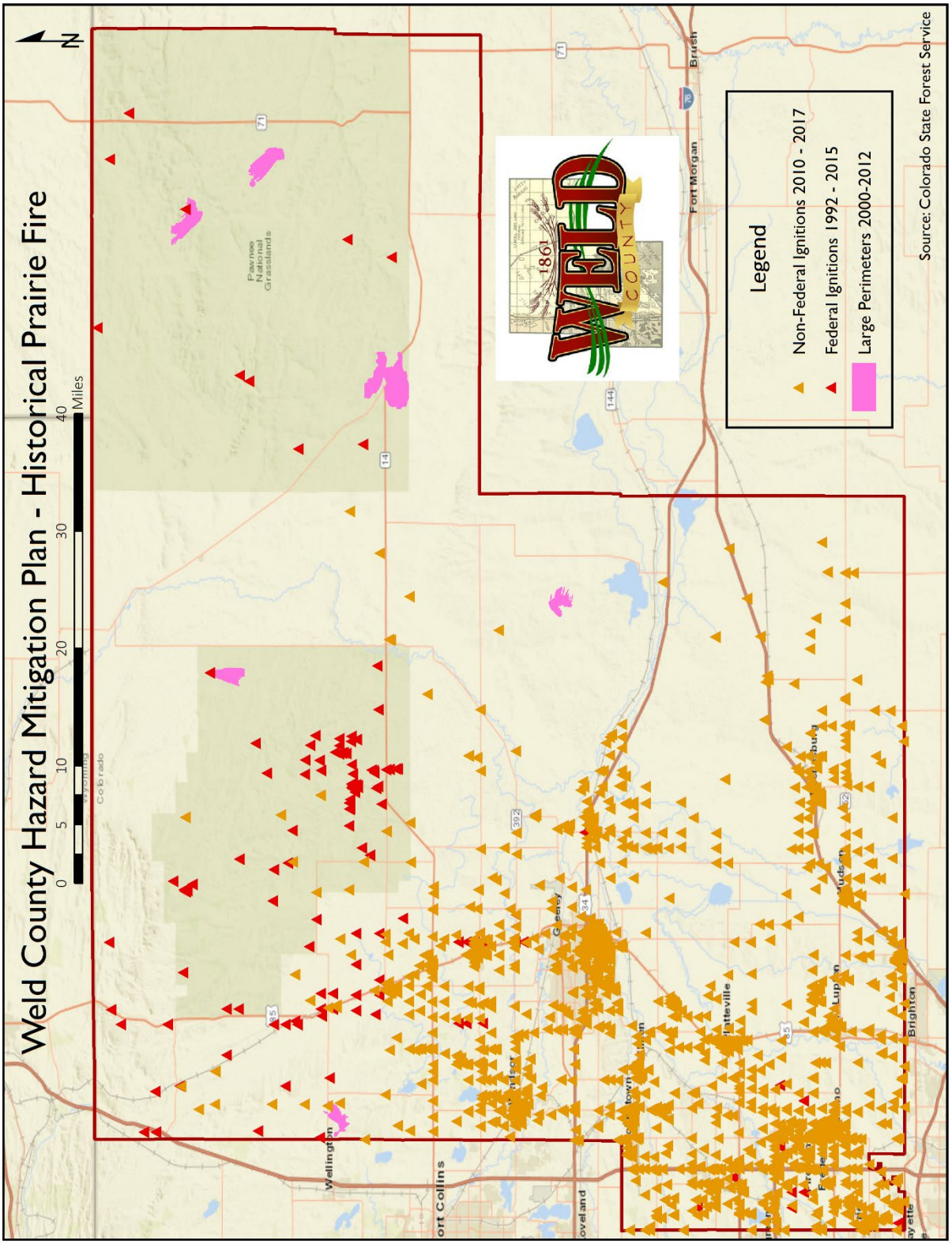
Wildfires can occur at any time of day and during any month of the year. Moreover, the length of a wildfire season and/or peak months may vary appreciably from year to year. As evidenced by the wildfire risk map, areas within Weld County that are characterized by dense development and single-family homes along the wildland-urban interface are most vulnerable to wildfire. The jurisdictions with the highest WUI Risk Index rating include areas of Erie, Hudson, Firestone, Frederick, Windsor, Greeley, and portions of unincorporated Weld County.

5.15.2 Previous Occurrences

Based on data provided by NOAA's NCEI Storm Events Database, there has been one prairie fire with reported damages in Weld County in recorded history. Damages were estimated to be $1.5M from this 9/12/2010 event in Northwestern Weld County.

Figure 58 presents historical wildfire ignitions, from both Federal and non-Federal lands. This data from the CSFS also included some of the largest perimeter fires to impact Weld County from 2000-2012. This shows that generally the largest fires occur on the eastern portion of the County, while the number of ignitions increase towards the more densely populated portions of Southwestern Weld County.

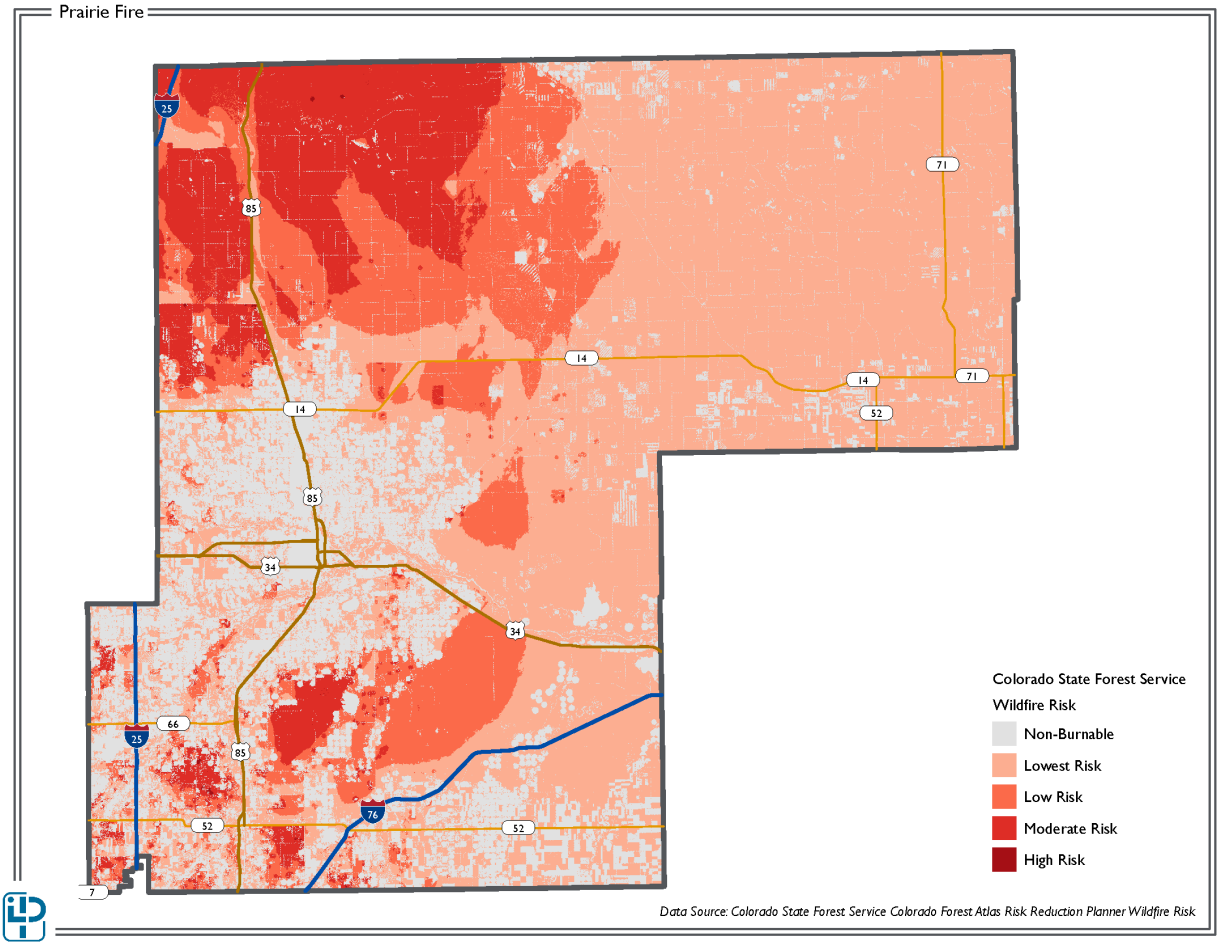
Figure 58. Historical Prairie Fires



5.15.3 Data Analytics

The input into the composite risk layer developed with the data analytics suitability model for prairie fire is shown in Figure 59.

Figure 59. Composite Risk Layer Prairie Fire Input



5.15.4 Inventory Exposed

Fires can extensively impact the economy of an affected area, including the agricultural, recreation and tourism industries, water resources, and the critical facilities upon which Weld County depends. A structure may be at risk to the impacts of prairie fire if it is located within the wildland urban interface (WUI). There are 67,562 address points across Weld County that are located in the WUI. This equates to 49.6% of all address points within the County.

5.15.5 Potential Losses

It is clear there is potential for large losses resulting from a wildfire event, as nearly 50% of the Weld County housing stock resides in the WUI. This would be in addition to the other Lifelines that are situated in these hazard areas.

5.15.6 Probability of Future Occurrences

Recent wildfires and brush fires across Colorado have forced school closures, disrupted telephone services by burning fiber optic cables, damaged railroads and other infrastructure, and adversely affected

tourism, outdoor recreation, and hunting. The likelihood of one of those fires attaining significant size and intensity is unpredictable and highly dependent on environmental conditions and firefighting response. Weather conditions, particularly drought events, increase the likelihood of wildfires occurring. That said, it is important to note that 98% of wildfires are human-caused. Ultimately, the occurrence of future wildfire events will strongly depend on patterns of human activity and events are more likely to occur in wildfire-prone areas experiencing new or additional development.

Reported non-Federal land ignitions in Weld County over the recent past provide an acceptable framework for determining the future occurrence in terms of frequency for such events. Based on historical record of 3,890 ignitions from 2010 - 2017, it can be reasonably assumed that a wildfire event has a large chance to develop across the County in any given year. The probability of the County and its municipalities experiencing a wildfire associated with damages or loss is a different question to quantify.

5.15.7 Land Use and Development

Future development is an important factor to consider in the context of wildfire mitigation because development and population growth can contribute to increased exposure of people and property to wildfire. During the past few decades, population growth in the Weld County WUI has increased greatly. Subdivisions and other high-density developments have created a situation where wildland fires can involve more buildings than any amount of fire equipment can possibly protect. As development in Weld County expands into wildland areas, people and property are increasingly at risk.

By identifying areas with significant potential for population growth and/or future development in high-risk areas, communities can identify areas of mitigation interest and reduce hazard risks associated with increased exposure.

Wildfire mitigation in the wildland-urban interface has primarily been the responsibility of property owners who choose to build and live in vulnerable zones. In practice, successful wildfire mitigation strategies can be quite involved. The most important aspect of successful suppression is disruption of the continuity of fuels, achieved by creating breaks or defensible areas. For interface fires, where homes and other structures fill the space, fuel reduction is best accomplished before the fires begin.

Safety zones can be created around structures by reducing or eliminating brush, trees, and vegetation around a home or facility. FEMA recommends using a 30-foot safety zone; including keeping grass below 2 feet tall and clearing all fallen leaves and branches promptly. Additionally, only fire-resistant or non-combustible materials should be used on roofs and exterior surfaces. Firebreaks -- areas of inflammable materials that create a fuel break and reduce the ability for fires to spread over roads and pathways -- can be planned and designed to serve as wildfire mitigation.

5.16 Public Health Hazards

HIGH RISK HAZARD

5.16.1 Hazard Identification

Public health hazards are those that can adversely impact the health and environment of a large number of people. These hazards can manifest as primary events by themselves, such as epidemics and pandemics, or they may be secondary to another disaster or emergency, such as a flood, severe storm, or hazardous materials incident. Environmental components of public health hazards that can affect the health of the community include air and water quality, which can be affected by pollutants, such as disease or smoke from a fire.

Public health hazards, including epidemics and pandemics, have the potential to cause serious illness and death, especially among those who have compromised immune systems due to age or underlying medical conditions. Emergency Support Function 8 (ESF 8) of the Weld County Emergency Operations Plan provides an organizational framework for public health and medical service preparedness, response, and recovery efforts for various emergency epidemics.

A pandemic can be defined as a disease that attacks a large population across great geographic distances. Pandemics are most often caused by new subtypes of viruses or bacteria for which humans have little or no natural resistance. Consequently, pandemics typically result in more deaths, social disruption, and economic loss than epidemics. Epidemics tend to occur seasonally, affect much smaller areas and fewer members of the community.

According to data from the Colorado Reportable Disease Statistics (CDPHE) database, Influenza viruses represent the most common cause of hospitalization due to disease in Weld County. Seasonal influenza (often referred to as the flu) is a common infection that affects large numbers of people in Colorado every year. Influenza is an acute respiratory disease caused by influenza type A or B viruses. The typical features of seasonal influenza include abrupt onset of fever and respiratory symptoms such as cough, sore throat, as well as headache, muscle ache, and fatigue. For seasonal influenza, the incubation period ranges from 1 to 4 days and the clinical severity of infection can range from asymptomatic infection to primary viral pneumonia and death. Most people experience influenza as a very uncomfortable, but ultimately benign illness. However, the influenza virus can mutate, causing it to be much more dangerous to humans. Yearly seasonal influenza remains a significant disease in the U.S. and Colorado, and seasonal epidemics can result in high morbidity and mortality, as well as create strains on the health care system and communities.

A new virus emerged in China in December 2019 and was named the 2019 Novel Coronavirus (COVID-19). In Weld County, the first COVID-19 case presented on March 13th, 2020. Weld County saw rapid spread of the virus. As of 12/10/2020 there have been 16,578 reported cases across Weld County, resulting in 145 deaths.

The incubation period for COVID-19 can be from 1 to 14 days. Risk of contraction has been tied to proximity to others and exposure to respiratory droplets. Initial common symptoms can include a dry cough, fever, fatigue, difficulty breathing or shortness of breath and loss of sense of taste and smell. People may be asymptomatic, which means a positive result for the virus, but having no recognizable symptoms, and still be active spreaders of the virus. In the case of contracting the virus, one is considered no longer contagious after 10 days since symptoms first appeared, 24 hours with no fever,

without the use of fever-reducing medications, such as acetaminophen or ibuprofen and other symptoms are improving. The disease can range from mild fatigue and discomfort to rapid deterioration of the person's health, resulting in hospitalization and often being put on a ventilator. While most cases resolve in a reasonable amount of time, many people have been sick for a duration of multiple months. Once cleared of the virus, many people are seeing long term negative impacts to their health and a very slow return to regular functioning in day to day life.

In 2009, the World Health Organization (WHO) updated their phase descriptions in the pandemic alert system plan. While this plan was written for an influenza pandemic, the phases also correlate to other zoonotic or emerging diseases and therefore apply to the COVID-19 pandemic. Zoonotic diseases are diseases that can be spread from animals to humans. These diseases can be caused by bacteria, viruses, parasites, and fungi that are carried by animals and insects.

These phases can be utilized for any emerging disease to gauge the awareness and response of public health organizations. The six-phase approach was designed for the easy incorporation of recommendations into existing national and local preparedness and response plans. Phases 1—3 correlate with preparedness in the pre-pandemic interval, including capacity development and response planning activities, while Phases 4—6 signal the need for response and mitigation efforts during the pandemic interval.

Pre-Pandemic Interval

In nature, diseases circulate continuously among animals (primarily birds). Even though such viruses might develop into pandemic viruses, in Phase 1 no viruses circulating among animals have been reported to cause infections in humans.

- **Phase 1** is the natural state in which diseases circulate continuously among animals but do not affect humans.

In Phase 2 an animal diseases virus circulating among domesticated or wild animals is known to have caused infection in humans and is thus considered a potential pandemic threat.

- **Phase 2** involves cases of animal diseases that have circulated among domesticated or wild animals and have caused specific cases of infection among humans.

In Phase 3 an animal or human-animal disease has caused sporadic cases or small clusters of illness in people, but has not resulted in human-to-human transmission sufficient to sustain community-level outbreaks. Limited human-to-human transmission may occur under some circumstances, for examples, when there is close contact between an infected person and an unprotected caregiver. Limited transmission under these circumstances does not indicate that the virus has gained the level of transmissibility among humans necessary to cause a pandemic.

- **Phase 3** represents the mutation of the animal disease in humans so that it can be transmitted to other humans under certain circumstances (usually very close contact between individuals). At this point, small clusters of infection have occurred.

Pandemic Interval

Phase 4 is characterized by verified human to human transmission of the disease, able to cause "community-level outbreaks." The ability to cause sustained disease outbreaks in a community marks a significant upward shift in the risk for a pandemic.

- **Phase 4** involves community-wide outbreaks as the disease continues to mutate and become more easily transmitted between people (for example, transmission through the air)

Phase 5 is characterized by verified human to human spread of the disease into at least two countries in one World Health Organization (WHO) region. While most countries will not be affected at this stage, the declaration of Phase 5 is a strong signal that a pandemic is imminent and that the time to finalize the organization, communication, and implementation of the planned mitigation measures is short.

- **Phase 5** represents human-to-human transmission of the disease in more than one country of one WHO region

Phase 6, the pandemic phase, is characterized by community-level outbreaks in at least one other country in a different WHO region in addition to the criteria defined in Phase 5. Designation of this phase will indicate that a global pandemic is underway.

- **Phase 6** is the pandemic phase, characterized by community-level disease outbreaks.

Additionally, there are two periods after the phases, which describe the decline of cases of disease. These include:

- **Post-Peak Period**, when levels of the pandemic disease in most countries with adequate surveillance have dropped below peak level.

- **Post-Pandemic Period**, levels of disease activity have returned to levels seen for seasonal influenza or illness in most countries with adequate surveillance.

5.16.2 Previous Occurrences

Public health hazard occurrences range from common to relatively rare. Diseases can greatly impact the public health and health care system, but the vast majority of these are known reportable diseases, which may have outbreaks but do not reach epidemic or pandemic levels. These case numbers are required to be submitted to the state to help track which diseases are impacting the population most in the County. Also commonly known are the hazards to public health that follow a disaster, such as flood or earthquake, which are well documented and prepared for.

Pandemics are the rarest disease occurrence and other than the current global health situation with COVID-19, there was only one other pandemic in the last 50 years. As we are still in the midst of the COVID-19 pandemic, additional details of this event will be added in future Plan updates.

The influenza virus, H1N1, came to the world's attention in March 2009. The symptoms of pandemic H1N1 2009 influenza were similar to those of seasonal influenza. Illness in most cases was mild, but there were cases of severe disease requiring hospitalization and a number of deaths. While no cases were reported in Weld County in 2009, a hospitalization, resulting in death, did occur in 2013. The H1N1 virus no longer presents a widespread threat due to an available vaccine.

The Colorado Department of Public Health and Environment (CDPHE) releases an annual reportable disease summary for each county. The events with the highest incidences in Weld County between 2014 and 2017 are summarized in Table 55.

Chronic Hepatitis C and influenza resulting in hospitalizations represent the largest disease incidence in Weld County between 2014 and 2017.

Table 55. Colorado Reportable Disease Statistics (CDPHE), Weld County

Disease	2014	2015	2016	2017	Total
Animal Bites	38	33	92	98	261
Campylobacter	56	83	108	117	364
Cryptosporidiosis	5	9	10	17	41
Giardiasis	11	9	11	15	46
Haemophilus Influenzae	2	4	6	7	19
Hepatitis B, Chronic	7	24	29	16	76
Hepatitis C, Chronic	100	116	163	214	593
Influenza- Hospitalized	200	80	90	204	574
Pertussis	183	57	34	14	288
Salmonellosis	33	40	42	48	163
Shigellosis	3	4	9	9	25
STEC (Shiga Toxin producing E.coli)	8	17	15	*	40*
Strep Pneumo Invasive	24	28	31	34	117
Varicella (Chicken Pox)	12	17	20	19	68
West Nile Virus	20	10	27	14	71
Total:	**702**	**531**	**687**	**826**	**2746**

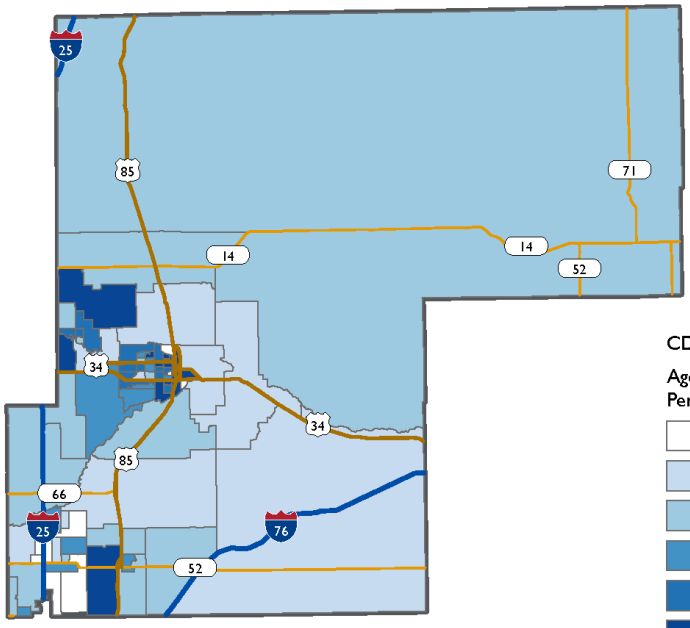
*Source: Division of Disease Control and Environmental Epidemiology, CDPHE Note: * indicates no data for this year*

5.16.3 Data Analytics

The input into the composite risk layer developed with the data analytics suitability model for public health hazards is shown in Figure 60.

Figure 60. Composite Risk Layer Public Health Hazards Input

Public Health

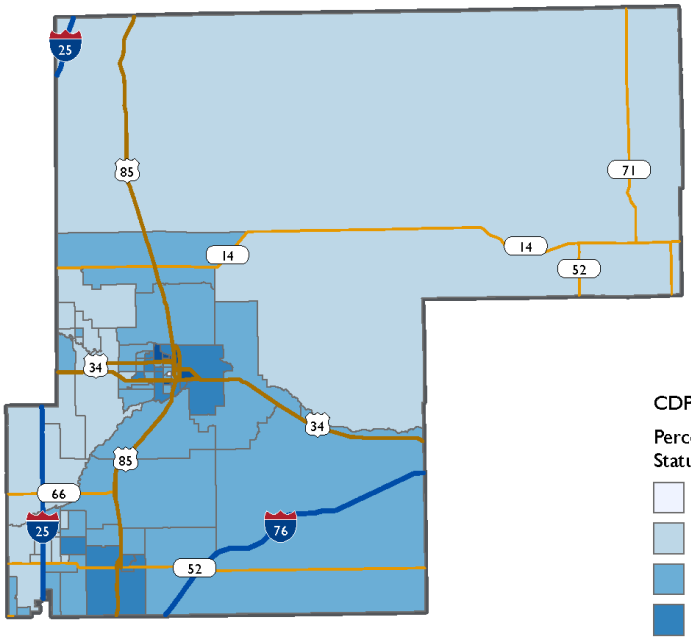


CDPHE Influenza Hospitalizations

Age-Adjusted Influenza Hospitalization Rate Per 100,000 Persons

- No Data
- 0 to 35
- 35 to 45
- 45 to 60
- 60 to 90
- 90 to 290

Data Source: Colorado Department of Public Health and Environment Influenza Hospitalizations



CDPHE Adult Health Status

Percent of Adults with Fair or Poor Perceived Health Status

- 0 to 12
- 12 to 14
- 14 to 16
- 16 to 18
- 18 to 23

Data Source: Colorado Department of Public Health and Environment Health Status in Adults

5.16.4 Inventory Exposed

Public health hazards by nature are a concern for all populations. However, when considering the entire population, hazards can have a greater effect on certain subgroups and it is important to understand the proportion these groups account for in the whole population. In the Weld County community, the most at-risk members are:

- The elderly (people over 65 years of age)
- Children (under 5 years old)
- Those with pre-existing and/or chronic conditions (i.e. asthma, diabetes and heart disease)

The following table highlights the demographic data for Weld County residents within these categories.

Table 56. At-Risk Population Data

Demographic	Unincorporated Weld County	Colorado	United States
Population	324,492	5,758,736	328,239,523
Age: 4 and Under (%)	7.1	5.8	6
Age: Under 18 (%)	25.9	21.9	22.3
Age: 65 and Over (%)	12.4	14.6	16.5
Persons in Poverty (%)	10.5	9.3	10.5
Persons with a Disability (%)	10.2	19.1	26
Persons Age 65+ with a Disability (%)	35.4	32.2	43.8
Adults who are Obese or Overweight (%)	64.47	57.4	71.3
Adults with Diabetes (%)	8.6	7.3	8.2
Adults with Asthma (%)	9.22	9.1	7.7
Adults with Coronary Heart Disease (%)	3.27	2.7	4.2

Source: American Community Survey, U.S. Census Bureau (2013-2019), Colorado Behavioral Risk Factor Surveillance System (2014-2019), Colorado Birth Dataset, Vital Records (2013-2017)

5.16.5 Potential Losses

COVID-19 has shown the sweeping impacts a pandemic can have on a community and the economy. These impacts result from people becoming ill and being unable to work, but also due to public health measures put in place to protect the rest of the population from becoming ill. With the public health COVID-19 response, communities were placed into lockdown to limit spread of the virus, businesses had to temporarily shut their doors to minimize community interaction.

The results of these actions are difficult to quantify at the time of this report, as the pandemic continues to spread in communities and there are some restrictions still in place at varying levels in different communities. However, many businesses, such as retail stores and restaurants do not have the capital to remain closed for extended periods of time or to function at lower capacities to ensure public health guidelines are followed. The number of businesses that will not be able to maintain long-term operations or reopen at all will likely grow.

As businesses have been either restricted in their operations or unable to reopen, many members of the community have become unemployed. Data from the US Bureau of Labor Statistics shows that the unemployment rate in Weld County in February 2020, prior to the first COVID-19 case in March, was 2.9% and reached a high of 10.1% in June 2020. Per the most recent available data at the time of this

report, the August 2020 rate has declined to 6.6%. Weld County lifted public health restrictions on businesses and restaurants in April 2020.

For an overall picture, in the 2020 annual report for the state, from the Colorado Business Economic Outlook Committee, the projected outlook was for a loss of 128,500 (-4.6%) jobs, spanning every major industry. It is difficult to pinpoint the accuracy of these projections down to the County or municipality level, especially as each jurisdiction made decisions about reopening and guidelines specific to their community.

Due to the closures there may be a resulting drop in revenue for businesses and the possible loss of sales taxes for municipalities may have a noticeable long-term impact. Weld County does not have a sales tax and the majority of tax revenue comes from property taxes on lands used for oil production. These taxes are based on a two-year cycle, so the County may not see impacts until 2022, at which point the expected drop in revenue due to the pandemic, which suppressed the global demand for fuel, may have severe effects.

5.16.6 Probability of Future Occurrences

Public health hazards will continue to occur with numerous impacts to communities. Of the various types of public health hazards, the scale and type of hazard should always be considered when determining risk to the population. While many public health hazards typically have small scopes, it is important to recognize the magnitude of impact to the community, including cascading effects to other communities and long-term consequences.

The increase in global transport, as well as urbanization, can introduce new diseases in and around Weld County, which makes epidemics likely to occur. While not every new disease turns into an epidemic or a pandemic, there is no way to predict which diseases will.

The spread of infectious diseases is likely to increase, as future conditions affect temperature, precipitation, and humidity levels which allow disease carrying vectors and pathogens to come into closer contact with humans. Human population growth and expansion of humans into previously uninhabited areas can increase the risk of exposure to animals and disease transmission.

The highest probability of increased occurrences is in existing reportable disease cases. For example, mosquitoes capable of transmitting West Nile virus are already present in Colorado. An impact specific to agricultural areas is irrigation for crops, which can be a breeding ground for mosquitoes which carry West Nile virus and increased irrigation could lead to higher population numbers.

5.16.7 Land Use and Development

Future development in and around Weld County has the potential to change how infectious diseases spread through the community and impact human health in both the short and long term. New development may increase the number of people and facilities exposed to public health hazards and greater population concentrations put more people at risk.

5.17 Severe Storm (Including Hail, Lightning & Winter Storm)

HIGH RISK HAZARD

5.17.1 Hazard Identification

Severe storms, including thunderstorms, hail, lightning, and winter storms, occur throughout the year in Weld County. While each hazard occurs typically during a particular part of the year, changes in climate are increasing the likelihood of more sporadic events.

Severe thunderstorms are categorized as such, by the National Weather Service, if hail at least 3/4 inch in diameter is produced, winds are 58 MPH or stronger, or a tornado is present. The typical thunderstorm is 15 miles in diameter and lasts an average of 30 minutes. Thunderstorms create the conditions for hail and lightning based on the types of precipitation present, the various air temperatures and the characteristics of the wind. While a severe thunderstorm carries excessive winds, there are many thunderstorms which can still produce hail at winds speeds that can cause significant damages and safety concerns.

Hail is a frequent and damaging weather event in the region for property, livestock, and crops, as well as the danger it poses to human safety. Hail is a precipitation that is formed when updrafts in thunderstorms carry raindrops upward into extremely cold areas of the atmosphere. The super cooled raindrops grow into balls of ice, which are a potential hazard when they fall back to the earth.

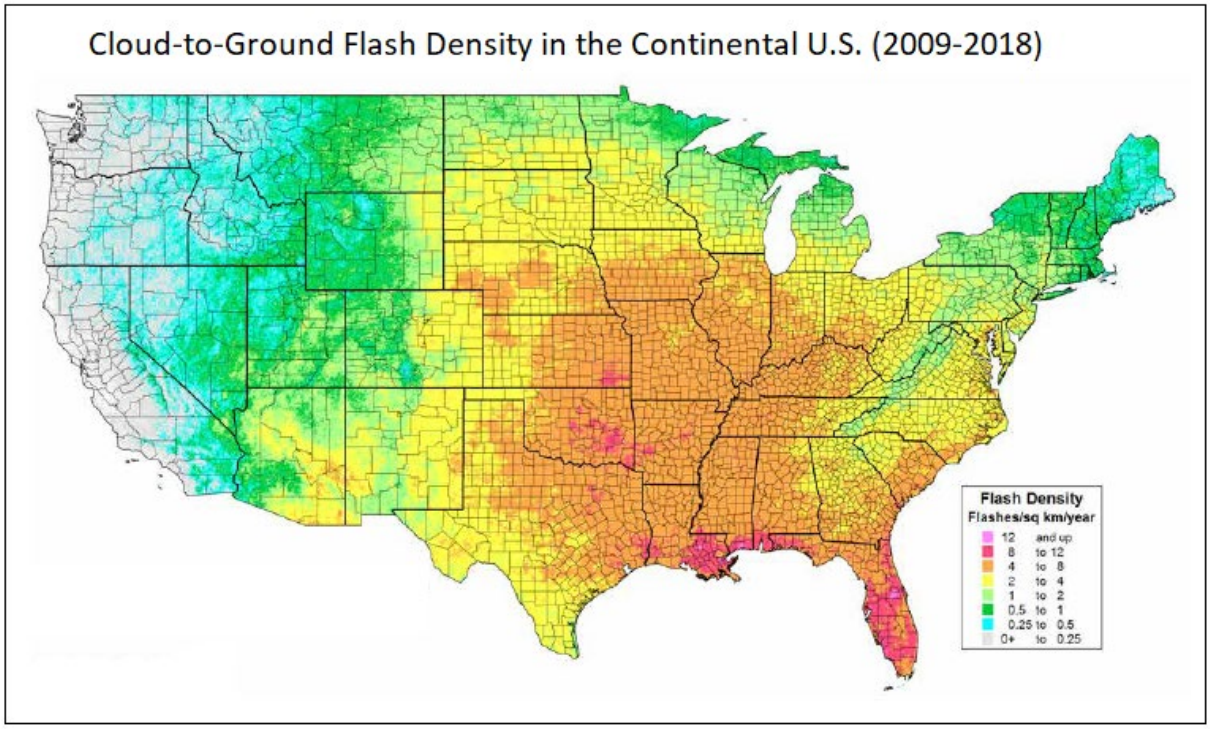
Hail season in Weld County is typically between March and October. The County sees hailstones from <1" up to 3" during a typical year. Hailstones can result in extreme damages, injuries and sometimes death. In 2019, the largest size hailstone record in Colorado was broken, when a hailstone weighing over half a pound and 4.83 inches in diameter was discovered.

Lightning may accompany hail and develops when ice particles in a cloud collide with other particles causing a separation of electrical charges. Positively charged ice particles rise to the top of the cloud and negatively charged ones fall to the middle and lower sections of the cloud. The negative charges at the base of the cloud attract positive charges at the surface of the Earth. Invisible to the human eye, the negatively charged area of the cloud sends a charge, called a stepped leader, toward the ground. Once it gets close enough, a channel develops between the cloud and the ground. Lightning is the electrical transfer through this channel. The channel rapidly heats to 50,000 degrees Fahrenheit and contains approximately 100 million electrical volts. The rapid expansion of the heated air causes thunder.

The state of Colorado ranks 32nd in terms of its cloud-to-ground lightning flash densities between 2009-2018. Unfortunately, the state ranks 4th in the country in terms of lightning death rate per million (0.81) people from 1959-2016. However, it is worth noting over that time period, there were 146 deaths total in Colorado. Lightning deaths are rare, but the risk increases due to the large amounts of outdoor recreation and outdoor workers. Since 1983, Weld County has had 11 injuries and 1 death due to lightning.

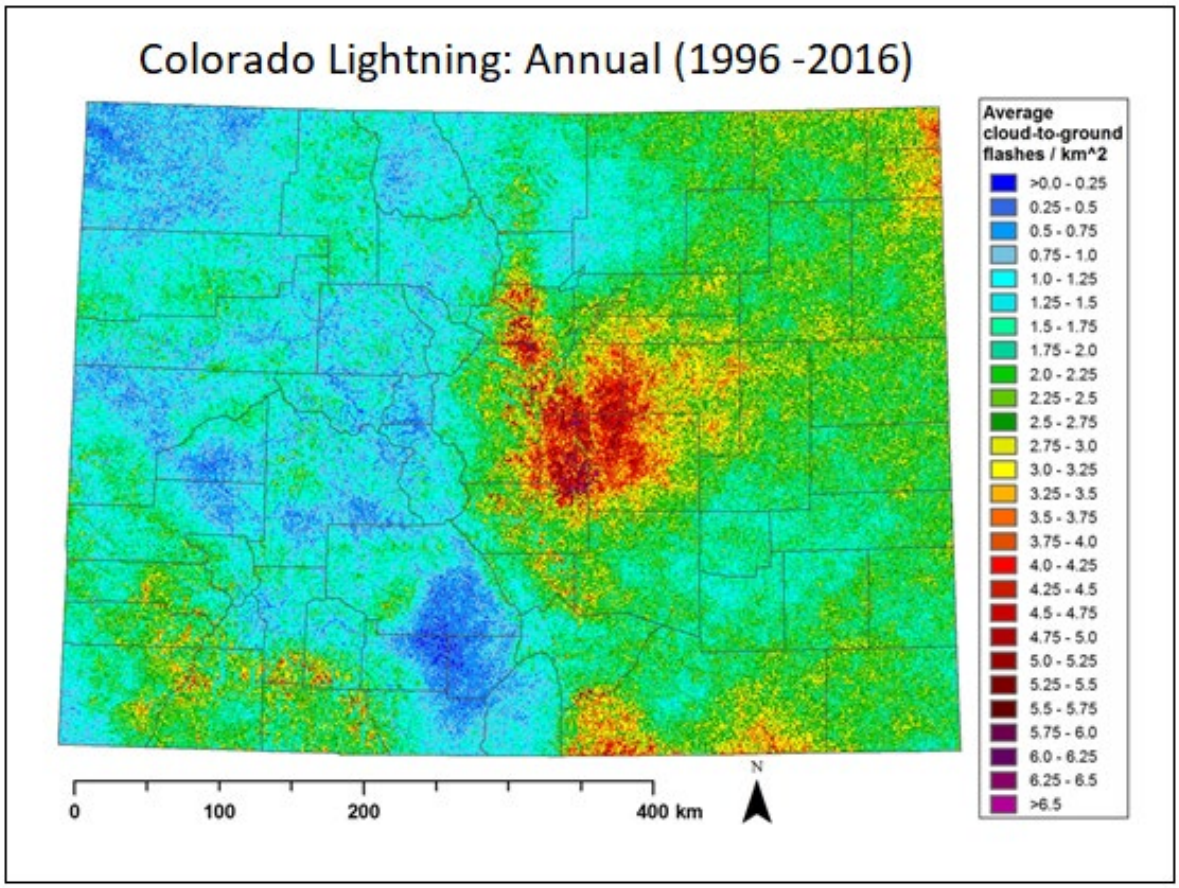
The U.S. National Lightning Detection Network (NLDN) tracks the average cloud-to-ground lightning flash densities in the US, also called lightning incidence. Figure 61 shows the US data for 2009-2018 and Figure 62 shows the data for Colorado between 1996-2016. These images are the result of contouring millions of cloud-to-ground lightning flashes and averaging annually.

Figure 61. Average Lightning Flash Density in the U.S.



Source: Vaisala National Lightning Detection Network

Figure 62. Colorado Lightning Flash Density Map



Source: Vaisala National Lightning Detection Network

The flash density maps show a wide range of values across the US and the state of Colorado. Weld County, which is 10,400 km^2, has roughly between 1.0 and 2.75 flashes/year/km^2 on average, depending on location.

Winter weather events encompass a number of types of weather occurrences. Winter weather in Colorado is typically relatively mild, however large weather events are known to impact safety, business continuity and the integrity of lifeline infrastructure, such as communications and electrical power supply. Each event carries its own specific characteristics, some posing more hazards than others and it is important to consider the impacts to your community for the entire spectrum of events.

The NCEI storm database tracks historical cold weather conditions and these are broken down based off the elements of the weather event.

Winter weather is an event in which there is freezing rain or when 2-4 inches of snow (alone or in combination with sleet and freezing rain) is expected to cause inconvenience for community members.

Winter storm is a weather event which has more than one significant hazard (a combination of two or more of the following: snow, heavy or blowing snow, ice or sleet) and meets or exceeds 12 and/or 24 hour local warning criteria for at least one of the precipitation elements. Normally a winter storm would pose a threat to life or property.

Blizzard is a life-threatening event produced by a combination of falling or blowing snow, and high winds, typically 35 mph or more, reducing visibility to 1/4 mile or less for at least 3 hours. These winds can contribute to dangerous wind chill temperatures, however there is not a temperature or snowfall requirement that must be met to achieve blizzard conditions. Ground blizzards can develop when strong winds lift snow off the ground and severely reduce visibilities. The combination of these elements can create potentially deadly travel conditions with impassable roads and zero visibilities.

Heavy snow, in large quantities, may fall during winter storms. Six inches or more in 12 hours or eight inches or more in 24 hours constitutes conditions that may significantly hamper travel or create hazardous conditions. The National Weather Service issues warnings for such events. Smaller amounts can also make travel hazardous, but in most cases, only results in minor inconveniences. Heavy wet snow before the leaves fall from the trees in the fall or after the trees have leafed out in the spring may cause problems with broken tree branches and power outages.

Ice storms are the result of significant accumulation of freezing rain, which lasts several hours. Freezing rain occurs when snowflakes descend into a warmer layer of air and melt completely. When these liquid water drops fall through another thin layer of freezing air just above the surface, they do not have enough time to refreeze before reaching the ground. Because they are "supercooled," they instantly refreeze upon contact with anything that that is at or below 32°F, creating a glaze of ice on the ground, trees, power lines, or other objects. Thick, heavy accumulations of ice can bring down trees and power lines, which makes already dangerous driving and walking more hazardous.

Extreme Cold, poses risks to people, property, livestock, and crops across Weld County. When temperatures become colder than is normal for an area, for an extended period of time, the dangers to the community may not be immediately apparent. Cold temperatures and wind combine to create dangerous wind chill temperatures, which are a critical factor in deciding the safety of the outside weather. These temperatures can be life threatening if exposed for extended periods of time. See the Extreme Temperatures section of the Plan for more specifics about the hazards to the County.

5.17.2 Previous Occurrences

Hail

Hail can be difficult to accurately quantify, as it relies on public reporting and monitoring by various weather organizations, Therefore, there is a high population bias with hail reports. A majority of reports align with cities and major roadways, while less reports come from rural areas but not necessarily less hail.

The eastern portion of Colorado is considered a "hot spot" for severe weather. For Weld County, this means that over 500 hail events were reported between January 1996 and August 2020, making it likely there will be more hailstorms in the future.

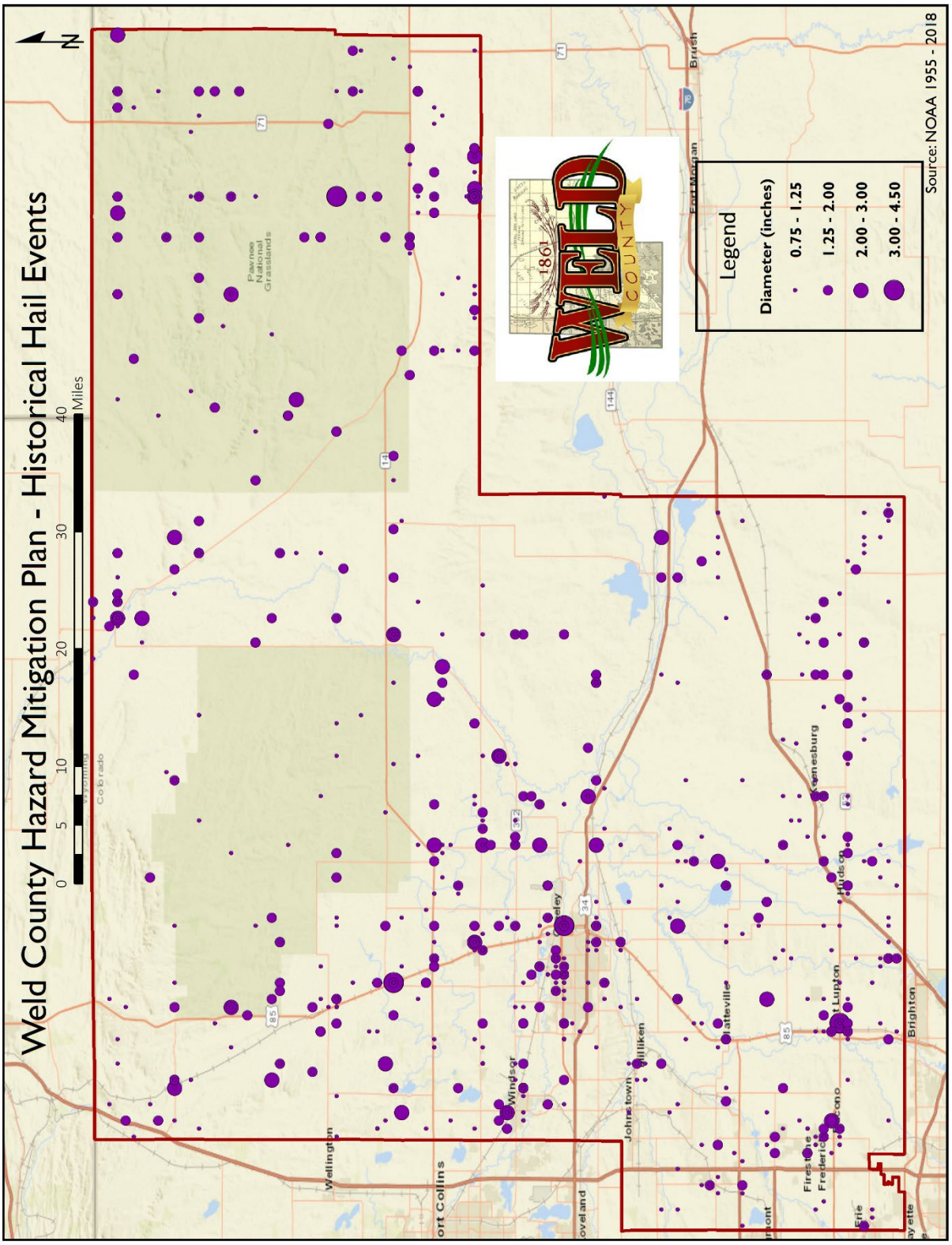
Table 57. Historic Hail Events Reporting Losses in Weld County

Date	Location	Hail Size Diameter (in)	Damage to Property
5/16/1991	Unincorporated Weld County	1.00	$4,000
5/31/1994	City of Greeley	0.75	$4,000
7/16/1994	Town of Windsor	1.25	$5,000
7/16/1994	Town of Eaton	2.50	$5,000

Date	Location	Hail Size Diameter (in)	Damage to Property
7/16/1994	Town of Eaton	2.00	$5,000
7/24/1994	Unincorporated Weld County	2.00	$3,000
7/24/1994	Unincorporated Weld County	1.75	$4,000
7/31/1996	Unincorporated Weld County	0.75	$200
6/23/1997	City of Greeley	1.50	$3,100
8/10/2004	Town of Eaton	2.00	$2,000
8/19/2016	City of Greeley	1.50	$15,000
Total			$50,300

Figure 63 presents the distribution and size of historical hail events across the County from 1955 - 2018. Although more likely to be reported if occurring in populated areas, the events on the map show that hail can impact every part of Weld County and its municipalities.

Figure 63. Historical Hail Events



Lightning

According to NCEI data, there were 27 lightning events between 1996 and 2019, in Weld County. These have resulted in 4 four injuries and 1 death. The resulting damages were $1,049,000 in property and $26,000 in damage to crops. The events which caused property and crop damage are summarized in Table *58*.

Table 58. Lightning Strikes Resulting Property or Crop Damages

Date	Location	Damage to Property	Damage to Crops
6/4/1996	Greeley	$50,000	$0
6/8/1996	La Salle	$1,000	$0
6/25/1996	Greeley	$0	$6,000
7/8/1997	Roggen	$100,000	$0
9/20/1998	Windsor	$500,000	$0
7/27/1999	Hudson	$100,000	$0
4/20/2000	Windsor	$200,000	$0
7/10/2001	Greeley	$40,000	$0
9/20/2010	Kersey	$0	$10,000
9/20/2010	Kersey	$0	$10,000
5/8/2017	Greeley	$5,000	$0
Total		**$9,000**	**$26,000**

Source: NOAA; NCEI Storm Events Database

Winter Storm

Historic winter weather data between January 1996 and June 2020, lists a total of 106 events in Weld County. Within those events, there were no reported injuries or deaths. As far as losses, there was no crop damage and $102,000 worth of property damage. Winter weather events, according to the NCEI Storm Events Database definitions include: winter storm, winter weather, blizzard and cold/wind chill. An event is recorded if there are more than one significant hazard (a combination of two or more of the following: snow, heavy or blowing snow, ice or sleet) and meets or exceeds local twelve or twenty-four hour warning criteria for at least one of the precipitation elements.

Table 59. Historic Winter Storms in the Weld County (1996 – 2020)

Period	Winter Weather	Winter Storm	Blizzard	Cold/ Wind Chill	Injuries	Deaths	Property Damage	Crop Damage
1996 - 2005	0	21	0	2	0	0	0	0
2006 - 2015	23	22	0	1	0	0	$102,000	0
2016- June 2020	18	12	7	0	0	0	0	0
Event Type Totals	**41**	**55**	**7**	**3**	**0**	**0**	**$102,000**	**0**
Total Events	**106**							

Source: NOAA; NCEI Storm Events Database

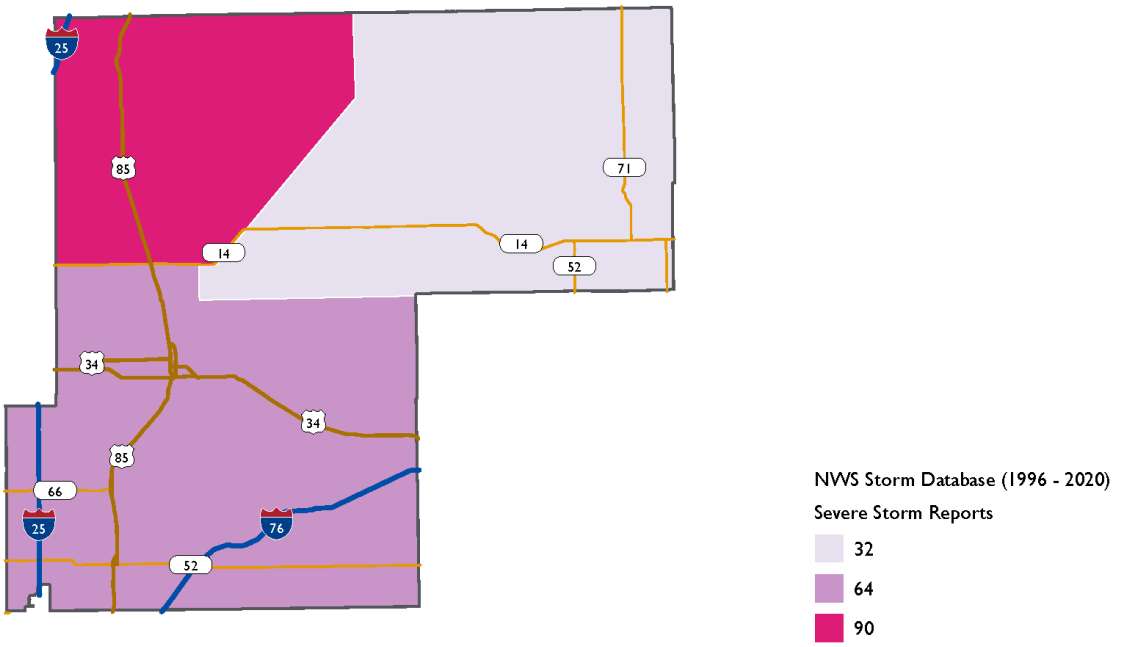
In March 2019, a bomb cyclone impacted large parts of the state, disrupting power, causing numerous multi-car accidents, and stranding 1,500 motorists across the state. A bomb cyclone is a storm characterized by a large, rapid drop in barometric pressure over 24 hours and wind gusts between 60-100 mph. The impacts of the bomb cyclone in Weld County began with beneficial steady rainfall and progressed to 54 mph wind gusts, whipping snow across roadways and crops. With a midday high temperature of only 29°F the event brought windchill temperatures of 10°F and below. While only 4.1 inches of snow fell in Greeley during the March event other towns got up to 9 inches. An April storm which was predicted to be similar to the bomb cyclone, brought 10 inches of snow to Greeley. The April storm was milder in winds with only 36mph wind gusts and less barometric pressure change, but had windchill temperatures of around 10°F.

5.17.3 Data Analytics

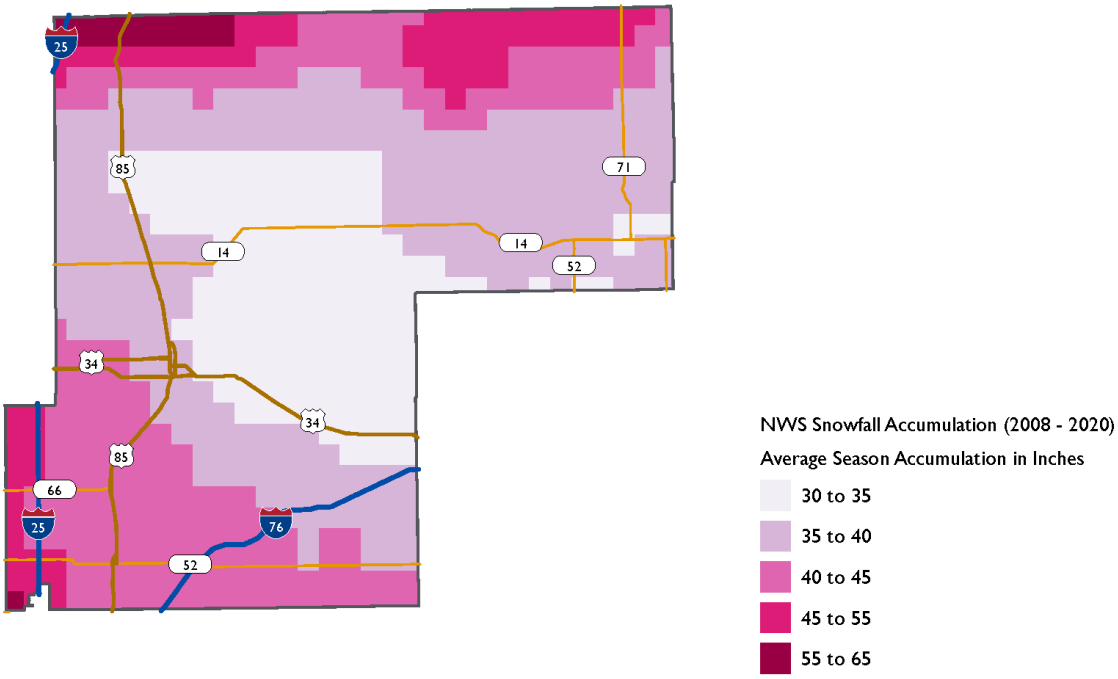
The inputs into the composite risk layer developed with the data analytics suitability model for severe storm are shown in the following Figures.

Figure 64. Composite Risk Layer Severe Storm Input 1

Severe Storm



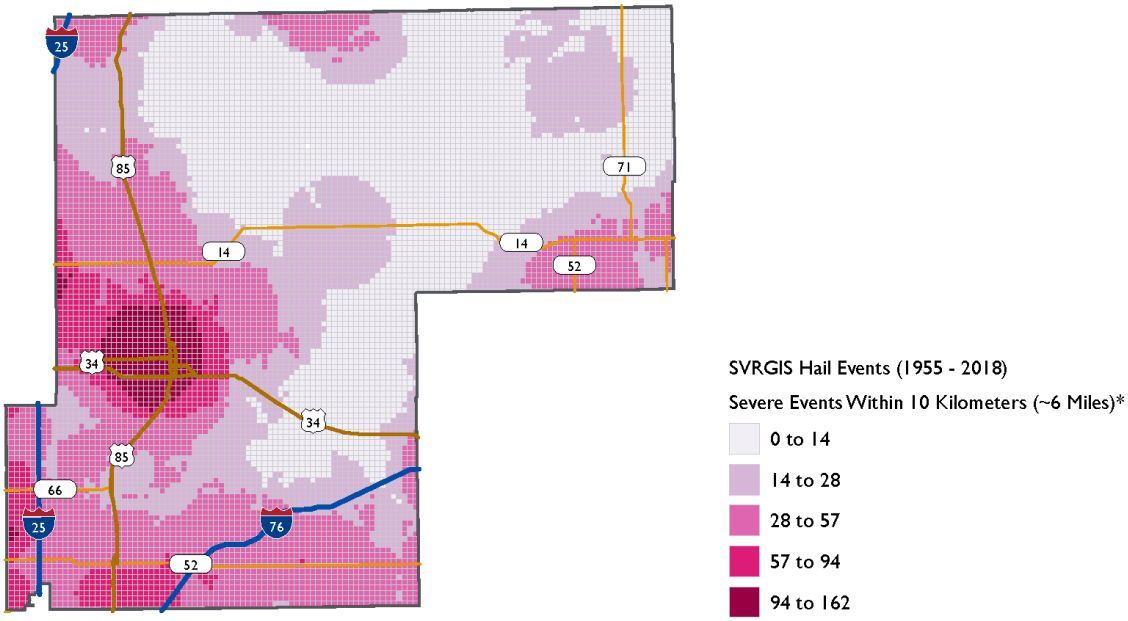
Data Source: National Oceanic and Atmospheric Administration National Centers for Environmental Information Storm Events Database



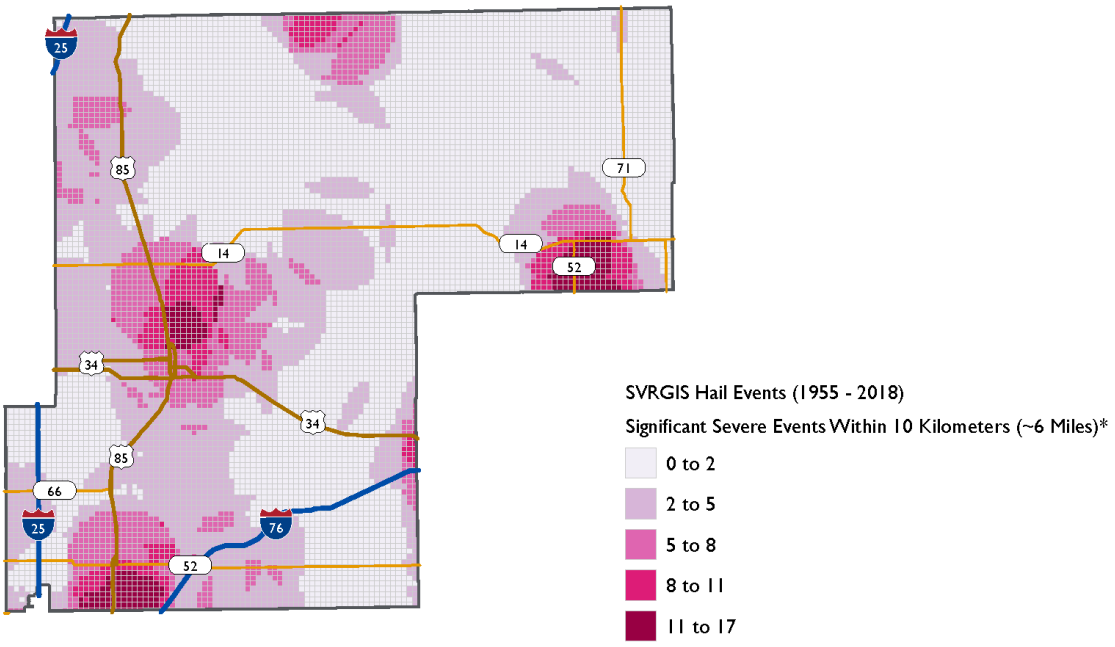
Data Source: National Oceanic and Atmospheric Administration National Operational Hydrologic Remote Sensing Center National Snowfall Analysis

Figure 65. Composite Risk Layer Severe Storm Input 2

Severe Storm



Data Source: National Oceanic and Atmospheric Administration Storm Prediction Center Severe Weather GIS Hail



Data Source: National Oceanic and Atmospheric Administration Storm Prediction Center Severe Weather GIS Hail

* Notes and Assumptions: Per NWS, the average hail swath is 6 miles long
NOAA defines severe hail events as storms that produce hail 1 inch in diameter or larger and significant severe hail events as storms that produce hail 2 inches in diameter or larger
Per NOAA, severe weather reports tend to cluster around population centers; the data generally matches the understanding of severe weather climatology, but may show a slight bias towards population centers

5.17.4 Inventory Exposed

The variety of severe storms that impact Weld County each year have diverse and sometimes harmful impacts on the community, property, crops, and livestock. While it is true that all inventory across the County could be impacted by these distinct weather events, generalizing these impacts can leave gaps in planning. When looking at each weather event, it is important to recognize the different risk levels of each hazard for specific inventory and assets. Damages may occur as a result of high winds, lightning strikes, hail, ice accumulation and other winter storm impacts. However, consequences to these elements differ greatly, for example the risk to power supply infrastructure from high winds and ice accumulation is much higher than from hail, while water supply would be most greatly affected by extreme cold.

5.17.5 Potential Losses

Potential losses greatly depend on the frequency, intensity, and type of weather event. It is difficult to quantify and previous losses are not a reliable indicator to determine future losses. Grouping by type of event can help to illustrate specific impacts on property or crop damage.

Hail poses threats to both property and crops. Small hail in large volumes or driven by a strong wind are most damaging to crops. Large hail is most damaging to physical structures and poses a threat to human and livestock safety. Hail often damages vehicles, windows, and roofs. If the hailstones are large enough they may go through windshields and roof. The buildup of weight on a roof can collapse structures.

Lightning poses a threat to human life, may damage buildings, if directly struck, and has the potential to ignite grassland fires. These fires may become a threat to crops or developed areas.

Winter weather events include various types and therefore have varied impacts. Winter storms may bring snow quickly but result in only a minor inconvenience to the community and typically little damage past vehicle accidents. Ice storms can greatly impact infrastructure due to the consequences of ice accumulations, creating dangerous conditions and straining infrastructure with the weight of the ice. Power lines may be downed which could result in a disruption of service until safely repaired and trees falling under the weight could cause property damage. Blizzards and/or heavy snow present dangers to snow removal equipment and crews, as road conditions are the most likely impact. Heavy snow may impact structural integrity due to the weight on roofs and may also bring down trees.

Losses to structures are typically minimal and covered by insurance, but uncovered losses may be personnel overhead, maintenance costs, and contents within structures. A timely forecast may not be able to mitigate the property loss, but could reduce the casualties and associated injuries.

5.17.6 Probability of Future Occurrences

Severe storms are likely in the future. While understanding the historical frequency, duration, and spatial extent of severe weather is critical to planning, it is important to recognize that with changing climate it may be more difficult to determine the likelihood and potential severity of future occurrences. The characteristics of historical events illustrate the impacts on the County, but will not foretell the impacts of future events due to the unpredictability of timing, location and intensity of weather events. The large growth of the County brings new considerations, as storm elements change and more people, property, livestock, and crops may be impacted.

In recent years, there is a trend toward a shorter yet more intense hail season, with increasing proportions of significant and very large hail. As population density grows there will be a noticeable difference in the magnitude of hail risk.

Lightning flash density is increasing across the US, making an increase likely in Weld County.

Winter weather events are likely in the future. While each type may have its own probability, it is fair to say an increase in events may happen in Weld County.

5.17.7 Land Use and Development

Increased development trends in and around Weld County will multiply the possible consequences of severe storms. Enforcing and adhering to building codes for new development is imperative for community safety during future climate extremes. As the rural portions of the County continue to grow, consideration of reliable access to those rural residents should be prevalent in emergency management and mitigation planning.

5.18 Tornado & Straight-Line Wind

MODERATE RISK HAZARD

5.18.1 Hazard Identification

Tornadoes typically occur during the spring and early summer months of March through June and are most likely to form in the late afternoon and early evening. According to the National Weather Service, tornado wind speeds can range between 30 to more than 300 miles per hour. Most tornadoes are a few dozen yards wide and touchdown briefly, but even small, short-lived tornadoes can inflict tremendous damage. The damage caused by a tornado is a result of high wind velocities and wind-blown debris, which ranges depending on the intensity, size, and duration of the storm. The majority of Colorado tornadoes occur in the eastern plains, including large areas of Weld County.

According to NOAA data from May 1952 to May 2020, Weld County has a total of 280 tornado segments, more than any other County in the U.S. A segment is the portion of a tornado's path within a single county. If a tornado stays in one county, then a "tornado" is the same as a "segment." The National Weather Service historically has verified tornado warnings by county, which is the reason for county-segment tornado recordkeeping.

Tornadoes are classified based on the damage inflicted once it has passed over a man-made structure, which allows experts to assess and estimate wind intensity. The Fujita Scale (Table 60) was used until 2007, classifying the intensity from the least to most intense, in seven categories (F0-F6). This scale was replaced by the Enhanced Fujita Scale (Table 62), which uses six intensity categories (EF0-EF5) to measure tornado strength and associated damages. The scale was revised to reflect better examinations of tornado damage surveys, to align wind speeds more closely with associated storm damage. The new scale takes into account how most structures are designed and is considered a more accurate representation of the surface wind speeds in the most violent tornadoes. Table 60 provides details on how the Enhanced Fujita Scale intensities can be derived from the previous Fujita Scale.

Table 60. Derived EF Scale

Fujita Scale		Derived EF Scale	
F Number	**3 Second Gust (mph)**	**EF Number**	**3 Second Gust (mph)**
0	45-78	**0**	65-85
1	79-117	**1**	86-109
2	118-161	**2**	110-137
3	162-209	**3**	138-167
4	210-261	**4**	168-199
5	262-317	**5**	200-234

Source: https://www.spc.noaa.gov/efscale/ef-scale.html

Table 61. Fujita Tornado Damage Scale

F-Scale Number	Intensity Phrase	Wind Speed	Type of Damage
F0	Gale tornado	40-72 mph	Some damage to chimneys; breaks branches off trees; pushes over shallow-rooted trees; damages signboards.
F1	Moderate tornado	73-112 mph	The lower limit is the beginning of hurricane wind speed; peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads; attached garages may be destroyed.
F2	Significant tornado	113-157 mph	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated.
F3	Severe tornado	158-206 mph	Roof and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted
F4	Devastating tornado	207-260 mph	Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown and large missiles generated.
F5	Incredible tornado	261-318 mph	Strong frame houses lifted off foundations and carried considerable distances to disintegrate; automobile sized missiles fly through the air in excess of 100 meters; trees debarked; steel reinforced concrete structures badly damaged.
F6	Inconceivable tornado	319-379 mph	These winds are very unlikely. The small area of damage they might produce would probably not be recognizable along with the mess produced by F4 and F5 wind that would surround the F6 winds. Missiles, such as cars and refrigerators would do serious secondary damage that could not be directly identified as F6 damage. If this level is ever achieved, evidence for it might only be found in some manner of ground swirl pattern, for it may never be identifiable through engineering studies

Source: http://www.spc.noaa.gov/faq/tornado/f-scale.html

Table 62. Enhanced Fujita (EF) Scale

Enhanced Fujita Category	Wind Speed (mph)	Potential Damage
EF0	65-85	Light damage: Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over.
EF1	86-110	Moderate damage: Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
EF2	111-135	Considerable damage: Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes completely destroyed; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
EF3	136-165	Severe damage: Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
EF4	166-200	Devastating damage: Well-constructed houses and whole frame houses completely leveled; cars thrown and small missiles generated.
EF5	>200	Incredible damage: Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 m (109 yds.); high-rise buildings have significant structural deformation; incredible phenomena will occur.

Source: http://www.spc.noaa.gov/faq/tornado/ef-scale.html

Straight line winds and other severe wind events, which can be more damaging than tornadoes, can cause injuries and death to people and animals, along with damages to property and crops. Straight-line

wind is a term used to define any thunderstorm wind that is not associated with rotation, and is used mainly to differentiate from tornadic winds.

Downburst is the general term for all localized strong wind events that are caused by a strong downdraft within a thunderstorm, and is used to broadly describe macro and microbursts.

A macroburst is an outward burst of strong winds that occurs when a strong downdraft reaches the ground, spreading over 2.5 miles. Macroburst winds may begin over a smaller area and then spread out over a wider area, sometimes producing damage similar to a tornado. Although usually associated with thunderstorms, macrobursts can occur with showers too weak to produce thunder.

A microburst is a small concentrated downburst that produces an outward burst of strong winds at or near the surface. Microbursts are small, less than 2.5 miles across and short-lived, lasting only five to 10 minutes, with maximum windspeeds sometimes exceeding 100 mph.

A derecho is a widespread, long-lived wind storm that is associated with a band of rapidly moving showers or thunderstorms. A typical derecho consists of numerous microbursts, downbursts, and downburst clusters. By definition, if the wind damage swath extends more than 240 miles and includes wind gusts of at least 58 mph or greater along most of its length, then the event may be classified as a derecho.

5.18.2 Previous Occurrences

NCEI's Storm Events Database estimates that 280 tornadoes have touched down in, or moved through, Weld County between 1950 and May 2020. A majority of these events have been classified as F0 or F1 events, with 15 F2 tornadoes, 1 F3 and 1 EF3. Table 63 illustrates the breakdown of occurrences, damages, injuries, and deaths over that time period.

Table 63. Tornado History in Weld County (1950 – 2020)

Period	Total	F1	F2	F3	EF 1	EF 2	EF 3	Injuries	Deaths	Property Damage	Crop Damage
1950-1961	21	3	5	1				6	0	$46,620	$0
1962-1971	10	5	1					1	0	$77,530	$0
1972-1981	44	22	1					3	0	$2,840,250	$0
1982-1991	63	41	7					3	0	$696,010	$0
1992-2001	63	7	1					0	0	$75,000	$0
2002-2011	41	3			2		1	79	1	$147,020,000	$5,000
2012-5/2020	38				1	1		1	0	$105,000	$5,000
Total: 280		**81**	**15**	**1**	**3**	**1**	**1**	**93**	**1**	**$150,860,410**	**$10,000**

Source: NOAA; NCEI Storm Events Database

Weld County saw its most destructive tornado event on May 22, 2008. The tornado, ranked an EF3 on the Enhanced Fujita Scale, swept north-northwestward across the County, carving a path of destruction,

nearly 39 miles in length. The storm, which was up to one mile wide at times, had a continuous at path of 24 miles and brought baseball sized hail. This tornado event caused 78 injuries and one death, along with millions of dollars in damages.

Nearly 300 homes were significantly damaged or destroyed and 1,259 individuals applied for federal disaster aid. At one point over 60,000 people were without power, as over 200 power poles were snapped or blown down, which cost Poudre Valley Rural Electric Association an estimated $1 million. A reported 85 tractor trailers and 15 railroad cars were overturned. The Town of Windsor saw much of the damages, including the leveling of the main feed lot and a destroyed dairy barn resulting in the death of almost 400 cattle.

The following Figure depicts the tornado touchdown locations that occurred on May 22, 2008.

Figure 66. Tornado Touchdowns in Weld County, May 22, 2008

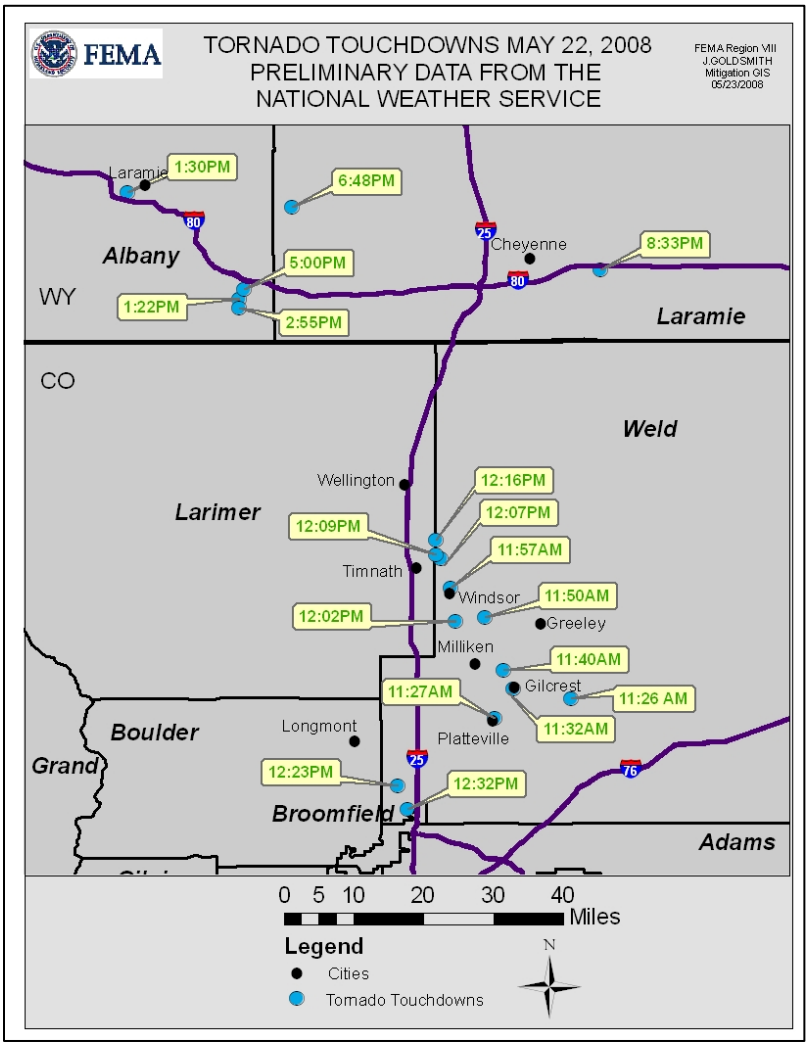
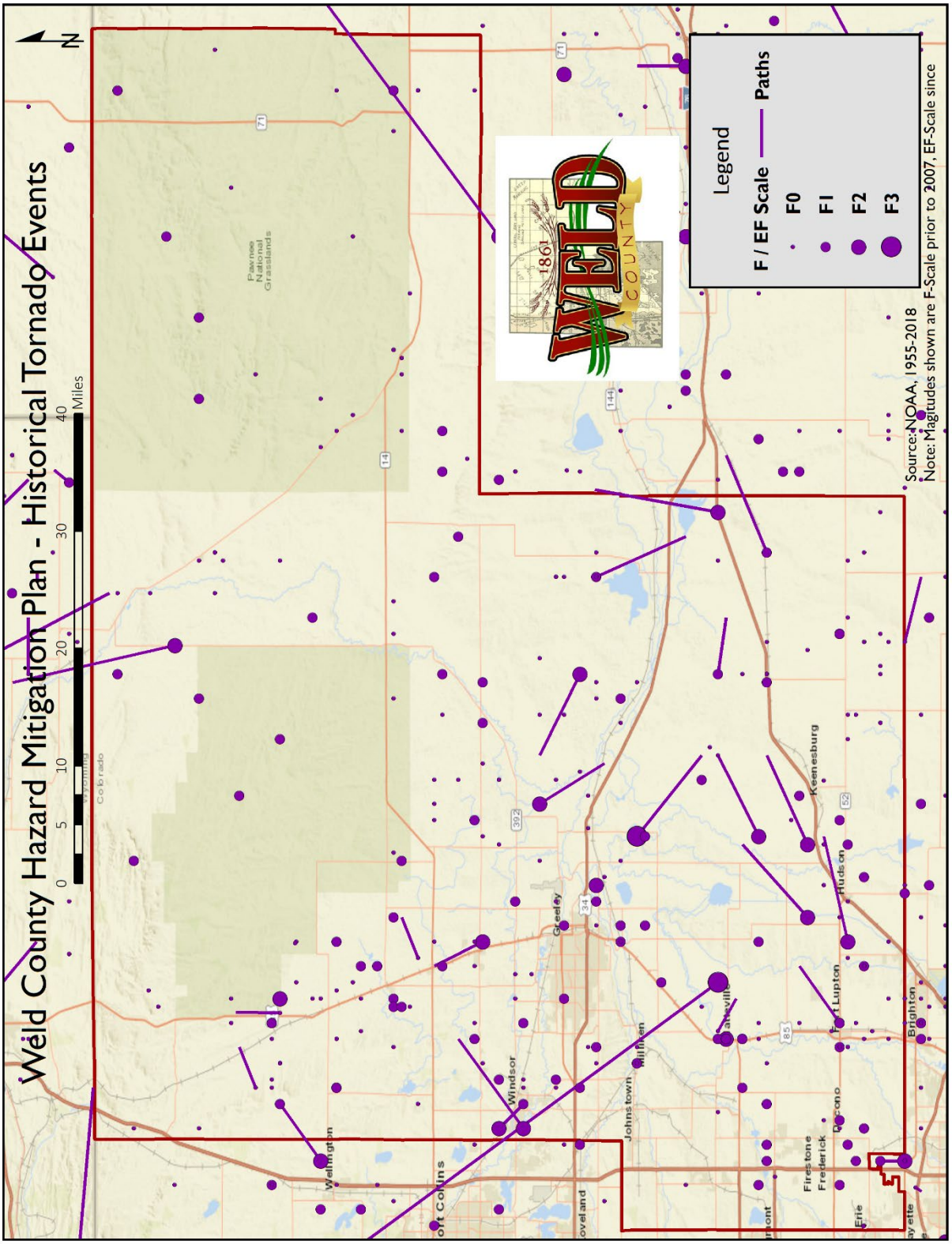


Figure 67 depicts historical tornado tracks and events in and around Weld County. The map illustrates where tornadoes have touched down (and traveled) between 1955 and 2018. It is important to note that all portions of the County are susceptible to tornado hazard, from the urban western portions to the rural eastern side.

Figure 67. Historical Tornado Events



Data from NOAA's NCEI Storm Events Database for straight-line wind events, in Weld County, was used for historical thunderstorm and high wind events. Thunderstorm winds and high winds differ in their characteristics, but both can be dangerous to public safety and cause significant damages to property and crops. Table 64 and Table 65 illustrate the breakdown of historical events, the difference in time periods is due to changes in the NCEI Event categorizations.

Thunderstorm Winds arise from convection, occurring within 30 minutes of lightning being observed or detected. Characterized by wind speeds of at least 58 mph, or thunderstorm related winds of any speed below 58 mph that produce a fatality, injury, or damage.

High Winds are sustained non-convective winds of 40 mph or greater lasting for 1 hour or longer, or gusts of 58 mph or greater for any duration.

Based on data provided by NCEI's Storm Events Database, 167 high wind events have occurred in Weld County between 1996 and August 2020. Between 1985 and August 2020, a total of 237 thunderstorm wind events have occurred across the County.

Table 64. Thunderstorm Winds Event History in Weld County (1985 – 2020)

Period	Total Events	Range of Magnitude (includes unknown magnitudes)	Injuries	Deaths	Property Damage	Crop Damage
1985-1994	59	47-71	0	0	$13,600	$0
1995-2004	63	50-70	1	1	$63,000	$0
2005-2014	62	50-76	0	0	$241,000	$10,000
2015-8/2020	53	50-71	0	0	$0	$0
TOTAL:	**237**		**1**	**1**	**$317,600**	**$10,000**

Source: NOAA; NCEI Storm Events Database

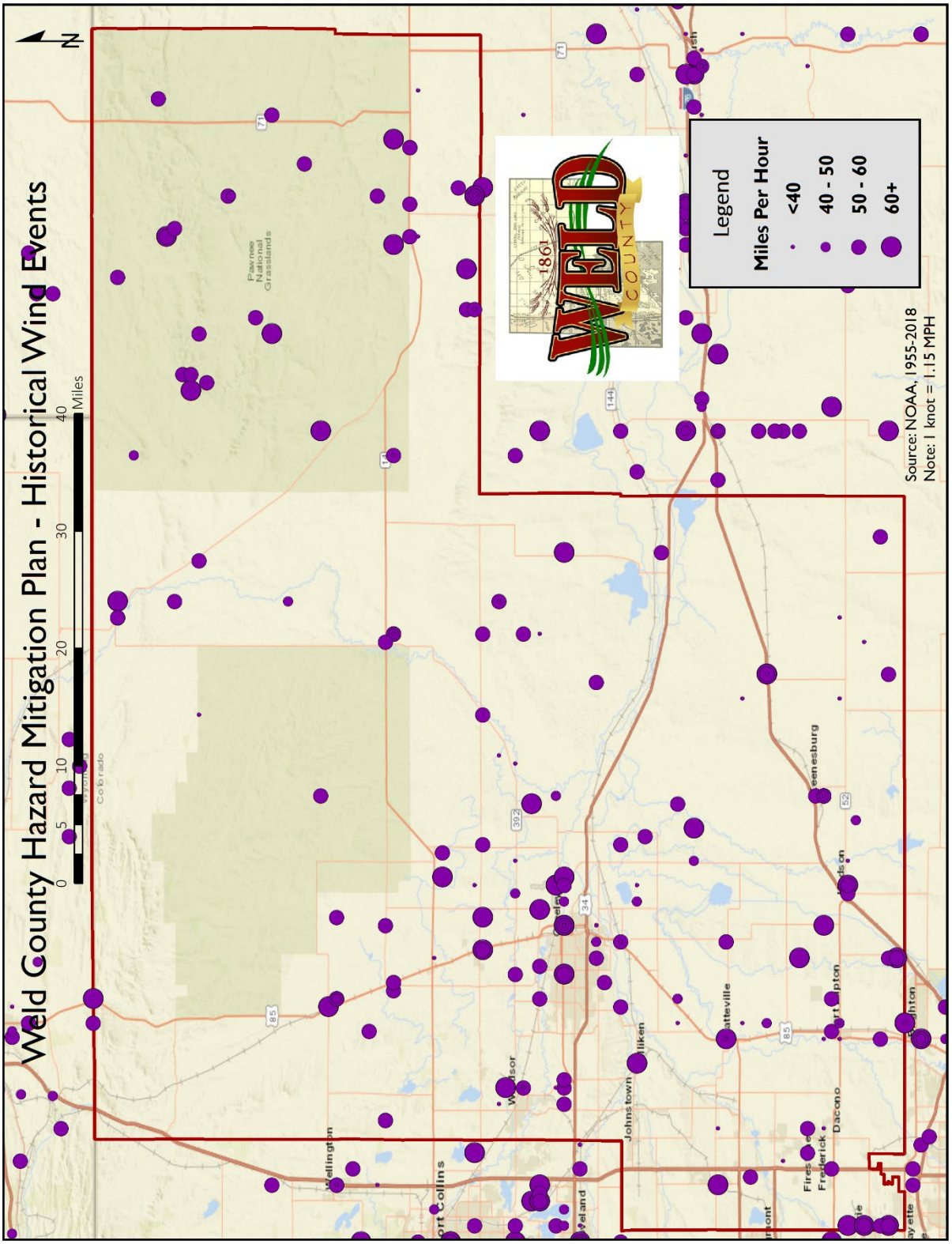
Table 65. High Winds and Strong Winds Event History in Weld County (1996 – 2020)

Period	Total Events	Range of Magnitude (includes unknown magnitudes)	Injuries	Deaths	Property Damage	Crop Damage
1996-2005	88	39-100	7	0	$1,436,000	$0
2006-2015	49	35-88	7	0	$235,000	$255,000
2016-8/2020	30	50-78	0	0	$300,000	$0
TOTAL:	**167**		**17**	**0**	**$1,971,000**	**$255,000**

Source: NOAA; NCEI Storm Events Database

The following Figure 68 provides a geospatial view of these historical severe wind events in Weld County between 1996 and 2018. As with tornadoes, it should be noted that severe winds affect all portions of the County.

Figure 68. Historical Severe Wind Events

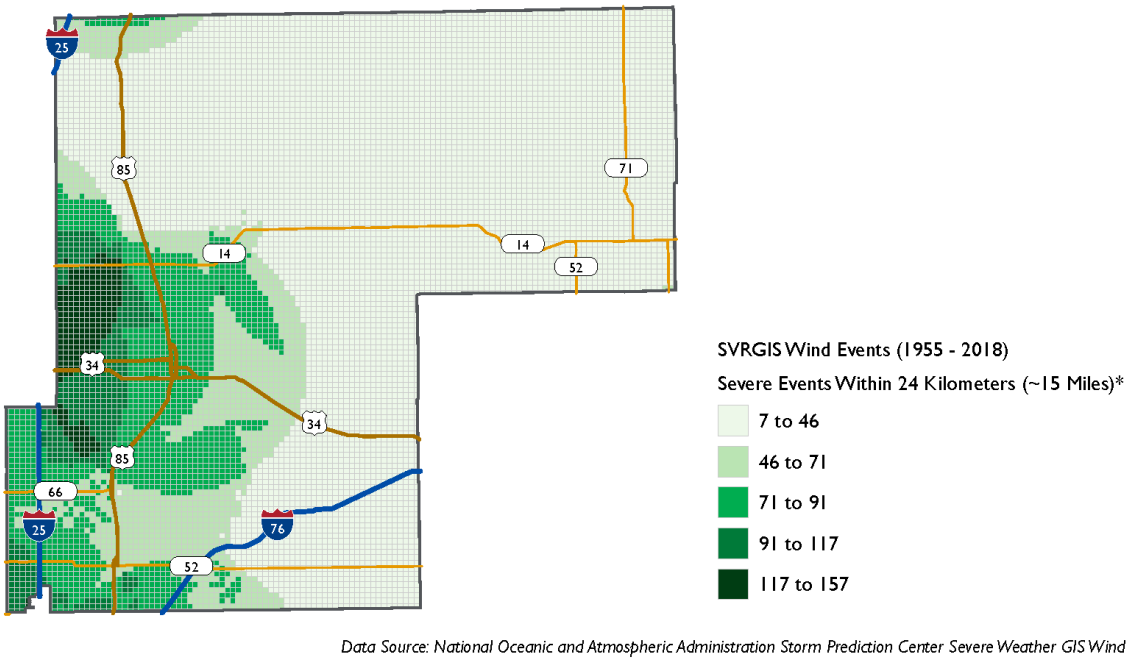


5.18.3 Data Analytics

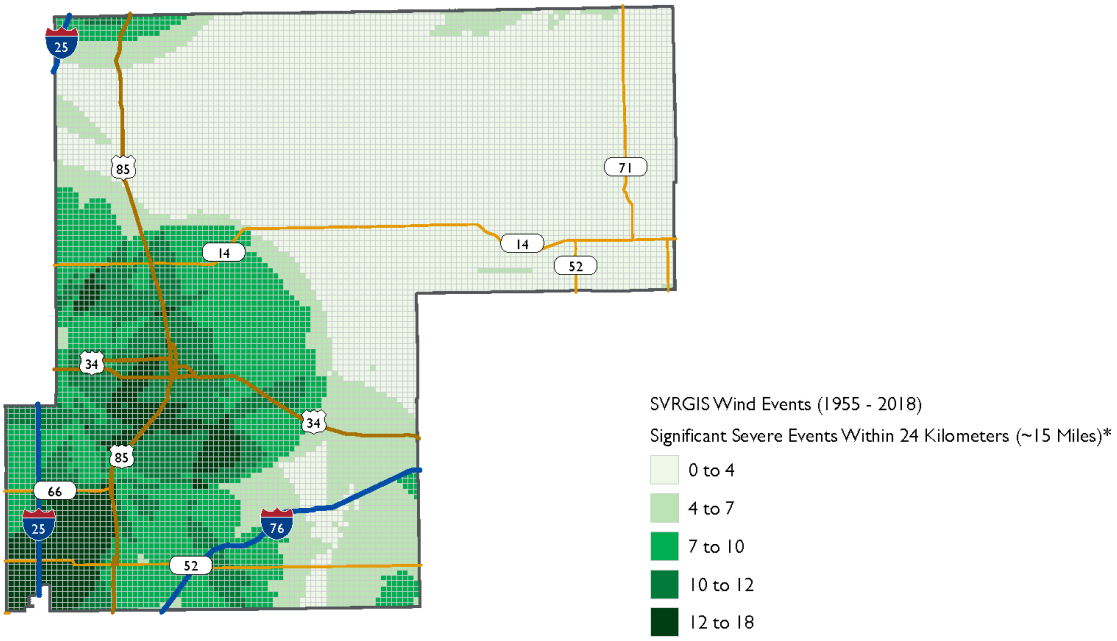
The inputs into the composite risk layer developed with the data analytics suitability model for tornado & straight-line wind are shown in the following Figures.

Figure 69. Composite Risk Layer Tornado & Straight-Line Wind Input 1

Straight-Line Wind/Tornado



Data Source: National Oceanic and Atmospheric Administration Storm Prediction Center Severe Weather GIS Wind

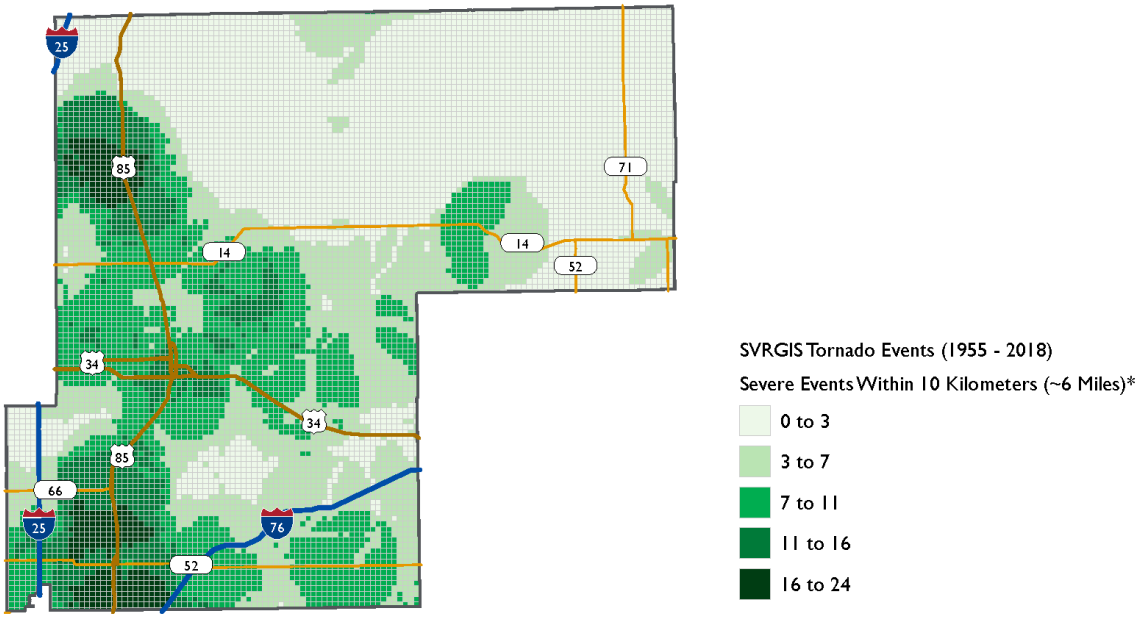


Data Source: National Oceanic and Atmospheric Administration Storm Prediction Center Severe Weather GIS Wind

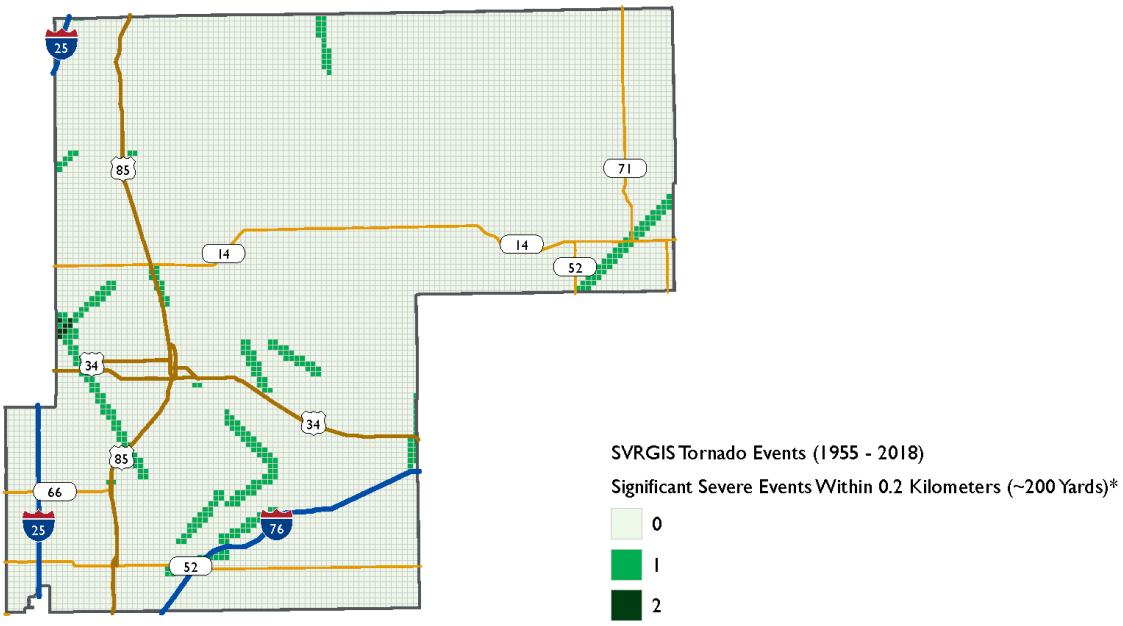
* Notes and Assumptions: Per NWS, the average severe storm is 15 miles wide
NOAA defines severe wind events as storms that produce damaging winds or wind speeds of 58 miles per hour or greater and significant severe wind events as storms that produce wind speeds of 75 miles per hour or greater
Per NOAA, severe weather reports tend to cluster around population centers; the data generally matches the understanding of severe weather climatology, but may show a slight bias towards population centers

Figure 70. Composite Risk Layer Tornado & Straight-Line Wind Input 2

Straight-Line Wind/Tornado



Data Source: National Oceanic and Atmospheric Administration Storm Prediction Center Severe Weather GIS Tornado



Data Source: National Oceanic and Atmospheric Administration Storm Prediction Center Severe Weather GIS Tornado

* Notes and Assumptions: Per NWS and National Geographic, the average tornado swath is 6 miles long and 100-300 yards wide
Severe tornado events were provided as initial points
Significant severe tornado events were provided as paths
NOAA defines severe tornado events as a tornado and significant severe tornado events as a tornado that produces EF2 or greater damage
Per NOAA, severe weather reports tend to cluster around population centers; the data generally matches the understanding of severe weather climatology, but may show a slight bias towards population centers

5.18.4 Inventory Exposed

All assets located in Weld County can be considered at risk from severe wind and tornadoes. Exposure to high winds is assumed to be as destructive, if not more so than tornadoes.

Due to the nature of these events, it is difficult to predict the intensity of the tornado, wind speed, and flying debris that may result. Therefore, it is also difficult to determine if any inventory or assets are more exposed than others. Overall, infrastructure, property, crops, livestock, and people could be impacted by wind events, even the events considered "small".

Structure type and material are important to consider, as those made of light materials, such as mobile homes, are most susceptible to damage.

5.18.5 Potential Losses

Tornadoes and straight-line wind events damage or destroy what is in their path and the lasting impacts depend upon wind speeds and duration of the event. Inventory and assets face potential losses primarily due to damages to property and structures, but losses may be incurred due to livestock or crop damage, as well. Due to the erratic nature of these events, it is difficult to quantify what may be realistically damaged or lost. Damages to roads, homes and infrastructure should be considered when looking at the potential losses at a local level. Additional costs may stem from the response to the event, debris removal, maintenance, and necessary repairs.

Accurate and current valuation of properties and assets is vital to understanding potential losses. The scale of damages to inventory may vary depending on the age and type of the building, construction materials used and the condition of the structure. Critical infrastructure may be impacted during an event, which may have cascading effects on services to the public. These disruptions or halting of services may result in losses. Electrical supply, communications, water and fuel supply are essential to maintain during and after a tornado or wind event.

Due to the nature of tornadoes and severe wind events, not all jurisdictions within Weld County are likely to be impacted equally. Over 7,700 homes or roughly 7% of the homes in Weld County are mobile homes, according to 2018 US Census Bureau data. The structural characteristics of these homes are a concern for property losses and life safety obstacles are critical to focus on when planning. The residents of mobile homes are more likely to have access and functional needs, such as those with low-income, the elderly and a larger population of immigrants. Deaths from tornadoes are significantly more likely in mobile homes than for those in fixed homes, NOAA research estimates that since 1975 over one-third of all tornado deaths in the country were of those in mobile homes. Between January and August of 2020, there were 78 deaths in the US from tornadoes, 36 of those people were located in mobile homes. As communities across Weld County continue to grow, it is important that local agencies monitor the inventory and locations of mobile homes. Communities or geographic locations with large numbers of mobile homes require specific discussion of mitigation actions for straight-line winds, tornadoes, and all hazards in general.

5.18.6 Probability of Future Occurrences

The probability of the County and its municipalities experiencing a tornado or straight-line wind event is high. The frequency and magnitude of these events historically is an indicator of the likelihood of events in the future. However, this data does not inform the characteristics of impending events, especially considering the unpredictability of tornadoes and the undiscriminating impacts of straight-line winds. Understanding previous events can help with informing planning efforts, but it is important to think long-term about the potential for these events to grow in frequency and intensity.

5.18.7 Land Use and Development

All future structures built in Weld County will likely be exposed to severe wind and tornado damage. Weld County and its jurisdictions should continue to adhere to building codes and to facilitate new development that is built to the highest design standards to account for heavy winds.

6 Appendix A: 2021 Mitigation Action Guides

Mitigation Action Guides: 2021-26 Weld County

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Weld County (9 Projects)

1-Weld County: County Resiliency, Building of Lifelines and Subcomponents in all Jurisdictions	
PRIORITY: Medium	HAZARDS ADDRESSED: All hazards
LOCATION: County Wide	GOALS ADDRESSED: 1, 2, 3, 4
RECOMMENDATION DATE: 2021-2025	OBJECTIVES ADDRESSED: A, B, C, D, E
TARGET COMPLETION DATE: Annually	LIFELINE: All SUBCOMPONENT: All
ISSUE: Traditional educational programs have not been measured, Weld County is working with each jurisdiction individually in the "Whole Community Approach" to strengthen capabilities, build resilience, incorporate preplanning for all hazards, development of COOP, EOP, ERGs and community wide educational programs.	
RECOMMENDATION: The goal would be to better understand each community's resilience (social vulnerability, capabilities and social capital) and then build upon the existing preparedness education program to target the areas that will make communities more resilient. The program would include an evaluation tool for measuring results annually and evaluating the effectiveness of preparedness outreach. Meetings have been set up with Weld Communities to continue every other month for the next five years. Goals are to focus locally on building resiliency on the local level.	
ACTION: We will continue working "Whole Community" by letting the local communities lead the program, while OEM collaborates with Local EM's and Community Leaders to develop training, community education and overall resilience planning. Meetings have been scheduled with each community every two months, to engage, collaborate, strengthen capabilities, track mitigation projects, develop COOPS, EOP, COG, ERG and community programs.	
LEAD AGENCY: Weld OEM	EXPECTED COST: OEM Staff time
SUPPORT AGENCIES: Community EM's and Leaders, First Responder Agencies	POTENTIAL FUNDING SOURCES: CDBG, HMPG grants; Private grants or Weld County Government Special Project funding.
PROGRESS MILESTONES:	

2-Weld County: Lifeline Integration - Health and Medical Resiliency Study	
PRIORITY: Medium	HAZARDS ADDRESSED: All hazards
LOCATION: County Wide	GOALS ADDRESSED: 1, 2, 3, 4
RECOMMENDATION DATE: 2021	OBJECTIVES ADDRESSED: A, B, C, D, E

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TARGET COMPLETION DATE: January 31, 2021 January 31, 2022	LIFELINE: Health and Medical SUBCOMPONENT: All
ISSUE: Lifeline Resiliency in Health & Medical have not been accurately measured, Weld County is working with each Health Care Facility using the "whole Community approach" to strengthen capabilities, build resilience, identify gaps and potential mitigation projects.	
RECOMMENDATION: The goal would be to better understand each Health Care Facilities' (vulnerability and capabilities) and then build upon the existing policies and programs to target the areas that will make facilities more resilient. The program would include utilize the CO PHRCA measuring results annually and evaluating the effectiveness of facility preparedness.	
ACTION: Engage the Health Care Facilities by using the Whole Community approach utilizing the CO PHRCA spreadsheet that gauges staffing needs, capabilities, and infrastructure requirements.	
LEAD AGENCY: Weld OEM, Whole Community Group, WCDPHE	EXPECTED COST: OEM and Public Health Staff time
SUPPORT AGENCIES: OEM, WCDPHE, Health Care Facilities and Providers	POTENTIAL FUNDING SOURCES: General Fund
PROGRESS MILESTONES: Engage the Whole Community Group to address the goals of the Survey questions and encourage participation to develop a measurable record of capabilities, preparedness goals and critical infrastructure resilience.	

3-Weld County: Floodplain Management	
PRIORITY: Medium	HAZARDS ADDRESSED: Flooding
LOCATION: County Wide	GOALS ADDRESSED: 1, 2, 3, 4
RECOMMENDATION DATE: Jan 2021	OBJECTIVES ADDRESSED: A, B, C, D, E
TARGET COMPLETION DATE: On going	LIFELINE: Food, Water, Shelter/ Safety &Security/ Transportation SUBCOMPONENT: Water, Rivers, Roads,
ISSUE: Weld County strives to comply with NFIP standards, and will adjust as needed with changes	
RECOMMENDATION: Continue to coordinate with the Planning Department on Floodplain management, Support community education on NFIP.	
ACTION: Annual review of NFIP standards and ordinances	
LEAD AGENCY: Weld County Planning Dept. Flood Plain Management	EXPECTED COST: Weld County Staff Time
SUPPORT AGENCIES: Weld OEM	POTENTIAL FUNDING SOURCES: General Fund

Mitigation Action Guides: 2021-26 Weld County

PROGRESS MILESTONES: Weld County is not participating in the CRS program. Weld is a member of NFIP and Weld County adopted the model ordinance in January of 2014, as required by the state. Weld County enforces floodplain regulations as outlined in Article XI of Chapter 23 of the Weld County Code, in accordance with FEMA's requirements.

4-Weld County: ALERT Flood Warning System	
PRIORITY: Medium	HAZARDS ADDRESSED: Flooding
LOCATION: County Wide	GOALS ADDRESSED: 1, 2, 3, 4
RECOMMENDATION DATE: June 2021	OBJECTIVES ADDRESSED: A, B, C, D, E
TARGET COMPLETION DATE: Ongoing	LIFELINE: Food, Water, Shelter/ Safety &Security/ Transportation SUBCOMPONENT: Water, Rivers, Roads,
ISSUE: Weld County has several rivers downstream from high elevations, where flooding can occur very quickly to heavily populated communities.	
RECOMMENDATION: Continue to install additional flood warning gauges and monitoring equipment as needed.	
ACTION: Identify and install additional flood level gauges at critical points on waterways	
LEAD AGENCY: Weld County OEM	EXPECTED COST: estimated equipment costs 8,000. Per site
SUPPORT AGENCIES: Weld County Public Works, CO Div of Water Resources	POTENTIAL FUNDING SOURCES: HMGP Grants
PROGRESS MILESTONES: Several ALERT river gauges have been installed throughout Weld County. Identify locations across Weld County with high flood risk, evaluate sites for additional warning equipment.	

5-Weld County: Improve Dam Safety	
PRIORITY: Medium	HAZARDS ADDRESSED: Flooding
LOCATION: County Wide	GOALS ADDRESSED: 1, 2, 3, 4
RECOMMENDATION DATE: June 2021	OBJECTIVES ADDRESSED: A, B, C, D, E
TARGET COMPLETION DATE: Ongoing	LIFELINE: Food, Water, Shelter, Safety &Security SUBCOMPONENT: Water, Rivers, Roads, Community Safety
ISSUE: Weld County has several rivers downstream from high elevations, where flooding can occur very quickly to heavily populated communities. Many dams have indicators of aging infrastructure, regular inspection and assessments on earthen dams throughout the county.	

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RECOMMENDATION: Continue to maintain emergency response plans for the dams in Weld County, Work with the Division of Water Resources to update all documentation and coordinate with owners for planning and preparedness. Participate with the Division of Water Resources and the Bureau of Reclamation on Dan Safety Exercises and planning	
ACTION: Identify and install additional flood level gauges at critical points upstream of dams and rivers, in order to identify potential concerns and allow for prewarning of residents and staff.	
LEAD AGENCY: OEM	EXPECTED COST: Unknown, Staff time
SUPPORT AGENCIES: Division of Water Resources/ Dam Safety	POTENTIAL FUNDING SOURCES: General Fund
PROGRESS MILESTONES: Coordinate with the State Div. of Water Resources to make sure inspections are completed on high hazard dams and emergency plans are up to date.	

6-Weld County: Establish an ongoing or annual Public Education Campaign regarding Hazards and Emergency Management	
PRIORITY: High	HAZARDS ADDRESSED: All hazards
LOCATION: County Wide	GOALS ADDRESSED: 1, 2, 3
RECOMMENDATION DATE: Jan. 2021	OBJECTIVES ADDRESSED: A, B, E
TARGET COMPLETION DATE: Ongoing	LIFELINE: All SUBCOMPONENT: All
ISSUE: There are many Emergency Management issues that need to be reinforced with public education so that citizens know what risks they face, what protective actions they can take, and what government programs are in place to assist them.	
RECOMMENDATION: The potential for saving just one life and providing time for individuals and businesses to take effective protective actions, outweighs the potential cost of the public education program. Public Education may be the most effective and least-expensive way to reduce disaster losses by changing human behavior to promote appropriate actions. Weld OEM is working with each community separately to gauge and evaluate public education needs, based on current Risk Rankings and Capabilities that have been identified through the Hazard Mitigation planning process. Each community will have separate strengths and challenges and as these challenges are addressed, progress will be documented in both Capabilities and Lifeline Integration.	
ACTION: Establish an ongoing or annual Public Education campaign regarding Hazards and Emergency Management	
LEAD AGENCY: Weld County Emergency Management, in conjunction with appropriate County/Town Departments with municipalities	EXPECTED COST: $2,500 for printing and distribution costs
SUPPORT AGENCIES: State and Federal agencies	POTENTIAL FUNDING SOURCES: Monitor grants, seek private partners for cost sharing

Mitigation Action Guides: 2021-26 Weld County

PROGRESS MILESTONES: The planning team agreed that this should remain a high priority, ongoing project. Since 2009, Weld County OEM and many participating jurisdictions have continued to make public preparedness train-the-trainer curriculum and invites community members to participate in the course. These trainers are equipped to teach preparedness in their communities, healthcare facilities, assisted livings centers or wherever their sphere of influence might be. Weld County OEM also actively participates in the community Outreach Events, raising awareness about disaster preparedness. This action item will continue to be a priority 2021-2025. Weld County OEM will develop a new mitigation action focused on studying disaster resilience in communities throughout the Weld County in order to better understand how to develop the preparedness program. Weld OEM is working with each community separately to gauge and evaluate public education needs, based on current Risk Rankings and Capabilities that have been identified through the Hazard Mitigation planning process. Each community will have separate strengths and challenges and as these challenges are addressed, progress will be documented in both Capabilities and Lifeline Integration.

7-Weld County: Inventory Critical Facilities within the Floodplain to Determine if they should be Protected	
PRIORITY: Medium	HAZARDS ADDRESSED: Flooding
LOCATION: County Wide	GOALS ADDRESSED: 1, 2
RECOMMENDATION DATE: January 2021	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: Ongoing	LIFELINE: All SUBCOMPONENT: All
ISSUE: In floodplains there is a known risk. Not having critical facilities protected against such risks can severely handicap a community's ability to respond and recover from a flood. Potential losses should be estimated for the failure of each critical facility. Then a cost estimate should be calculated for the favored method of protection. A benefit-cost comparison will then indicate whether or not the facility is worth protecting.	
RECOMMENDATION: The potential for saving just one life and providing time for individuals and businesses to take effective protective actions, outweighs the potential cost of the public education program. Public Education may be the most effective and least-expensive way to reduce disaster losses by changing human behavior to promote appropriate actions. Collaborate with critical facility managers to mitigate and retrofit potentially vulnerable structures or assets.	
ACTION: Each incorporated community with a mapped floodplain should inventory critical facilities within the floodplain to determine if they should be protected. Facilities would include power substations, water sources such as wellheads, sewage treatment facilities, police and fire stations, hospitals, and nursing homes.	
LEAD AGENCY: County Emergency Manager in conjunction with appropriate County/Town Departments. Technical Assistance is available from state agencies if help in making these determinations is	EXPECTED COST: Staff time only for initial inventory and discussion of protection methods, and cost-benefit analysis
SUPPORT AGENCIES: Planning Department, Public Works	POTENTIAL FUNDING SOURCES: There is no cost for

	the initial inventory and decision-making. Protective measures should be taken where cost-effective.
PROGRESS MILESTONES:	

8-Weld County: Public Warning System- IPAWS Awareness and Training	
PRIORITY: Medium	HAZARDS ADDRESSED: All
LOCATION: County Wide	GOALS ADDRESSED: 1, 2, 3, 4
RECOMMENDATION DATE: Annually	OBJECTIVES ADDRESSED: A, B, C, D, E
TARGET COMPLETION DATE: 2025	LIFELINE: Communications, Safety & Security SUBCOMPONENT: Early Warning Systems, Community Safety
ISSUE: IPAWs system was integrated with CODE RED in 2020, continued training is needed to understand usage and when to request an alert. Weld County OEM is running a Test every week, however many jurisdictions are not aware of how the system works or how to request an alert.	
RECOMMENDATION: Continue working with the jurisdictions throughout Weld County to explain the IPAWS integration and identify hazards where it would be utilized.	
ACTION: Set up training in each jurisdiction and set up templated messaging	
LEAD AGENCY: Weld OEM	EXPECTED COST: Included with Outreach/Awareness
SUPPORT AGENCIES: Response Agencies	POTENTIAL FUNDING SOURCES:
PROGRESS MILESTONES:	

9-Weld County: StormReady / Weather Safety	
PRIORITY: High	HAZARDS ADDRESSED: Severe Storms
LOCATION: County Wide	GOALS ADDRESSED: 2, 3
RECOMMENDATION DATE: Annually	OBJECTIVES ADDRESSED: A, B
TARGET COMPLETION DATE: Classes held annually in the spring March-May	LIFELINE: Communications, Safety & Security SUBCOMPONENT: Early Warning Systems, Community Safety
ISSUE: One of the goals for the Northeast Region is to have all 11 counties participate in Storm Ready. Weld County has been a participant in the past, and the intent is to maintain Storm Ready status.	

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Maintain our procedure for reporting storm damage to the National Weather Service Office in real time. EOC Activations Procedures, Spotter Activation Criteria and classes, maintain Local Warning System Activation Criteria	
ACTION: Maintain 'StormReady" status with NOAA	
LEAD AGENCY: Weld OEM in conjunction with appropriate County/Town Departments within municipalities	EXPECTED COST: Staff Time and funds for meeting for drinks and goodies. This will come from the OEM budget
SUPPORT AGENCIES: Sheriff's Office, Weld County Regional Communications, Public Works	POTENTIAL FUNDING SOURCES: OEM Budget and local business sponsor's
PROGRESS MILESTONES: 2019-2020 We held a Weather Spotter Class in Greeley and Virtually, we discuss storm weather preparedness in Whole Community Meetings. IPAWS was integrated into the CODE Red Emergency Alert System, staff was trained and have been doing a weekly IPAWS test. Weld OEM held Code Red sign up, EXPO, Project Connects, and Employee Fair in Windsor.	

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Weld County -PW (7 Projects)

1-Weld County - PW: WCR 120, 110, 108 Low Water Crossings	
PRIORITY: High	HAZARD(S) MITIGATED: Flood, Erosion, and Subsidence.
LOCATION: Latitude: 40.446330 to 40.783420 Longitude: -104.701460 to -104.801590	LIFELINE(S) MITIGATED: Safety and Security, Health and Medical, and Transportation.
RECOMMENDATION DATE: 2013 TARGET COMPLETION DATE: 2025	GOAL(S) ADDRESSED: 1, 2 OBJECTIVE(S) ADDRESSED: E
ISSUE: The roads have to be closed during major storm events.	
RECOMMENDED ACTION: Reconstruct the roads and install large culverts to keep water from overtopping the road and washing it out. This project will achieve resiliency from severe storms and minimize the risk to the general public. It will also eliminate road closures due to washouts.	
LEAD AGENCY: Weld County	EXPECTED COST: $1,574,762.60
SUPPORT AGENCY(IES): N/A	POTENTIAL FUNDING SOURCE(S): DOLA
PROGRESS MILESTONES:	
STATUS UPDATE(S): The WCSO is constructing their new training facility off WCR 120 and Public Works will be mining gravel for county roads, so it makes this project a higher priority.	

2-Weld County – PW: Bridge 19/46.5A	
PRIORITY: High	HAZARD(S) MITIGATED: Flood and Erosion
LOCATION: WCR 19 between SH 60 and WCR 46.5	LIFELINE(S) MITIGATED: Safety and Security, Health and Medical, and Transportation.
RECOMMENDATION DATE: 2013 TARGET COMPLETION DATE: 2021	GOAL(S) ADDRESSED: 1, 2 OBJECTIVE(S) ADDRESSED: E
ISSUE: Constructing a new bridge to span the entire floodplain in accordance with the new FEMA DFIRM standards for this drainage basin.	
RECOMMENDED ACTION: Construct a new bridge to achieve resiliency from major flood events and allow the road to remain open to minimize the risk to the general public.	
LEAD AGENCY: Weld County	EXPECTED COST: $3,373,205
SUPPORT AGENCY(IES): Town of Johnstown	POTENTIAL FUNDING SOURCE(S): CDOT Bridge Grant
PROGRESS MILESTONES: The design will be completed in 2020. Construction will be completed in 2021.	
STATUS UPDATE(S): Weld County has contracted with JUB Engineers to design the new bridge.	

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3-Weld County – PW: Bridge 54/13A	
PRIORITY: High	HAZARD(S) MITIGATED: Flood and Erosion
LOCATION: WCR 54 between WCR 15 and WCR 13	LIFELINE(S) MITIGATED: Safety and Security, Health and Medical, and Transportation.
RECOMMENDATION DATE: 2013	GOAL(S) ADDRESSED: 1, 2
TARGET COMPLETION DATE: 2023	OBJECTIVE(S) ADDRESSED: E
ISSUE: Constructing a new bridge to span the entire floodplain in accordance with the new FEMA DFIRM standards for this drainage basin.	
RECOMMENDED ACTION: Construct a new bridge that is wide enough to accommodate the future widening of this arterial roadway from two to four lanes. A new bridge will achieve resiliency from major flood events and allow the road to remain open to minimize the risk to the general public.	
LEAD AGENCY: Weld County	EXPECTED COST: $6,532,055
SUPPORT AGENCY(IES): N/A	POTENTIAL FUNDING SOURCE(S): DOLA
PROGRESS MILESTONES: The design will be completed in 2021. Construction will begin in 2022 and be completed in 2023.	
STATUS UPDATE(S): Weld County has contracted with JUB Engineers to design the new bridge.	

4-Weld County – PW: Bridge 60.5/49A	
PRIORITY: Medium	HAZARD(S) MITIGATED: Flood and Erosion
LOCATION: WCR 60.5 between WCR 49 and WCR 51	LIFELINE(S) MITIGATED: Safety and Security, Health and Medical, and Transportation.
RECOMMENDATION DATE: 2013	GOAL(S) ADDRESSED: 1, 2
TARGET COMPLETION DATE: 2025	OBJECTIVE(S) ADDRESSED: E
ISSUE: Constructing a new bridge to span the entire floodplain in accordance with the new FEMA D-FIRM standards for this drainage basin.	
RECOMMENDED ACTION: Construct a new bridge that is wide enough to accommodate the future widening of this arterial roadway from two to four lanes. A new bridge will achieve resiliency from major flood events and allow the road to remain open to minimize the risk to the general public.	
LEAD AGENCY: Weld County	EXPECTED COST: $4,117,575
SUPPORT AGENCY(IES): N/A	POTENTIAL FUNDING SOURCE(S): DOLA
PROGRESS MILESTONES: The design will start in 2022. Construction will begin in 2024 and be completed in 2025.	
STATUS UPDATE(S): Weld County has contracted with JUB Engineers to design the new bridge.	

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5-Weld County – PW: Bridge 34/17A	
PRIORITY: High	HAZARD(S) MITIGATED: Flood and Erosion
LOCATION: WCR 34 between WCR 17 and WCR 19	LIFELINE(S) MITIGATED: Safety and Security, Health and Medical, and Transportation.
RECOMMENDATION DATE: 2013	GOAL(S) ADDRESSED: 1, 2
TARGET COMPLETION DATE: 2026	OBJECTIVE(S) ADDRESSED: E
ISSUE: Constructing a new bridge to span the entire floodplain in accordance with the new FEMA D-FIRM standards for this drainage basin.	
RECOMMENDED ACTION: Construct a new bridge that is wide enough to accommodate the future widening of this arterial roadway from two to four lanes. A new bridge will achieve resiliency from major flood events and allow the road to remain open to minimize the risk to the general public.	
LEAD AGENCY: Weld County	EXPECTED COST: $8,800,000
SUPPORT AGENCY(IES): N/A	POTENTIAL FUNDING SOURCE(S): DOLA
PROGRESS MILESTONES: The design will be in 2022. Construction will begin in 2023 and be completed in 2026.	
STATUS UPDATE(S): Weld County has contracted with JUB Engineers to design the new bridge.	

6-Weld County – PW: Galeton Drainage Project	
PRIORITY: High	HAZARD(S) MITIGATED: Flood, Erosion, and Subsidence.
LOCATION: WCR 49 between WCR 74 and WCR 76	LIFELINE(S) MITIGATED: Safety and Security, Health and Medical, and Transportation.
RECOMMENDATION DATE: 2020	GOAL(S) ADDRESSED: 1, 2
TARGET COMPLETION DATE: 2025	OBJECTIVE(S) ADDRESSED: E
ISSUE: The flooding has closed the road and impacted adjacent landowners.	
RECOMMENDED ACTION: Reconstruct of WCR 49 and include the installation of culvert(s) to keep water from overtopping the road and flooding properties. This project will achieve resiliency from severe storms and minimize the risk to the general public. It will also Eliminate road closures due to washouts and provide continuous access to the Galeton Fire Protection District.	
LEAD AGENCY: Weld County	EXPECTED COST: $1,000,000
SUPPORT AGENCY(IES): N/A	POTENTIAL FUNDING SOURCE(S): DOLA
PROGRESS MILESTONES:	

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STATUS UPDATE(S): Public Works would like to add this drainage project into our Capital Improvement Plan to contract the work.

7-Weld County – PW: Gill Drainage Project	
PRIORITY: Low	HAZARD(S) MITIGATED: Flood, Erosion, and Subsidence.
LOCATION: Latitude: Gill Townsite off of WCR 55	LIFELINE(S) MITIGATED: Safety and Security, Health and Medical, and Transportation.
RECOMMENDATION DATE: 2020	GOAL(S) ADDRESSED:
TARGET COMPLETION DATE: 2026	OBJECTIVE(S) ADDRESSED:
ISSUE: The entire Gill Townsite sits in a bowl and has trouble draining during large storm events, which creates flooding.	
RECOMMENDED ACTION: Reconstruct the roads and install large culverts to keep water from overtopping the road and washing it out, thereby reduce flooding to homes within the Gill Townsite. It will also eliminate damage to additional public and private infrastructure.	
LEAD AGENCY: Weld County	EXPECTED COST: $3,000,000
SUPPORT AGENCY(IES): N/A	POTENTIAL FUNDING SOURCE(S): DOLA
PROGRESS MILESTONES:	
STATUS UPDATE(S): Need to include on the Public Works Capital Improvement Plan.	

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Ault (2 Projects)

1-Ault: Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning	
PRIORITY: High	HAZARDS ADDRESSED: All hazards
LOCATION: Town of Ault	GOALS ADDRESSED: 1-4
RECOMMENDATION DATE: 7/31/2021	OBJECTIVES ADDRESSED: A, B, C, D, E
TARGET COMPLETION DATE: 12/31/2021	Lifelines: Public Safety
ISSUE: Due to the potential impact of severe storms, long term power outages, tornados, proximity of hazmat routes and the lack of sheltering capabilities in the community; the impact by natural hazards and cascading events would require Ault to acquire outside assistance to shelter local residents.	
RECOMMENDATION: Conduct a Community Impact study to identify vulnerable areas and neighborhoods that be greatly impacted by identified high ranking natural hazards or the cascading effects of natural hazards. Identify shelter locations, that include generators, capability to sustain winds up to 200 mph, cots, blankets and maintain supplies for emergency provisions. Provide Train the Trainer course to include preparation for all hazards that could impact the community. Update Emergency planning to include early warning procedures and sheltering/shelter-in-place protocols. Harden infrastructure systems to prevent long term disruption of services and supplies. Identify and obtain grant funding for all components of above projects.	
ACTION: identifying shelters and designating them as critical facilities - providing backup power through fixed generators - mitigating the shelters against hazards (wind, flood, fire, etc.) - building safe rooms or shelters for identified vulnerable areas that need them	
LEAD AGENCY: Town of Ault	EXPECTED COST: Staff Time,
SUPPORT AGENCIES: Weld OEM,	POTENTIAL FUNDING SOURCES: TBD
PROGRESS MILESTONES:	

2-Ault: Hazardous Materials - Community Impact Study	
PRIORITY: High	HAZARDS ADDRESSED: Hazardous Material
LOCATION: Town of Ault	GOALS ADDRESSED: 1-4
RECOMMENDATION DATE: 7/31/2021	OBJECTIVES ADDRESSED: A, B, C, D, E
TARGET COMPLETION DATE: 12/31/2021	LIFELINES: Public Safety, Hazmat, Communications
ISSUE: Due to proximity of Hazmat Routes and Railroad through Ault, Hazmat is the highest-ranking risk to the community at a 2.5. The risks include Hwy 85, Hwy 14 and UP Railway that runs parallel	

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to Hwy 85 on the East side of town. A Hazmat spill on either route would significantly impact the entire community of Ault, traffic on Hwy 85 and Hwy 14, the residential area, and the environment.	
RECOMMENDATION: Conduct a Community Impact study addressing the hazmat routes, UP railway commodity flow study, update the current commodity flow study using the recently developed Application (Zone Survey) develop a public awareness campaign and establish protocol and procedure for responding to most prevalent hazmat concerns based on the study. Conduct training for community, government and first responders to address Response, Mitigation, and shelter in place protocols. Identify options at the crossing guards to harden and/or lengthen the closure for a train. Identify funding opportunities for identified projects.	
ACTION: Schedule a meeting with government officials, first responders, Weld OEM, Union Pacific, and CDOT/CSP to conduct a community impact study, consulting with Subject Matter Experts from every agency.	
LEAD AGENCY: Town of Ault	EXPECTED COST: Staff Time
SUPPORT AGENCIES: Weld OEM, CSP,CDOT	POTENTIAL FUNDING SOURCES: TBD
PROGRESS MILESTONES:	

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Carbon Valley - Dacono (2 Projects)

1-Dacono: Design and Construction of Colorado Blvd. Bridge	
PRIORITY: High (#1)	HAZARDS ADDRESSED: Flood
LOCATION: Colorado Blvd (WCR 13)	GOALS ADDRESSED: 1, 2, 4
RECOMMENDATION DATE: 10/19/2015	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 12/31/2025	LIFELINES and SUBCOMPONENTS ADDRESSED: Safety and Security: Community Safety; Law, Fire, Government Services; Transportation: Highway/Roadway
ISSUE: Based on previous experience with flooding on Colorado Boulevard, the particular area of road that intersects with the Little Dry Creek water-way, a bridge needs to be constructed to mitigate the impact of water flowing over that section of Colorado Blvd often requiring the road be closed.	
RECOMMENDATION: Bridging Colorado Blvd at Little Dry Creek	
ACTION: Design and Construction of Colorado Blvd. Bridge	
LEAD AGENCY: City of Dacono Public Works	EXPECTED COST: $2 Million; Staffing would include city staff and administration throughout the entire process
SUPPORT AGENCIES: Weld County, Army Corps of Engineers	POTENTIAL FUNDING SOURCES: Dacono City Budget; Grants (State and Federal)
PROGRESS MILESTONES: Design Completion, Impact Reports, permitting, RFQ, RFP, bidding, construction, reclamation, and completion. Updated: To date, this project has undergone engineering review and design. Completion of this project will depend on available funding, and it has not yet been scheduled. This project should be continued as a 2021 mitigation action.	

2-Dacono: Grandview Street and York Street Flood Mitigation	
PRIORITY: High (#2)	HAZARDS ADDRESSED: Flood
LOCATION: Grandview (Weld County Road 12) at York Street (Weld County Road 11)	GOALS ADDRESSED: 2, 4
RECOMMENDATION DATE: 10/19/2015	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 12/31/2025	LIFELINES and SUBCOMPONENTS ADDRESSED: Safety and Security: Community Safety; Law, Fire, Government Services; Transportation: Highway/Roadway

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ISSUE: In the event of sustained moderate or heavy rain, this intersection experiences flooding.	
RECOMMENDATION: Installation of box culverts	
ACTION: Engineering design and construction	
LEAD AGENCY: City of Dacono Public Works	EXPECTED COST: Unknown
SUPPORT AGENCIES: Weld County	POTENTIAL FUNDING SOURCES: Dacono city budget; State and Federal grants
PROGRESS MILESTONES: Engineering design and construction, RFP, bidding, construction, reclamation, completion. To date, this project has undergone engineering review and design. Completion of this project will depend on available funding, and it has not yet been scheduled. This project should be continued as a 2021 mitigation action.	

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Carbon Valley - Firestone (3 Projects)

1-Firestone: Installation of Infrastructure for Transmission Technologies	
PRIORITY: Medium	HAZARDS ADDRESSED: ALL
LOCATION: Town of Firestone	GOALS ADDRESSED: 1, 2, 4
RECOMMENDATION DATE: 1/2/2021	OBJECTIVES ADDRESSED: C, E
TARGET COMPLETION DATE: 12/31/2022	LIFELINES and SUBCOMPONENTS ADDRESSED: Safety and Security: Government Services; Community Safety Communications: Infrastructure; Alerts, Warnings, and Messages; Responder Communications
ISSUE: lack of stable and redundant communication services to households and businesses in Firestone. The population growth has been significant and communication systems are in need of update.	
RECOMMENDATION: Install stable and redundant communication system to ensure dependable communication to residents and businesses in Firestone during a disaster.	
ACTION: Install Fiber To The Premises (FTTP) network to all residents and businesses in Firestone.	
LEAD AGENCY: Town of Firestone	EXPECTED COST: $200,000.00
SUPPORT AGENCIES:	POTENTIAL FUNDING SOURCES: Town of Firestone, Grants, and Public-Private Partnership
PROGRESS MILESTONES: RFP completed in 2020. Next steps will be scope of work and system installation.	

2-Firestone: Godding Hollow Tri-Town Basin Outfall Improvements	
PRIORITY: Medium	HAZARDS ADDRESSED: Flood
LOCATION: Town of Firestone	GOALS ADDRESSED: 1, 2
RECOMMENDATION DATE: 6/21/2021	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: Interim improvements by December 2022; Final improvement by June 2031, as agreed upon with ditch company.	LIFELINES and SUBCOMPONENTS ADDRESSED: Interim improvements by December 2022; Final improvement by June 2031, as agreed upon with ditch company.
ISSUE: he Godding Hollow Drainage Basin and the Tri-Town Drainage Basin confluences at this location. A couple of hundred years of irrigation ditch construction, county road construction, and gravel mining have eliminated the natural drainage way so major storm events in the basins cause significant flooding where these two irrigation ditches and drainage basins all come together.	

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RECOMMENDATION: Construct a concrete box culvert and related drainage channel improvements to convey stormwater under the Last Chance Irrigation Ditch and WCR 26. Install grouted riprap sloping rock drop structures, relocate conflicting utilities, realign two irrigation ditches and the associated irrigation laterals.	
ACTION: Perform interim improvements to minimize immediate impact, then bid out the entire project for final improvements, as recommended.	
LEAD AGENCY: Town of Firestone	EXPECTED COST: $5,000,000
SUPPORT AGENCIES: City of Dacono, Town of Frederick, and Weld County Government	POTENTIAL FUNDING SOURCES: Support agencies
PROGRESS MILESTONES: Plan, schedule, and perform interim improvements, determine needs for final improvements, secure funding, prepare RFP, bid out project, schedule and perform improvements.	

3-Firestone: Community Connect Program	
PRIORITY: Medium	HAZARDS ADDRESSED: All
LOCATION: Town of Firestone	GOALS ADDRESSED: 1, 2, 3, 4
RECOMMENDATION DATE: 11/1/2021	OBJECTIVES ADDRESSED: A, C, E
TARGET COMPLETION DATE: 12/31/2022	LIFELINES and SUBCOMPONENTS ADDRESSED: Safety and Security: Fire, LE, SAR, Gov. Services and Community Safety. Communications: alerts, warnings, and messages. Health and Medical: Medical Care.
ISSUE: First responders have limited information about specific critical issues at a residence or location. They typically discover these issues when they arrive on scene of an incident. It would be helpful to know ahead of time when critical issues are present, and to get to know our community residents better.	
RECOMMENDATION: Working with the Frederick-Firestone Fire Protection District, support the implementation of a program that allows residents to provide critical information on a voluntary basis to help first responders have critical knowledge about community members and locations prior to responding to the location. Critical issues could include property access, systems available (sprinklers), location details, people with disabilities who may need assistance or adaptive technology.	
ACTION: Support community education about potential hazards and public safety preparedness and the use of the Community Connect Program, when purchased and implemented by the Frederick-Firestone Fire Protection District.	
LEAD AGENCY: Frederick-Firestone Fire Protection District	EXPECTED COST: Unknown; will update as cost information is provided by vendor.

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SUPPORT AGENCIES: Town of Firestone, Town of Frederick, and the Carbon Valley Emergency Management Agency	POTENTIAL FUNDING SOURCES: FFFPD Budget, potential grant sources to be researched.
PROGRESS MILESTONES: The Towns of Firestone and Frederick will help to develop implementation plan, communicate, and educate the community about hazards and emergencies, and how the technology can support public safety and resilience, and actively invite the community to utilize the Community Connect tool. The Frederick-Firestone Fire Protection District will Identify cost, seek budget approval and funding, acquire software, help develop public messaging about the use of the software, educate FFFPD responders on the use of the information provided by the community, monitor and update the use of tool annually.	

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Carbon Valley - Frederick (4 Projects)

1-Frederick: Box Culvert at Bella Rosa Parkway	
PRIORITY: High	HAZARDS ADDRESSED: Flooding
LOCATION: Bella Rosa Parkway/No Name Creek	GOALS ADDRESSED: 1, 2, 3, 4
RECOMMENDATION DATE: 09/19/2015	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 09/20/2023	LIFELINES and SUBCOMPONENTS ADDRESSED: Safety and Security: Community Safety; Law, Fire, and Government Services. Transportation: Highway/Roadway
ISSUE: Flood control and drainage improvements have been done subsequent to the 2013 flood. More improvements are needed in order to withstand a 100-year flood.	
RECOMMENDATION: Completion of the box culverts as designed but not yet funded.	
ACTION: Engineering and construction of box culverts	
LEAD AGENCY: Town of Frederick	EXPECTED COST: $3 million
SUPPORT AGENCIES: Weld County OEM, Carbon Valley EMA	POTENTIAL FUNDING SOURCES: Town capital budget, CDBG, DOLA, EIAF
PROGRESS MILESTONES: This project has been partially completed - Damage was repaired but the lack of adequate box culverts to handle the 100-year flood will result in future damage. The Town of Frederick Stormwater Master Plan will identify this project as a priority.	

2-Frederick: Potable Water System Emergency Supply	
PRIORITY: Medium	HAZARDS ADDRESSED: Drought, Extreme Temperatures, Water Supply Suspension
LOCATION: SE4NE4 Section 32, Township 2, Range 67	GOALS ADDRESSED: 1, 2
RECOMMENDATION DATE: 2005, 2010	OBJECTIVES ADDRESSED: E

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TARGET COMPLETION DATE: 2025	LIFELINES and SUBCOMPONENTS ADDRESSED: Potable Water, Fire Suppression Supply, Pressure Regulation
ISSUE: Loss of service by Central Weld County Water District	
RECOMMENDATION: The CWCWD contract states that CWCWD will provide some emergency water but the Town must have storage to meet emergency supply needs. There is an existing interconnect with LHWD to CWCWD within Town limits which can provide an alternative supply if there is an issue with CWCWD service. To provide additional supplies to meet immediate needs in the event of an emergency the Town should build an additional storage tank. The Town currently receives water through a 2.58MG tank and direct connections to the CWCWD transmission mains. The construction of an additional 1.5 MG tank on the existing tank site would provide additional emergency storage capacity to serve the Town as the area that can be served through the tank site has grown.	
ACTION: Installation of additional storage tank to serve Frederick	
LEAD AGENCY: Frederick	EXPECTED COST: $4.5M
SUPPORT AGENCIES: CWCWD, LHWD	POTENTIAL FUNDING SOURCES: State Revolving Fund – Drinking Water
PROGRESS MILESTONES: Location identified	

3-Frederick: Town Facilities - Expansion & Modification	
PRIORITY: Medium	HAZARDS ADDRESSED: All
LOCATION: Town of Frederick	GOALS ADDRESSED: 1, 2
RECOMMENDATION DATE: 12/8/2020	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 12/31/2025	LIFELINES and SUBCOMPONENTS ADDRESSED: Safety & Security, Communications Components: Government Services, Law Enforcement and Security, Infrastructure, and Finance. (Continue to provide)
ISSUE: Limited space for employees to provide high levels of service to the community. Aging buildings are becoming costly for routine maintenance. Many key infrastructure items such as HVAC is past its life cycle. Workflow and ability to social distance during the 2020 COVID-19 pandemic is challenging with current building structures.	
RECOMMENDATION: Identify and construct a new Town Hall to meet the growing needs of the community for the next 30 years.	
ACTION: Obtain location and funding for larger Town Hall.	
LEAD AGENCY: Town of Frederick	EXPECTED COST: T.B.D.

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SUPPORT AGENCIES: Weld County OEM	POTENTIAL FUNDING SOURCES: Capital Facility Fee, Sales Tax Increase, Mill Levy Increase.
PROGRESS MILESTONES:	

4-Frederick: Community Connect Program	
PRIORITY: Medium	HAZARDS ADDRESSED: All
LOCATION: Town of Frederick	GOALS ADDRESSED: 1, 2, 3, 4
RECOMMENDATION DATE: 11/1/2021	OBJECTIVES ADDRESSED: A, C, E
TARGET COMPLETION DATE: 12/31/2022	LIFELINES and SUBCOMPONENTS ADDRESSED: Safety and Security: Fire, LE, SAR, Gov. Services and Community Safety. Communications: alerts, warnings, and messages. Health and Medical: Medical Care.
ISSUE: First responders have limited information about specific critical issues at a residence or location. They typically discover these issues when they arrive on scene of an incident. It would be helpful to know ahead of time when critical issues are present, and to get to know our community residents better.	
RECOMMENDATION: Working with the Frederick-Firestone Fire Protection District, support the implementation of a program that allows residents to provide critical information on a voluntary basis to help first responders have critical knowledge about community members and locations prior to responding to the location. Critical issues could include property access, systems available (sprinklers), location details, people with disabilities who may need assistance or adaptive technology.	
ACTION: Support community education about potential hazards and public safety preparedness and the use of the Community Connect Program, when purchased and implemented by the Frederick-Firestone Fire Protection District.	
LEAD AGENCY: Frederick-Firestone Fire Protection District	EXPECTED COST: Unknown; will update as cost information is provided by vendor.
SUPPORT AGENCIES: Town of Frederick, Town of Firestone, and the Carbon Valley Emergency Management Agency	POTENTIAL FUNDING SOURCES: FFFPD Budget, potential grant sources to be researched.
PROGRESS MILESTONES: The Towns of Firestone and Frederick will help to develop implementation plan, communicate, and educate the community about hazards and emergencies, and how the technology can support public safety and resilience, and actively invite the community to utilize the Community Connect tool. The Frederick-Firestone Fire Protection District will Identify cost, seek budget approval and funding, acquire software, help develop public messaging about the use of the software, educate FFFPD responders on the use of the information provided by the community, monitor and update the use of tool annually.	

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Eaton (3 Projects)

1-Eaton: Drought Plan Development	
PRIORITY: Medium	HAZARDS ADDRESSED: Drought
LOCATION: Eaton Community	GOALS ADDRESSED: 1, 2
RECOMMENDATION DATE:2021	OBJECTIVES ADDRESSED: C, E
TARGET COMPLETION DATE: 12/31/2021	LIFELINES: Food, Water, Shelter, Safety & Security SUBCOMPONENTS: Water supplies, Government Services
ISSUE: Eaton has been impacted previously by drought in the area. Much of the city water is piped in from Horsetooth Reservoir. Should the only water source for Eaton be impacted or disrupted the community would be left without water. Colorado's dry weather and drought conditions impact regional water reserves.	
RECOMMENDATION: Community to develop a drought plan to ensure better water usage and back up resources for city water supplies.	
ACTION: Conduct study, develop plan to develop redundant sources and retain needed water sources and supplies	
LEAD AGENCY: Town of Eaton	EXPECTED COST: TBD
SUPPORT AGENCIES: Weld OEM	POTENTIAL FUNDING SOURCES: Town budget, BRIC, additional grant funding
PROGRESS MILESTONES:	

2-Eaton: Roundabout Collins Rd & C R 35	
PRIORITY: Medium	HAZARDS ADDRESSED: All
LOCATION: Eaton Community	GOALS ADDRESSED: 2
RECOMMENDATION DATE:2021	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 12/31/2021	LIFELINES: Transportation, Safety & Security SUBCOMPONENTS: City Streets, County Roads, Community Safety
ISSUE: Eaton is currently building a new High School on the NE section by Collins Rd and C R 35, due to a study of traffic in that area, it is recommended that a roundabout be built at that intersection.	
RECOMMENDATION: recommended to build at roundabout at the Collins/ CR 35 intersection, due the amount of traffic and pedestrian foot traffic in the area that will increase with the completion of the High School.	

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ACTION: Roundabout construction	
LEAD AGENCY: Town of Eaton	EXPECTED COST: TBD
SUPPORT AGENCIES: Weld County, CDOT	POTENTIAL FUNDING SOURCES: Town budget, Weld County PW, additional grant funding
PROGRESS MILESTONES:	

3-Eaton: Pump Pit	
PRIORITY: Medium	HAZARDS ADDRESSED: Drought
LOCATION: Eaton Public Safety Training center: 320 4th St	GOALS ADDRESSED: 1,2
RECOMMENDATION DATE: Dec 2020	OBJECTIVES ADDRESSED: D, E
TARGET COMPLETION DATE: July 2021	LIFELINES: Food, Water, Shelter, Safety & Security SUBCOMPONENTS: Water supplies, Fire Services
ISSUE: Provisioning against future drought measures and in the interest of fire department essential training we are installing a "pump pit" that would be used for ongoing fire training but reuses a stored volume of water instead of direct hydrant use which often becomes run-off.	
RECOMMENDATION: A below ground pump pit with a capacity of 2500 gallons (minimum) to conserve water use during training under drought conditions for water conservation and to secure emergency water sources for public safety.	
ACTION: Budgeted and planned for installation summer 2021	
LEAD AGENCY: Eaton	EXPECTED COST: 90,000
SUPPORT AGENCIES: Town of Eaton under IGA approval for Training Center. Eaton Fire Protection District.	POTENTIAL FUNDING SOURCES: EFPD annual operating budget
PROGRESS MILESTONES:	

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Erie (12 Projects)

1-Erie: County Line Road, Tellane to Cheeseman	
PRIORITY: Medium	HAZARDS ADDRESSED: Severe storm
LOCATION: County Line Road, Tellane to Cheeseman	GOALS ADDRESSED: 1 and 2
RECOMMENDATION DATE: Design 2021	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 2023	LIFELINE: Transportation, Public Safety SUBCOMPONENT: Roadway
ISSUE: This section of County Line road has multiple connections and is between two schools and a day care center. There are no turn lanes or sidewalks. It is difficult for children to cross the roadway to get to school and cars back up waiting to make left turns. The Town has applied for a Safer Main Streets funding for this project. There have been multiple accidents in the stretch of County Line Road.	
RECOMMENDATION: Assuming the project will receive funding in early 2021, begin the design, and work with the power company to underground overhead lines. Construction is anticipated to begin in 2022. The project will include left turn lanes, rectangular rapid flashing beacons for pedestrian crossings, bike lanes and sidewalks on each side.	
ACTION: County Line Road, Telleen to Cheesman	
LEAD AGENCY: Todd Fessenden, 303-926-2895.	EXPECTED COST: $2,950,000
SUPPORT AGENCIES:	POTENTIAL FUNDING SOURCES: Transportation Impact Fund for 20%, DRCOG Safer Main Streets funding for 80%
PROGRESS MILESTONES:	

2-Erie: Coal Creek Improvements Reach 1	
PRIORITY: High	HAZARDS ADDRESSED: Flooding
LOCATION: Coal Creek from south of Cheeseman St to north of Briggs St	GOALS ADDRESSED: 1, 2, and 4
RECOMMENDATION DATE: Early 2021	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: Mid 2022	LIFELINE: Safety and Security SUBCOMPONENT: Community Safety
ISSUE: A Coal Creek Master Plan and a Flood Hazard Area Delineation (FHAD) study was completed for Coal Creek in 2016. The flows in Coal Creek increased from the FIS. Because of the increased	

flows, the Town worked with MHFD to study three reaches of Coal Creek from Cheesman St to Kenosha Rd. Reach 1 is just east of Old Town Erie. This section of Erie is protected from the 100-year flood with a levee. To ensure the Levee has adequate freeboard to continue to protect the Town, this section was designed. Currently the design and a CLOMR is being reviewed by FEMA.	
RECOMMENDATION: Once the CLOMR is approved by FEMA, the construction of the improvements will be completed, and a LOMR submitted to FEMA.	
ACTION: Coal Creek Improvements Reach 1	
LEAD AGENCY: Todd Fessenden, 303-926-2895.	EXPECTED COST: $2,000,000
SUPPORT AGENCIES:	POTENTIAL FUNDING SOURCES: Storm Drainage Fund
PROGRESS MILESTONES:	

3-Erie: Coal Creek Improvements Reach 2	
PRIORITY: High	HAZARDS ADDRESSED: Flooding
LOCATION: Coal Creek from Briggs Street to County Line Road.	GOALS ADDRESSED: 1, 2, and 4
RECOMMENDATION DATE: Begin design 2022	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 2026	LIFELINE: Safety and Security, SUBCOMPONENT: Community Safety
ISSUE: A Coal Creek Master Plan and a Flood Hazard Area Delineation (FHAD) study was completed for Coal Creek in 2016. The flows in Coal Creek increased from the FIS. Because of the increased flows, the Town worked with MHFD to study three reaches of Coal Creek from Cheesman St to Kenosha Rd. Reach 2 is between Briggs Street and County Line Road. Currently there is a conceptual design for this section. Property for the Coal Creek improvements needs to be acquired and a final design and permitting is needed before construction can occur. The improvements in this reach along with Reach 1 and 3 and a Bridge Replacement for County Line Road, has the potential to remove Weld County properties from the Flood Hazard Zone.	
RECOMMENDATION: Prepare a preliminary design and apply for funding for final design and construction.	
ACTION: Coal Creek Improvements Reach 3	
LEAD AGENCY: Todd Fessenden, 303-926-2895.	EXPECTED COST: $12,000,000
SUPPORT AGENCIES:	POTENTIAL FUNDING SOURCES: Storm Drainage Fund Grant funding from multiple sources such as CWCB, GoCO, FEMA and DRCOG.

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PROGRESS MILESTONES:

4-Erie: Coal Creek Improvements Reach 3	
PRIORITY: High	HAZARDS ADDRESSED: Flooding
LOCATION: Coal Creek from County Line Road to Kenosha Road	GOALS ADDRESSED: 1, 2, and 4
RECOMMENDATION DATE: Early 2021	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: Mid 2022	LIFELINE: Safety and Security SUBCOMPONENT: Community Safety
ISSUE: A Coal Creek Master Plan and a Flood Hazard Area Delineation (FHAD) study was completed for Coal Creek in 2016. The flows in Coal Creek increased from the FIS. Because of the increased flows, the Town worked with MHFD to study three reaches of Coal Creek from Cheesman St to Kenosha Rd. Reach 3 is between County Line Road and Kenosha Road. Currently the design and a CLOMR is being reviewed by FEMA.	
RECOMMENDATION: Once the CLOMR is approved by FEMA, the construction of the improvements will be completed, and a LOMR submitted to FEMA.	
ACTION: Coal Creek Improvements Reach 3	
LEAD AGENCY: Todd Fessenden, 303-926-2895.	EXPECTED COST: $5,000,000
SUPPORT AGENCIES:	POTENTIAL FUNDING SOURCES: Storm Drainage Fund and Mile High Flood District
PROGRESS MILESTONES:	

5-Erie: Old Town Drainage Improvements	
PRIORITY: High	HAZARDS ADDRESSED: Flooding
LOCATION: Old Town Erie to Coal Creek	GOALS ADDRESSED: 1, 2, and 4
RECOMMENDATION DATE: Begin design 2021, begin implementation of improvements in 2023	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 2024 for near term improvements	LIFELINE: Safety and Security SUBCOMPONENT: Community Safety
ISSUE: Old Town Erie's storm drainage system does not handle a minor storm. A conceptual plan has been developed to add detention and additional storm sewer systems. With redevelopment of	

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Old Town Erie, storm drainage improvements are needed to improve the exiting conditions and not make it worse.	
RECOMMENDATION: Begin the design for implementation of the Old Town Infrastructure Improvements for drainage. Need to review conceptual recommendations and implement a plan to complete improvements. Conceptual plan recommends 2.5 mill in next 5-years and 9.3 mill for mid to long term implementation.	
ACTION: Old Town Drainage Improvements	
LEAD AGENCY: Todd Fessenden, 303-926-2895.	EXPECTED COST: $3,500,000 for near term and 9,500,000 for long term.
SUPPORT AGENCIES:	POTENTIAL FUNDING SOURCES: Storm Drainage Fund Grant funding from multiple sources such as CWCB and DRCOG.
PROGRESS MILESTONES:	

6-Erie: Zone 3 Storage Tank	
PRIORITY: Medium	HAZARDS ADDRESSED: Severe storm, Drought
LOCATION: North of SH 52	GOALS ADDRESSED: 1 and 2
RECOMMENDATION DATE: Design 2021	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 2024	LIFELINE: Food Water Shelter SUBCOMPONENT: Water
ISSUE: The Town is developing new water supplies that will be locating on the north side of Erie. By constructing a new water treatment facility close to the water supplies the infrastructure needed to transport water for treatment will be reduced. A second water treatment facility will provide redundancy in the event of a natural disaster.	
RECOMMENDATION: Begin the design and permitting in 2021. Begin construction in 2022.	
ACTION: Zone 3 Water Storage Tank	
LEAD AGENCY: Todd Fessenden, 303-926-2895.	EXPECTED COST: $7,000,000
SUPPORT AGENCIES:	POTENTIAL FUNDING SOURCES: Water Fund
PROGRESS MILESTONES:	

7-Erie: Well Project	
PRIORITY: Medium	HAZARDS ADDRESSED: Severe storm, Drought

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LOCATION: North of SH 52	GOALS ADDRESSED: 1 and 2
RECOMMENDATION DATE: Design 2020	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 2024	LIFELINE: Food Water Shelter SUBCOMPONENT: Water
ISSUE: The Town is developing new water supplies that the well system is part of. Having diversified water supplies will provide redundancy in the event of a natural disaster.	
RECOMMENDATION: The design of a well system for water supply is underway. The installation and distribution system for the well system will begin construction in 2021. The water from the well system will be treated from a new water treatment facility.	
ACTION: Well project	
LEAD AGENCY: Todd Fessenden, 303-926-2895.	EXPECTED COST: $4,000,000
SUPPORT AGENCIES:	POTENTIAL FUNDING SOURCES: Water Fund
PROGRESS MILESTONES:	

8-Erie: Zone 2 Water System Improvements	
PRIORITY: High	HAZARDS ADDRESSED: Severe storm, Drought
LOCATION: Linear project between WCR 3, WCR 7, SH 52 and Erie Parkway	GOALS ADDRESSED: 1 and 2
RECOMMENDATION DATE: Design 2021	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 2024	LIFELINE: Food Water Shelter SUBCOMPONENT: Water
ISSUE: The Zone 2 Waterline Improvement project will provide the first phase in a needed Zone 2 transmission waterline and new Zone 2 water storage tank. This transmission line and storage tank will provide reliability to the Zone 2 water system. It is also needed to get water out to the Zone 2 distribution system.	
RECOMMENDATION: Begin the design and property acquisition for the storage tank and easements where the waterline is outside of right-of-way.	
ACTION: Zone 2 Water System Improvements	
LEAD AGENCY: Todd Fessenden, 303-926-2895.	EXPECTED COST: $12,000,000
SUPPORT AGENCIES:	POTENTIAL FUNDING SOURCES: Water Fund
PROGRESS MILESTONES:	

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9-Erie: Zone 3 Storage Tank	
PRIORITY: Medium	HAZARDS ADDRESSED: Severe storm, Drought
LOCATION: SW corner of Erie	GOALS ADDRESSED: 1 and 2
RECOMMENDATION DATE: Design 2021	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 2024	LIFELINE: Food Water Shelter SUBCOMPONENT: Water
ISSUE: The Zone 3 storage tank is needed for reliability. The existing tanks are on the east side of Erie, by placing a new storage tank on the west side it provides reliability and a balance to the water distribution system.	
RECOMMENDATION: Begin the design and property acquisition for the storage tank and easements for waterlines needed to connect to the tank waterline is outside of right-of-way.	
ACTION: Zone 3 Water Storage Tank	
LEAD AGENCY: Todd Fessenden, 303-926-2895.	EXPECTED COST: $7,000,000
SUPPORT AGENCIES:	POTENTIAL FUNDING SOURCES: Water Fund
PROGRESS MILESTONES:	

10-Erie: Zone 3 Waterline Improvements	
PRIORITY: High	HAZARDS ADDRESSED: Severe storm, Drought
LOCATION: from the existing water treatment facility west of 119th street to the existing water storage tank west of WCR 7.	GOALS ADDRESSED: 1 and 2
RECOMMENDATION DATE: Construction 2021	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 2021	LIFELINE: Food Water Shelter SUBCOMPONENT: Water
ISSUE: The Zone 3 Waterline Improvement project will provide an additional transmission waterline connecting the water treatment facility to the water storage tank site. It is not only needed to provide a back-up transmission line to the storage tank, but it is needed to get water out to the distribution system.	
RECOMMENDATION: This project is 95% designed and will be ready to bid and begin construction in 2021.	
ACTION: Zone 3 Waterline Improvements	

LEAD AGENCY: Todd Fessenden, 303-926-2895.	EXPECTED COST: $5,200,000
SUPPORT AGENCIES:	POTENTIAL FUNDING SOURCES: Water Fund
PROGRESS MILESTONES:	

11-Erie: Erie Parkway & WCR 7 Intersection Improvements	
PRIORITY: High	HAZARDS ADDRESSED: Severe storms, Flooding
LOCATION: Erie Parkway & WCR 7	GOALS ADDRESSED: 1 and 2
RECOMMENDATION DATE: Design 2020	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 2021	LIFELINE: Transportation SUBCOMPONENT: Roadway
ISSUE: The Town has designed the intersection improvements and is actively acquiring the additional ROW and easement needed for construction. The project includes adding turn lanes and a traffic signal. This intersection has experienced multiple accidents, exacerbated by severe weather. The first phase is to improve the roadway and the second is to install a traffic signal.	
RECOMMENDATION: Complete the right of way acquisition needed for the roadway improvements, then bid and construct the roadway improvements, then install the traffic signal.	
ACTION: Erie Parkway & WCR 7 Intersection Improvements	
LEAD AGENCY: Todd Fessenden, 303-926-2895.	EXPECTED COST: $4,000,000
SUPPORT AGENCIES:	POTENTIAL FUNDING SOURCES: Transportation Impact Fund for roadway improvements, FHWA funding for Traffic Signal
PROGRESS MILESTONES:	

12-Erie: Signal Communication Project	
PRIORITY: High	HAZARDS ADDRESSED: Severe storm
LOCATION: Town wide	GOALS ADDRESSED: 1 and 2
RECOMMENDATION DATE: Design 2021	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 2022	LIFELINE: Transportation SUBCOMPONENT: Roadway
ISSUE: The Town began looking into a signal communications project in 2018. Without adequate funding the project was put on hold. The Town was successful in acquiring funding in late 2020 for	

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the design and implementation of the project. This project will allow Town Staff to monitor and control the traffic signals. It will assist during storm events to monitor the roadway conditions. By having signals communicating traffic flow will be safer.	
RECOMMENDATION: Complete the funding agreement, start the design and implement the communications project.	
ACTION: Signal Communication Project	
LEAD AGENCY: Todd Fessenden, 303-926-2895.	EXPECTED COST: $910,000
SUPPORT AGENCIES:	POTENTIAL FUNDING SOURCES: General Fund, DRCOG funding qualified intersections
PROGRESS MILESTONES:	

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Evans (3 Projects)

1-Evans: 31st Street Stormwater Outfall	
PRIORITY: High	HAZARDS ADDRESSED: Flooding
LOCATION: 31st Street from HWY 85 east to the railroad track.	GOALS ADDRESSED: 1, 2
RECOMMENDATION DATE: 2016	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 7/2021	LIFELINE: Stormwater & Transportation SUBCOMPONENT: Rivers & City Streets
ISSUE: This project will reduce localized flooding problems and reduce transportation problems during high water/storm events.	
RECOMMENDATION: Enlarging pipeline and increase conveyance capacity.	
ACTION: Additional pipeline crossing US Highway 85 and Union Pacific Railroad and installation of east Side stormwater piping and inlets. Mitigate stormwater interfering with transportation routes, general public safety/protection from flooding.	
LEAD AGENCY: City of Evans	EXPECTED COST: <$10,000,000.00
SUPPORT AGENCIES: Colorado Water Resources and Power Development Authority	POTENTIAL FUNDING SOURCES: State Revolving Fund
PROGRESS MILESTONES: 60% plans received 12/4/20. Anticipated construction date March/April 2021.	

2-Evans: Bay at the Landings Inlet Flood Mitigation	
PRIORITY: Medium	HAZARDS ADDRESSED: Flooding
LOCATION: Boardwalk/Anchor	GOALS ADDRESSED: Mitigating flooding to residences from insufficient inlet capacity.
RECOMMENDATION DATE: 2016	OBJECTIVES ADDRESSED: Residences on Boardwalk were getting flooded due to stormwater, traffic was impacted on local collector due to stormwater.
TARGET COMPLETION DATE: 12/31/2020	LIFELINE: Stormwater & Transportation SUBCOMPONENT: Rivers & City Streets
ISSUE: Flooding prevention and traffic improvement.	
RECOMMENDATION: Enlarge storm drainage inlets.	
ACTION: Construction per recommendation above.	
LEAD AGENCY: City of Evans	EXPECTED COST: $80,000.00

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SUPPORT AGENCIES: N/A	POTENTIAL FUNDING SOURCES: Local
PROGRESS MILESTONES: Completion of construction 12/31/2020.	

3-Evans: Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning	
PRIORITY: High	HAZARDS ADDRESSED: All Hazards
LOCATION: Evans	GOALS ADDRESSED: 1-4
RECOMMENDATION DATE: 07.31.2021	OBJECTIVES ADDRESSED: A, B, C, D, E
TARGET COMPLETION DATE: 12.31.2021	LIFELINE: Public Safety SUBCOMPONENT: All
ISSUE: Due to the potential impact of severe storms, long term power outages, tornados, proximity of hazmat routes and the lack of sheltering capabilities in the community; the impact by natural hazards and cascading events would require Evans to acquire outside assistance to shelter local residents.	
RECOMMENDATION: Conduct a Community Impact study to identify vulnerable areas and neighborhoods that be greatly impacted by identified high ranking natural hazards or the cascading effects of natural hazards. Identify shelter locations, that include generators, capability to sustain winds up to 200 mph, cots, blankets and maintain supplies for emergency provisions. Provide Train the Trainer course to include preparation for all hazards that could impact the community. Update Emergency planning to include early warning procedures and sheltering/shelter-in-place protocols. Harden infrastructure systems to prevent long term disruption of services and supplies. Identify and obtain grant funding for all components of above projects.	
ACTION: identifying shelters and designating them as critical facilities - providing backup power through fixed generators - mitigating the shelters against hazards (wind, flood, fire, etc.) - building safe rooms or shelters for identified vulnerable areas that need them	
LEAD AGENCY: City of Evans	EXPECTED COST: Staff Time
SUPPORT AGENCIES: Weld OEM	POTENTIAL FUNDING SOURCES: TBD
PROGRESS MILESTONES:	

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Fort Lupton (6 Projects)

1-Fort Lupton: Warning Sirens	
PRIORITY: High	HAZARDS ADDRESSED: Severe Storms
LOCATION: City of Fort Lupton	GOALS ADDRESSED: 1, 2
RECOMMENDATION DATE: 11-16-2020	OBJECTIVES ADDRESSED: A, E
TARGET COMPLETION DATE: December 2023	LIFELINE: Safety and Security; Communications SUBCOMPONENT: Community Safety; Infrastructure; Alerts
ISSUE: As the community grows additional outdoor warning sirens will be needed to help cover areas outside the current range of the sirens already functioning. A lot of growth including a new fire station has occurred in the southern region of our community. Expansion of Fort Lupton's outdoor warning system within our growing community is essential to efforts to minimize loss of life during severe weather events. The development is also underway to the west which if positioned correctly could also help warn neighboring communities.	
RECOMMENDATION: Install an early warning system to minimize loss of life and increase public safety.	
ACTION: Install Outdoor Warning Sirens.	
LEAD AGENCY: City of Fort Lupton	EXPECTED COST: $60,000 x 2 = $120,000
SUPPORT AGENCIES: Fort Lupton Fire	POTENTIAL FUNDING SOURCES: Grants, City Capital Improvements Budget, Private Funding
PROGRESS MILESTONES: Work with Fire to ensure proper placement. Obtain funding to install. Ensure they are functional under the dispatch alert system.	

2-Fort Lupton: Emergency Notification Signs	
PRIORITY: Medium	HAZARDS ADDRESSED: Severe Storms, Hazmat, Flooding, Tornado's
LOCATION: City of Fort Lupton	GOALS ADDRESSED: 1, 2,
RECOMMENDATION DATE: 11-16-2020	OBJECTIVES ADDRESSED: A, D, E
TARGET COMPLETION DATE: December 2025	LIFELINE: Transportation; Safety and Security SUBCOMPONENT: Alerts; Search and Rescue; Community Safety
ISSUE: There are several instances during severe weather that a void of information about conditions in the area is lacking. This information signage and weather camera service would help local and regional services to have a better understanding of the conditions on the ground.	

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RECOMMENDATION: Work with CDOT to get additional information for the traveling public, service agencies, and emergency response on both Highway 85 and Highway 52.	
ACTION: Install Emergency Notification Sign and Weather Station with CDOT	
LEAD AGENCY: City of Fort Lupton	EXPECTED COST: $ unknown at this time
SUPPORT AGENCIES: CDOT, State Patrol, Traffic Management Team	POTENTIAL FUNDING SOURCES: Grants, CDOT, City Capital Improvements Budget
PROGRESS MILESTONES: Get a planning meeting together with CDOT to help guide pathways. Obtain funding. Install and get functional on CDOT system.	

3-Fort Lupton: Water Storage	
PRIORITY: Medium	HAZARDS ADDRESSED: Drought, Severe Storms
LOCATION: City of Fort Lupton	GOALS ADDRESSED: 1, 2
RECOMMENDATION DATE: 11-16-2020	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: December 2025	LIFELINE: Food Water Shelter SUBCOMPONENT: Water
ISSUE: The City requires water storage for augmentation planning of well use. Additional storage capacity will provide redundancy in the event severe drought.	
RECOMMENDATION: Multiple opportunities are available due to gravel mining operations within City limits.	
ACTION: Well Project	
LEAD AGENCY: City of Fort Lupton	EXPECTED COST: $750,000
SUPPORT AGENCIES: Colorado Water Board	POTENTIAL FUNDING SOURCES: City Capital Improvements Budget, Utility Fund, Water Sales Tax
PROGRESS MILESTONES: Obtain right of first refusal from current mine operations. Obtain funding to purchase mining properties for water storage (post mining operations).	

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4-Fort Lupton: Well Inclusions	
PRIORITY: Medium	HAZARDS ADDRESSED: Drought, Severe Storms
LOCATION: City of Fort Lupton	GOALS ADDRESSED: 1, 2
RECOMMENDATION DATE: 11-16-2020	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: December 2025	LIFELINE: Food Water Shelter SUBCOMPONENT: Water
ISSUE: The City is expanding new water supplies that the well system is part of. Having diversified water supplies will provide redundancy in the event of a natural disaster.	
RECOMMENDATION: A non-potable well system for water supply is operating in the city. The installation and distribution system for the well system continues to grow to help offset potable water demands. The system continues to provide a source that if needed could integrate to a mixed system to produce treated water. The addition of key wells will help to insure functionality of the pressurized system.	
ACTION: Well Project	
LEAD AGENCY: City of Fort Lupton	EXPECTED COST: $500,000
SUPPORT AGENCIES:	POTENTIAL FUNDING SOURCES: City Capital Improvements Budget, Utility Fund, Water Sales Tax
PROGRESS MILESTONES: Have wells included into augmentation plan. Obtain funding to have connections made and well in operation. Master plan for non-potable water system.	

5-Fort Lupton: Localized Flooding	
PRIORITY: High	HAZARDS ADDRESSED: Flood
LOCATION: City of Fort Lupton	GOALS ADDRESSED: 1, 2, 4
RECOMMENDATION DATE: 01/01/2019	OBJECTIVES ADDRESSED: D, E
TARGET COMPLETION DATE: Annually portions through 2025	LIFELINE: Safety and Security; Transportation SUBCOMPONENT: Community Safety; Highway/Roadway
ISSUE: Existing storm drainage infrastructure is undersized and aging. Many CMP require replacement with larger RCP. Multiple major drainage basins have no viable outfall to the west.	
RECOMMENDATION: Storm Sewer systems to direct flows west to be designed and constructed. Kahil Street from S Denver Ave to detention provided in Lone Pine Park. Storm sewer / channeled outfall along future 14th Street extension to discharge to existing Golden Pond detention facility. Identify and map storm sewer network, prioritize replacement.	

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ACTION: Coordinate with new developments and program projects into CIP..	
LEAD AGENCY: City of Fort Lupton	EXPECTED COST: $2,500,000
SUPPORT AGENCIES:	POTENTIAL FUNDING SOURCES: Storm Drainage Fund (Revision of fee basis on % pervious surface per lot/parcel)
PROGRESS MILESTONES: GIS mapping and camera inspection summer 2021 CR 31/14th St outfall - Coordination begun / Develop design and participation method. Kahil outfall is currently under Construction as of 11/15/2020. Anticipated completion early 2021 Update Master Drainage Plan	

6-Fort Lupton: Emergency Shelter Generator	
PRIORITY: High	HAZARDS ADDRESSED: All
LOCATION: Fort Lupton Recreation and Community Center (203 S. Harrison Ave, Fort Lupton, CO 80621)	GOALS ADDRESSED: 1, 2
RECOMMENDATION DATE: 11-16-2020	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: December 2022	LIFELINE: Safety and Security; Food, Water, Shelter; SUBCOMPONENT: Search and Rescue; Shelter; water; food
ISSUE: Currently there is no back-up power to this location to support emergency coordination functions.	
RECOMMENDATION: The wiring and installation of a generator and a transfer switch would allow for a reliable back up power source at a single critical city facility. This generator would support city staff and services at this location and would allow for the relocation of staff and continuity of critical services. It is identified as an emergency shelter location. In addition, emergency support related services and functions could be coordinated from this location. Critical emergency support functions-operation of the Emergency Operations Center (EOC), location of the Policy Group meeting area and information center, the Joint Information Center (JIC) and local law enforcement operations could also function at this location if need be.	
ACTION: Install a generator and associated wiring at the Fort Lupton Recreation Center in an effort to support emergency functions during a short or long term power outage.	
LEAD AGENCY: City of Fort Lupton	EXPECTED COST: $250,000 to $300,000
SUPPORT AGENCIES:	POTENTIAL FUNDING SOURCES: Grants, City Capital Improvements Budget

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PROGRESS MILESTONES:

Develop and publish an RFP

Construction to wire the building (in coordination with PD and United Power) to include locating, digging, accessing and splitting existing cabling

Install transfer switch and complete wiring

Complete installation of generator and initiate testing

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Greeley (2 Projects)

1-Greeley- Extreme Heat / Drought Resiliency Program Development	
PRIORITY: Medium	HAZARDS ADDRESSED: Drought/ Extreme Heat
LOCATION: City of Greeley	GOALS ADDRESSED: 1, 2
RECOMMENDATION DATE: 2020	OBJECTIVES ADDRESSED: A, B, C, D
TARGET COMPLETION DATE: TBD	LIFELINE: Safety & Security, Water, Food, Shelter, Health & Medical SUBCOMPONENT: Community Safety, Food, Water, Agriculture, Public Health
ISSUE: Projected increases in frequency and intensity of extreme heat events and drought	
RECOMMENDATION: Collaborate between various City departments and programs to mitigate extreme heat events and droughts with various mitigation measures including tree plantings (Share the Shade), bluegrass conversion to native lawns (Water Conservation), backyard xeric habitats (Natural Areas & Trails), restored native ecosystems (Natural Areas & Trails).	
ACTION: Extreme Heat and Drought Resiliency	
LEAD AGENCY: City of Greeley Culture, Parks and Recreation Department	EXPECTED COST: Multi-million and multi-year projects
SUPPORT AGENCIES: City of Greeley Public Works Department and Community Development Department	POTENTIAL FUNDING SOURCES: City of Greeley and grant opportunities
PROGRESS MILESTONES: • locating and adding shade structures where appropriate (picnic shelters, shade umbrellas/sails) in park areas • Forestry's "Share the Shade" program to encourage private property owners to plant trees to increase shade canopy and reduce heat islands in the community • Bluegrass turf conversion to native lawns (Water Conservation) • Backyard xeric habitats (Natural Areas & Trails, Water Conservation) • Restored native ecosystems in City Natural Areas • Reduction of turf areas in City Parks (Parks)	

2-Greeley: Prairie Fire Mitigation Program Development / CWPP	
PRIORITY: High	HAZARDS ADDRESSED: Prairie Fires
LOCATION: City of Greeley	GOALS ADDRESSED: 1, 2
RECOMMENDATION DATE: 2020	OBJECTIVES ADDRESSED: A, B, C, D
TARGET COMPLETION DATE: TBD	Lifeline: Safety & Security Subcomponent: Fire Services, Community Safety,

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ISSUE: Non-native vegetation dominates much of the undeveloped land with Greeley's LREGA, including within the City's Natural Areas properties. Encroachment of development adjacent to Natural Areas and other Open Lands provides a plains version of a Wildland-Urban Interface strategy.	
RECOMMENDATION: Coordinate between Greeley Fire Dept., Natural Areas & Trails, Stormwater, and Water & Sewer to develop grassland management plans, SOPs for mowing/grazing/haying and other methods of vegetation management, develop and maintain wildland fire resources including equipment and staff with sufficient certifications to support prescribed fire program.	
ACTION: Fire Mitigation in the City-limits (Community Wildfire Protection Plan)	
LEAD AGENCY: Greeley Fire Department	EXPECTED COST: Undetermined
SUPPORT AGENCIES: State of Colorado Division of Fire Protection and Control (DFPC), City of Greeley Culture, Parks and Recreation Department, National Wildfire Coordinating Group (NWCG)	POTENTIAL FUNDING SOURCES: City of Greeley and State of Colorado
PROGRESS MILESTONES: • 2018 -2019 Draft Outline for Fire Chief • City Department collaboration	

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Greeley PW (7 Projects)

1-Greeley - PW: City-Initiated Floodway Rezone	
PRIORITY: Medium	HAZARDS ADDRESSED: Flooding
LOCATION: City of Greeley	GOALS ADDRESSED: 2
RECOMMENDATION DATE: 2015	OBJECTIVES ADDRESSED: C
TARGET COMPLETION DATE: 2024 – Following adoption of state Risk Map updated flood study	LIFELINE: Water, Food, Shelter, SUBCOMPONENT: Waterways, Residential Areas,
ISSUE: Following adoption of the State of Colorado updated flood study, the City of Greeley will initiate a floodway rezone of all properties impacted by the revised floodway boundary. Properties within the revised floodway will be rezoned Conservation District (C-D) to restrict development within this area and preserve natural open space.	
RECOMMENDATION: Restricted development within the regulated floodway and preservation of natural open space	
ACTION: City-Initiated Floodway Rezone	
LEAD AGENCY: City of Greeley	EXPECTED COST: Under development
SUPPORT AGENCIES:	POTENTIAL FUNDING SOURCES: Under development, likely largely in house
PROGRESS MILESTONES: This has been identified by the city as a future zoning map change. This mitigation action item will be continued as a mitigation action item for the 2016 plan update.	

2-Greeley - PW: Mitigate Risk to Severe Repetitive Loss Property	
PRIORITY: Medium	HAZARDS ADDRESSED: Flooding
LOCATION: 760 71st Ave, Greeley, CO 80631. Property not within city limits	GOALS ADDRESSED: 1
RECOMMENDATION DATE: 2015	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 2025	LIFELINE: Food, Water, Shelter, Safety & Security SUBCOMPONENT: Waterways, Residential homes, Community Safety
ISSUE: This residence has severe repetitive loss history due to flooding on the Cache la Poudre River. The City of Greeley provides resources (man power, sand bags) to this property during flooding events as it is directly abuts city limits and city crews are typically mitigating road closures next to this property. The city attempted to purchase/acquire this property through the HMGP process in 2014 but was unsuccessful due to valuation discrepancies.	
RECOMMENDATION: Reduce or eliminate severe repetitive flood losses on this property.	
ACTION: Continue to work with property owner on flood mitigation efforts and consider acquisition if conditions allow and are favorable to all parties.	

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LEAD AGENCY: City of Greeley	EXPECTED COST: $400,000
SUPPORT AGENCIES: City of Greeley Office of Emergency Management	POTENTIAL FUNDING SOURCES: CDBG, HMGP
PROGRESS MILESTONES: Program not funded; no current timeline established	

3-Greeley - PW: Cache la Poudre, West Greeley Project (Corps of Engineers)	
PRIORITY: High	HAZARDS ADDRESSED: Flooding
LOCATION: Poudre River Corridor between 83rd Avenue and 47th Avenue	GOALS ADDRESSED: 1
RECOMMENDATION DATE: Begin first phase construction 2016	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 2025	LIFELINES: Food, Water, Shelter, Transportation SUBCOMPONENT: Waterways, City Streets
ISSUE: As a nationally significant ecosystem, portions of the Cache la Poudre River that flow through Greeley and areas adjacent to Greeley, years of channelization of the river and neglect and invasion of non-native weeds and vegetation have significantly reduced habitat loss. Restoration of wetland and riparian habitats can provide critical floodplain and river corridor connections, habitat for state-listed threatened and endangered species, and international bird habitat. The COE has identified a total of nine (9) parcels to rehabilitate, of which five (5) are identified as a first phase for improvements. Out of these 5 parcels, 1 or 2 may be addressed in the first year of a multi-year project. Although the Project doesn't specifically address flood control, a desired outcome is addressing the river channel itself and preserving/planning for the inevitable future flooding of the corridor and water flows.	
RECOMMENDATION: Phase 1 construction is complete. Additional funding to complete other phases is being considered.	
ACTION: Environmental restoration and controlled recreational access	
LEAD AGENCY: City of Greeley	EXPECTED COST: $12,967,000 (Phase II)
SUPPORT AGENCIES: All COG, Parks and Rec	POTENTIAL FUNDING SOURCES: Great Outdoors Colorado (Colorado Lottery), City of Greeley Water/Sewer Dept., US Department of Defense/Corps of Engineers, Conservation Trust Fund
PROGRESS MILESTONES: Design – 2015/2016, Construction in phases starting in 2016	

4-Greeley - PW: Poudre River Cleaning	
PRIORITY: Low	HAZARDS ADDRESSED: Flooding
LOCATION: City of Greeley	GOALS ADDRESSED: 1
RECOMMENDATION DATE: 2015	OBJECTIVES ADDRESSED: E

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TARGET COMPLETION DATE: 2023	LIFELINE: Food, Water, Shelter SUBCOMPONENT: Waterways
ISSUE: The Cache la Poudre River is known from several studies including a 1999 Army Corps of Engineers study, to have sediment building up in it and therefore over time has been silting in and losing capacity. A program to clean the river of its sandbars, sediment and remove some vegetation is necessary to help convey flood flows through the City of Greeley. This will help especially mountain snow melt events that happen annually and fill the main channel most years and tend to cause minor to moderate flooding in many areas.	
RECOMMENDATION: To develop a program to annually evaluate maintaining the Poudre River by removing any sand bars and any unwanted vegetation that are restricting main channel flows. The program likely would take several years to work through the City limits, and then would cycle back to the beginning and evaluate the corridor continuously as needed. Bridges also need to be evaluated, but need to be done annually to ensure they are clear.	
ACTION: Clean sediment and vegetation from the Cache la Poudre main channel to restore main channel flow capacity.	
LEAD AGENCY: City of Greeley	EXPECTED COST: $1,500,000
SUPPORT AGENCIES: US Army Corps of Engineers, Public Works Department	POTENTIAL FUNDING SOURCES: FEMA grant and Stormwater Utility
PROGRESS MILESTONES: Removal of all sandbars, restrictions and unwanted vegetation.	

5-Greeley - PW: Highway 85 Bridge Replacement	
PRIORITY: High	HAZARDS ADDRESSED: Flooding
LOCATION: City of Greeley	GOALS ADDRESSED: 1
RECOMMENDATION DATE: 2015	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 2027	LIFELINE: Transportation, Water, Food, Shelter SUBCOMPONENT: Bridges, City Streets, Water Treatment Facility
ISSUE: The Cache la Poudre River floodplain model shows that the river overtops the Highway 85 bridge near the Greeley Water Pollution Control Facility. Past flooding events of less than 100 year events have also demonstrated that this bridge is easily overtopped at less than a 25 year storm event. When this bridge is overtopped all other roads except 59th Avenue that run north and south are underwater. With Highway 85 flooded greatly impedes the ability for people, commerce, and emergency vehicles to navigate the city and reach citizens on the northern area of the city. River flood events typically last for many weeks so impacts to the community can be very impactful and devastating.	
RECOMMENDATION: Replace the Highway 85 Bypass bridge over the Cache la Poudre River.	
ACTION: Replace the bridge with a higher capacity bride including some channel improvements to improve capacity of the river at this location.	

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LEAD AGENCY: Colorado Department of Transportation & the City of Greeley	EXPECTED COST: $8,000,000
SUPPORT AGENCIES: Colorado Department of Transportation, Army Corps of Engineers, FEMA, Public Works Department, 970-350-9795	POTENTIAL FUNDING SOURCES: FEMA grant, CDOT FASTER Funds
PROGRESS MILESTONES: Completion of bridge replacement and channel improvements.	

6-Greeley - PW: River Bypass Channel	
PRIORITY: Medium	HAZARDS ADDRESSED: Flooding
LOCATION: City of Greeley	GOALS ADDRESSED: 1
RECOMMENDATION DATE: 2015	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 2021	LIFELINE: Food, Water, Shelter. Transportation SUBCOMPONENT: Rivers, Water Treatment Facility, City Streets, State Highways
ISSUE: The Cache la Poudre River floodplain model shows that the river splits around the Greeley Water Pollution Control Facility. This isolates and floods some of the property limiting access to the plant. Additionally many businesses along east 8th Street east of Highway 85 are flooded.	
RECOMMENDATION: Channel improvements and/or a by-pass channel are needed to guide water safely around the Water Pollution Control Facility and many businesses along 8th Street east of Highway 85. This would safely control flows and route them back to the river on the eastern side of Greeley.	
ACTION: Purchase property and build a by-pass channel to route flows from the Poudre River west of Highway 85 and route them north of East 8th Street and then back into the river in eastern Greeley.	
LEAD AGENCY: City of Greeley	EXPECTED COST: $18,000,000
SUPPORT AGENCIES: US Army Corps of Engineers, FEMA, Public Works Department	POTENTIAL FUNDING SOURCES: FEMA grant, Federal Block Grant Funds, Stormwater Utility
PROGRESS MILESTONES: Completion of by-pass channel improvements.	

7-Greeley - PW: Poudre River Flood Mitigation Master Planning Project – Ash Ave to 21st Ave	
PRIORITY: High	HAZARDS ADDRESSED: Flooding
LOCATION: City of Greeley	GOALS ADDRESSED: 1
RECOMMENDATION DATE: 2019	OBJECTIVES ADDRESSED: E

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TARGET COMPLETION DATE: Fall 2030	LIFELINE: Food, Water, Shelter, Transportation SUBCOMPONENT: Waterways, City Streets,

ISSUE:

Over the past 150-years the Poudre River has been significantly modified by human activity, particularly along the reach from Fern Avenue to 47th Avenue. These modifications include channelization, encroachment, soil berms along the river banks, gravel mining, floodplain disconnection, and river relocation. As a result of these modifications, the city experiences significant flooding from small to medium sized hydrologic events, on the order of 15-30 year recurrence frequency. Most notably the floods of 1983, 1999, and 2014 have caused significant property damage to the city.

The city's largest exposure to riverine flooding is along the reach from Ash Avenue to 11th Avenue, or approximately 2.3 miles. In the spring of 2014, a large spring runoff event overtopped the 6th Avenue river berm and inundated approximately 46-acres of commercial-industrial area.

Development restrictions associated with the FEMA Special Flood Hazard Area (SFHA) encumber a significant amount of developed property between 11th Avenue and Ash Avenue. This includes residential neighborhoods, commercial businesses, and industrial businesses. It is estimated that every road along the river in this area would be flooded in a 100-year event, including the US Highway 85 Bypass. Further, there is a large flow split at the US-85 Bypass that proceeds to the east along E. 8th Street (also known as SH-263) and does not have a defined return flow-path to the river.

RECOMMENDATION:

This project produced a comprehensive Poudre River flood mitigation master plan document for the following river reaches:

- Greeley Urban Reach: Specifically from the Ogilvy Ditch head structure (1,400-feet downstream from Ash Avenue) and proceeding upstream to 21st Avenue; approximately 17,600-feet along the Poudre River.
- East 8th Street Flow Split: Specifically from the flow split off the main channel at US Highway 85 then proceeding east (downstream) along 8th Street until the flow split returns to the main river channel, approximately 7,000 – 8,000-feet along E. 8th Street.

This project should produce a Master Plan along the Poudre River to guide river maintenance, reduce flood losses, and potentially remove properties from the FEMA 100-yr floodplain. The Master Plan document will be used by the City to guide a river channel maintenance program, identify and prioritize flood mitigation projects, provide scientific basis for granting opportunities (Federal, State, and Other) to fund capital projects, and facilitate the refinement of the effective FEMA river model along the study reach. This plan shall be feasible, implementable, and provide a foundation for pursuing grant funding opportunities.

ACTION: City-Initiated Flood Mitigation Master Planning Project

LEAD AGENCY: City of Greeley	EXPECTED COST: $60,000,000
SUPPORT AGENCIES: City of Greeley Office of Emergency Management, Public Works Department	POTENTIAL FUNDING SOURCES: City of Greeley

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PROGRESS MILESTONES:

- Implementation of the masterplan and the identified projects.

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Hudson (3 Projects)

1-Hudson: Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning	
PRIORITY: High	HAZARDS ADDRESSED: All hazards
LOCATION: Town of Hudson	GOALS ADDRESSED: 1-4
RECOMMENDATION DATE: 7/31/2021	OBJECTIVES ADDRESSED: A, B, C, D, E
TARGET COMPLETION DATE: 12/31/2021	Lifelines: Public Safety
ISSUE: ISSUE: Due to the potential impact of severe storms, long term power outages, tornados, proximity of hazmat routes and the lack of sheltering capabilities in the community; the impact by natural hazards and cascading events would require Hudson to acquire outside assistance to shelter local residents.	
RECOMMENDATION: Conduct a Community Impact study to identify vulnerable areas and neighborhoods that be greatly impacted by identified high ranking natural hazards or the cascading effects of natural hazards. Identify shelter locations, that include generators, capability to sustain winds up to 200 mph, cots, blankets and maintain supplies for emergency provisions. Provide Train the Trainer course to include preparation for all hazards that could impact the community. Update Emergency planning to include early warning procedures and sheltering/shelter-in-place protocols. Harden infrastructure systems to prevent long term disruption of services and supplies. Identify and obtain grant funding for all components of above projects.	
ACTION: identifying shelters and designating them as critical facilities - providing backup power through fixed generators - mitigating the shelters against hazards (wind, flood, fire, etc.) - building safe rooms or shelters for identified vulnerable areas that need them	
LEAD AGENCY: Town of Hudson	EXPECTED COST: Staff Time,
SUPPORT AGENCIES: Weld OEM,	POTENTIAL FUNDING SOURCES: TBD
PROGRESS MILESTONES:	

2-Hudson: Repeater System	
PRIORITY: Medium	HAZARDS ADDRESSED: All Hazards
LOCATION: Town of Hudson	GOALS ADDRESSED: 1, 2
RECOMMENDATION DATE: 2021	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 2021	LIFELINES: Safety & Security, Transportation, Communications SUBCOMPONENTS: Government Services, Roadways, PW Communications

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ISSUE: The Public Works Department does not have a reliable means to communicate efficiently and safely when operating heavy machinery on a blue sky day and is more dangerous and life threatening during severe storms when working in different parts of the Town. Use of cellphones is illegal while operating heavy equipment.	
RECOMMENDATION: Integrate a repeater system to strengthen and harden the communication systems for Public Safety and Communications to include communications with essential workers to clear arterial roadways for first responders during a disaster/storm. enable the Public Works Department to communicate effectively and quickly across the community.	
ACTION: Integrate repeater into communications systems, receive training in use of system, test out and operate new system.	
LEAD AGENCY: Town of Hudson	EXPECTED COST: $16,000
SUPPORT AGENCIES: Town of Hudson Admin Department Public Works Department,	POTENTIAL FUNDING SOURCES: Hudson 2021 FY Budget
PROGRESS MILESTONES: Integration of repeater system; all essential staff trained; full implementation of system into daily operations.	

3-Hudson: Updates Comprehensive Plan / Identify Mitigation actions	
PRIORITY: High	HAZARDS ADDRESSED: All Hazards
LOCATION: Hudson	GOALS ADDRESSED: 1, 2, 4
RECOMMENDATION DATE: Immediately	OBJECTIVES ADDRESSED: C, D, E
TARGET COMPLETION DATE: 2021	LIFELINE: All SUBCOMPONENT: All
ISSUE: Creation of a Comprehensive Plan that will address all potential hazards from blizzards, to active shooter, to pandemics. Upon finalization, this will include a separate list of mitigation items for the Town to work on as well as be tested in semiannual tabletop exercises.	
RECOMMENDATION: Due to the current COVID-19 situation, the majority of the writing will be done by Town of Hudson staff, a full draft provided to regional partners to review and offer revisions before final adoption. Afterwards, additional mitigation items and semiannual tabletops can lead to improvements and corrections of the Comprehensive Plan.	
ACTION: Regional support for the project, potential to be used as a template for other smaller communities in Weld County.	
LEAD AGENCY: Town of Hudson	EXPECTED COST: None (Staff time)
SUPPORT AGENCIES: Several Regional Partners including Weld County OEM, Hudson Fire Protection District, BNSF,	POTENTIAL FUNDING SOURCES: N/A

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United Power, Northern Water, RE-3J School District, Best Western, Weld County Dispatch, CDOT, among other private businesses.	
PROGRESS MILESTONES: First draft of Comprehensive Plan; review by regional partners and other stakeholder groups; adoption; semiannual tabletop training exercise; additional mitigation items discovered through development of Comprehensive Plan.	

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Johnstown (5 Projects)

1-Johnstown: Resiliency Study	
PRIORITY: Medium	HAZARDS ADDRESSED: Drought, Land Subsidence, Extreme Temperatures, Flood, Public Health, prairie fire
LOCATION: Town Wide	GOALS ADDRESSED: 3, 4
RECOMMENDATION DATE:	OBJECTIVES ADDRESSED: A, C, D, E
TARGET COMPLETION DATE: 10/31/2021	LIFELINE: All SUBCOMPONENT: All
ISSUE: Traditional preparedness education has not been measured, and as a result, we don't have a good understanding of their effectiveness. Johnstown wants to better understand the vulnerability and capability of the people in our communities, and work toward building resilience to preparedness outreach and education.	
RECOMMENDATION: Johnstown has in the works a resiliency study being done with an outside firm. The goal would be to compare ours to other communities and continue adding to the study to create a better understanding of needs as the Town grows.	
ACTION: Conduct/Finish a resiliency study	
LEAD AGENCY: Johnstown	EXPECTED COST: OEM staff time, contractor costs $75,000.
SUPPORT AGENCIES: Community Emergency Managers and First Responder Agencies	POTENTIAL FUNDING SOURCES: grants; private grant or Johnstown government special project funding (if available).
PROGRESS MILESTONES: An actual study is being conduct with a private firm	

2-Johnstown: Drainage Improvements Old Town	
PRIORITY: High	HAZARDS ADDRESSED: Flooding
LOCATION: Old Town Basin	GOALS ADDRESSED: 1, 2
RECOMMENDATION DATE: 10.12.2008	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 10.12.2021	LIFELINE: Transportation, Food, Water, Shelter SUBCOMPONENT: Town roads, waterways
ISSUE: The old town basin was constructed during a time when urban drainage design was not used. This area is 90% surface run water from events and creates flooding in the old Town community. The Town has hired a consultant to study and design a new drainage in the area and produce a project list for improvements that would help protect people and property in the area from future floods and ensure the road stays open to travel.	

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RECOMMENDATION: It will be implemented as funding becomes available in 2021 or 2022 at the latest	
ACTION: Install inlets and underground piping to remove surface flow and carry water safely to drain ways	
LEAD AGENCY: Johnstown	EXPECTED COST: Implementation costs are 2.7 million
SUPPORT AGENCIES:	POTENTIAL FUNDING SOURCES: annual budget, possible grant funding
PROGRESS MILESTONES: The study is expected to be completed in June, 2021 or 2022	

3-Johnstown: Install Emergency Generator	
PRIORITY: High	HAZARDS ADDRESSED: Severe Storms
LOCATION: Johnstown	GOALS ADDRESSED: 1, 2
RECOMMENDATION DATE: 2010	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 2021	LIFELINE: Energy SUBCOMPONENT: Utilities
ISSUE: Johnstown raw water source is located in Berthoud Colorado. The building was constructed from brick and block with an underground pump station. the building lacks a sufficient emergency generator to supply electrical power to be able to pump raw water to our water treatment plant to produce potable water during power outages/floods	
RECOMMENDATION: Provide water for treatment continuity of operations.	
ACTION: Install emergency generator	
LEAD AGENCY: Johnstown	EXPECTED COST: $375,000
SUPPORT AGENCIES:	POTENTIAL FUNDING SOURCES: Annual budgets
PROGRESS MILESTONES:	

4-Johnstown: Community Preparedness Education	
PRIORITY: Medium	HAZARDS ADDRESSED: Drought, Earthquake, Land Subsidence, Extreme Temperatures, Flood, Severe Storm, Wind & Tornado, Fire, Public Health, Hazmat
LOCATION: Johnstown	GOALS ADDRESSED: 1, 3
RECOMMENDATION DATE: 06.2019	OBJECTIVES ADDRESSED: A

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TARGET COMPLETION DATE: 10.06.2022	LIFELINE: All SUBCOMPONENT: All
ISSUE: There are many emergency management issues that need to be reinforced with public education so that citizens know what risks they face, what protective actions they can take, and what government programs are in place to assist them.	
RECOMMENDATION: The potential for saving just one life, and providing time for individuals and businesses to take effective protective actions, outweighs the potential cost of the public education program. Public Education may be the most effective and least-expensive way to reduce disaster losses by changing human behavior to promote appropriate actions	
ACTION: Establish an ongoing or annual Public Education campaign regarding Hazards and Emergency Management	
LEAD AGENCY: Johnstown	EXPECTED COST: $4,500 for printing and distribution costs
SUPPORT AGENCIES: County Emergency Management, First Responder Agencies, FEMA	POTENTIAL FUNDING SOURCES Local budgets
PROGRESS MILESTONES: Since 2009, Weld County OEM and many participating jurisdictions have continued to make public preparedness outreach and education a priority. The Town of Johnstown will continue to work with Weld County OEM on community preparedness education and hazard identification.	

5-Johnstown: Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning	
PRIORITY: High	HAZARDS ADDRESSED: All Hazards
LOCATION: Johnstown	GOALS ADDRESSED: 1-4
RECOMMENDATION DATE: 07.31.2021	OBJECTIVES ADDRESSED: A, B, C, D, E
TARGET COMPLETION DATE: 12.31.2021	LIFELINE: Public Safety SUBCOMPONENT: All
ISSUE: Due to the potential impact of severe storms, long term power outages, tornados, proximity of hazmat routes and the lack of sheltering capabilities in the community; the impact by natural hazards and cascading events would require Johnstown to acquire outside assistance to shelter local residents.	
RECOMMENDATION: Conduct a Community Impact study to identify vulnerable areas and neighborhoods that be greatly impacted by identified high ranking natural hazards or the cascading effects of natural hazards. Identify shelter locations, that include generators, capability to sustain winds up to 200 mph, cots, blankets and maintain supplies for emergency provisions. Provide Train the Trainer course to include preparation for all hazards that could impact the community. Update Emergency planning to include early warning procedures and sheltering/shelter-in-place protocols. Harden infrastructure systems to prevent long term disruption of services and supplies. Identify and obtain grant funding for all components of above projects.	
ACTION: identifying shelters and designating them as critical facilities	

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- providing backup power through fixed generators - mitigating the shelters against hazards (wind, flood, fire, etc.) - building safe rooms or shelters for identified vulnerable areas that need them	
LEAD AGENCY: Johnstown	EXPECTED COST: Staff Time
SUPPORT AGENCIES: Weld OEM	POTENTIAL FUNDING SOURCES: TBD
PROGRESS MILESTONES:	

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Keenesburg (4 Projects)

1-Keenesburg: Floodplain Training	
PRIORITY: Low	HAZARDS ADDRESSED: Flood
LOCATION: Town of Keenesburg	GOALS ADDRESSED: 1-4
RECOMMENDATION DATE: Annually	OBJECTIVES ADDRESSED: A, B, D, E
TARGET COMPLETION DATE: Ongoing with annual review	LIFELINE: Safety & Security, Water SUBCOMPONENTS: Warning Systems, Outreach, Waterways
ISSUE: Staff is small with many varied responsibilities and no experience with reading FIRM's	
RECOMMENDATION: Staff training of flood plain rules and regulation in general, as well as direction and instruction in reading maps and determining elevation requirements. Careful review of any annexations in conjunction with the FIRM's for determination of the any existing flood plain zone.	
ACTION: Careful review of building permit applications, and location of project to determine if within a possible flood plain, as the Town of Keenesburg has not been mapped, importance placed on annexations and determining if any annexations lie within a flood zone. The Town of Keenesburg is not participating in the CRS program, however we are member of the NFIP. The Town of Keenesburg has adopted the model ordinance in October of 2013 as required by the State of Colorado. The Town of Keenesburg will enforce flood plain regulation in accordance with FEMA's requirements for any annexed property that lies within a mapped flood zone. Have a different staff member attend flood plain training on an annual basis	
LEAD AGENCY: Town of Keenesburg	EXPECTED COST: Staff Time
SUPPORT AGENCIES: Colorado Water Conservation Board	POTENTIAL FUNDING SOURCES: N/A
PROGRESS MILESTONES: Assistant Town Manager attended a Floodplain Management training course on September 9, 2015. Ongoing project. 2020-2025	

2-Keenesburg: Notify Traveling Public about Shelter Locations	
PRIORITY: High	HAZARDS ADDRESSED: Severe Weather
LOCATION: Community-wide	GOALS ADDRESSED: 1, 4
RECOMMENDATION DATE: Annually	OBJECTIVES ADDRESSED: A, D
TARGET COMPLETION DATE: Annually	LIFELINES: Safety & Security, Shelter SUBCOMPONENTS: Shelters, Outreach
ISSUE: Traveling public not aware of help available if stranded due to severe weather and or the closure of the I-76	
RECOMMENDATION: Place a notice at entry to town (existing kiosk) providing contact information	

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ACTION: Create signage to be located at kiosk, motel, and gas station all located on Market Street just off of I-76 containing contact information for anyone seeking shelter due to severe weather and or closure of I-76.	
LEAD AGENCY: Town of Keenesburg	EXPECTED COST: Staff Time
SUPPORT AGENCIES: Southeast Weld Fire Protection District	POTENTIAL FUNDING SOURCES: N/A
PROGRESS MILESTONES: Complete once signage is in place. Update: This was not completed and will continue to address	

3-Keenesburg: Tornado Warning System Education for Residents	
PRIORITY: Medium	HAZARDS ADDRESSED: Tornado
LOCATION: Town of Keenesburg	GOALS ADDRESSED: 1, 2, and 3
RECOMMENDATION DATE: Annually	OBJECTIVES ADDRESSED: A, B, and E
TARGET COMPLETION DATE: Ongoing	LIFELINES: Safety & Security SUBCOMPONENT: Early Warning Systems, Outreach
ISSUE: As new residents move into town many do not know what to do when the siren sounds.	
RECOMMENDATION: Outreach and education of the public to identify the action that should be taken when the siren sounds	
ACTION: We will post educational information about what to do in the event of a tornado and specifically what it means when the siren sounds on the town's facebook page, and website, as well as place different articles in the local newspaper every month during tornado season	
LEAD AGENCY: Town of Keenesburg	EXPECTED COST: Staff time
SUPPORT AGENCIES: N/A	POTENTIAL FUNDING SOURCES: N/A
PROGRESS MILESTONES: Education outreach consists of an article in the newspaper, on our website, as well as on the town's Facebook page. Project is ongoing	

4-Keenesburg: Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning	
PRIORITY: High	HAZARDS ADDRESSED: All hazards
LOCATION: Town of Keenesburg	GOALS ADDRESSED: 1-4
RECOMMENDATION DATE: 6/17/2021	OBJECTIVES ADDRESSED: A, B, C, D, E
TARGET COMPLETION DATE: 12/31/2021	Lifelines: Public Safety

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ISSUE: Due to the potential impact of severe storms, long term power outages, tornados, proximity of hazmat routes and the lack of sheltering capabilities in the community; the impact by natural hazards and cascading events would require Keenesburg to acquire outside assistance to shelter local residents.	
RECOMMENDATION: Conduct a Community Impact study to identify vulnerable areas and neighborhoods that be greatly impacted by identified high ranking natural hazards or the cascading effects of natural hazards. Identify shelter locations, that include generators, capability to sustain winds up to 200 mph, cots, blankets and maintain supplies for emergency provisions. Provide Train the Trainer course to include preparation for all hazards that could impact the community. Update Emergency planning to include early warning procedures and sheltering/shelter-in-place protocols. Harden infrastructure systems to prevent long term disruption of services and supplies. Identify and obtain grant funding for all components of above projects.	
ACTION: identifying shelters and designating them as critical facilities - providing backup power through fixed generators - mitigating the shelters against hazards (wind, flood, fire, etc.) - building safe rooms or shelters for identified vulnerable areas that need them	
LEAD AGENCY: Town of Keenesburg	EXPECTED COST: Staff Time
SUPPORT AGENCIES: Weld OEM	POTENTIAL FUNDING SOURCES: TBD
PROGRESS MILESTONES:	

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LaSalle (3 Projects)

1-LaSalle: Community Preparedness Education	
PRIORITY: High	HAZARDS ADDRESSED: Drought, Earthquake, Land Subsidence, Extreme Temperatures, Flood, Severe Storm, Wind & Tornado, Fire, Public Health, Hazmat
LOCATION: Town of LaSalle	GOALS ADDRESSED: 1,3
RECOMMENDATION DATE: 10.06.20	OBJECTIVES ADDRESSED: A, B
TARGET COMPLETION DATE: 2020-2025	LIFELINES: Safety & Security SUBCOMPONENTS: Community Safety, Education Programs
ISSUE: There are many emergency management issues that need to be reinforced with public education so that citizens know what risks they face, what protective actions they can take, and what government programs are in place to assist them.	
RECOMMENDATION: The potential for saving just one life, and providing time for individuals and businesses to take effective protective actions, outweighs the potential cost of the public education program. Public Education may be the most effective and least-expensive way to reduce disaster losses by changing human behavior to promote appropriate actions	
ACTION: Establish an ongoing or annual Public Education campaign regarding Hazards and Emergency Management	
LEAD AGENCY: Town of LaSalle	EXPECTED COST: $2,500 for printing and distribution costs
SUPPORT AGENCIES: County Emergency Management, First Responder Agencies, State DHSEM, FEMA	POTENTIAL FUNDING SOURCES HMPG, SHSG, Local budgets and private partner cost share.
PROGRESS MILESTONES: Since 2009, Weld County OEM and many participating jurisdictions have continued to make public preparedness outreach and education a priority. The Town of LaSalle will continue to work with Weld County OEM on community preparedness education and hazard identification.	

2-LaSalle: Develop Upkeep Schedule for Emergency Power Systems	
PRIORITY: Medium	HAZARDS ADDRESSED: Earthquake, Land Subsidence, Extreme Temperatures, Flood, Severe Storm, Wind & Tornado
LOCATION: Project location LaSalle	GOALS ADDRESSED: 1, 2
RECOMMENDATION DATE: 10.06.15	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: Ongoing	LIFELINES: Safety & Security, Energy SUBCOMPONENTS: Government Buildings, Power
ISSUE: In Colorado, there are a number severe weather events that could cause a power outage to the Town Offices and facilities. In case of an emergency, there are several town employees who need	

to stay connected to town networks and communication systems. Town offices are also used for command posts, damage assessment data collection points and information points for citizens	
RECOMMENDATION: The Town has a generator for backup power, continued maintenance to keep the generator operation will allow the town to stay operational during emergencies.	
ACTION: Town staff will test and maintain the operational condition of the generator.	
LEAD AGENCY: LaSalle Town Staff	EXPECTED COST: Annual budget will meet this need.
SUPPORT AGENCIES:	POTENTIAL FUNDING SOURCES annual budget
PROGRESS MILESTONES: funding will be included in annual budgets.	

3-LaSalle: Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning	
PRIORITY: High	HAZARDS ADDRESSED: All hazards
LOCATION: Town of LaSalle	GOALS ADDRESSED: 1-4
RECOMMENDATION DATE: 6/17/2021	OBJECTIVES ADDRESSED: A, B, C, D, E
TARGET COMPLETION DATE: 12/31/2021	Lifelines: Public Safety
ISSUE: Due to the potential impact of severe storms, long term power outages, tornados, proximity of hazmat routes and the lack of sheltering capabilities in the community; the impact by natural hazards and cascading events would require LaSalle to acquire outside assistance to shelter local residents.	
RECOMMENDATION: Conduct a Community Impact study to identify vulnerable areas and neighborhoods that be greatly impacted by identified high ranking natural hazards or the cascading effects of natural hazards. Identify shelter locations, that include generators, capability to sustain winds up to 200 mph, cots, blankets and maintain supplies for emergency provisions. Provide Train the Trainer course to include preparation for all hazards that could impact the community. Update Emergency planning to include early warning procedures and sheltering/shelter-in-place protocols. Harden infrastructure systems to prevent long term disruption of services and supplies. Identify and obtain grant funding for all components of above projects.	
ACTION: identifying shelters and designating them as critical facilities - providing backup power through fixed generators - mitigating the shelters against hazards (wind, flood, fire, etc.) - building safe rooms or shelters for identified vulnerable areas that need them	
LEAD AGENCY: Town of LaSalle	EXPECTED COST: Staff Time
SUPPORT AGENCIES: Weld OEM	POTENTIAL FUNDING SOURCES: TBD
PROGRESS MILESTONES:	

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Mead (5 Projects)

1-Mead: Policy Group Training for Elected Officials	
PRIORITY: High	HAZARDS ADDRESSED: All
LOCATION: Mead or Weld County	GOALS ADDRESSED: 1, 2, 4
RECOMMENDATION DATE: 2020	OBJECTIVES ADDRESSE: B, C
TARGET COMPLETION DATE: 2021, 2022,2024	LIFELINES: Safety & Security SUBCOMPONENTS: Local Government Services, Community Safety
ISSUE: While many of the tactical and strategic decisions will be handled by partner agencies, such as Mountain View Fire Protection District, Weld County OEM, and Weld County Sheriff's Office, the Town of Mead Board of Trustees must be prepared to make policy decisions and must undergo training to understand what a Policy Group is and what its roles are and are not in an emergency.	
RECOMMENDATION: Offer Policy Group training to the Town of Mead Board of Trustees.	
ACTION:	
LEAD AGENCY: Town of Mead	EXPECTED COST: Food, travel expenses, < $350
SUPPORT AGENCIES: Weld County OEM, Colorado Municipal League	POTENTIAL FUNDING SOURCES: Existing training budget
PROGRESS MILESTONES:	

2-Mead: Update Policies and Plans with Mitigation Principles - North Creek Flood Plain Analysis	
PRIORITY: High	HAZARDS ADDRESSED: Flooding
LOCATION: Mead	GOALS ADDRESSED: 1, 2, 4
RECOMMENDATION DATE: 2021	OBJECTIVES ADDRESSED: C, E
TARGET COMPLETION DATE: 12/31/2021	LIFELINES: Safety and Security, Transportation, SUBCOMPONENTS: Waterways, Roads, Residential Housing
ISSUE: The North Creek Flood Plain Analysis is needed to accurately identify the flood plain and its impact on the community. The anticipated cost is $85,000. Completion in 2021.	
RECOMMENDATION: Perform floodplain mapping study	
ACTION: Mapping is needed to accurately identify the flood plain and its impact on the community.	
LEAD AGENCY: Town of Mead	EXPECTED COST: North Creek Flood Plain Analysis $85,000

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SUPPORT AGENCIES: Weld OEM	POTENTIAL FUNDING SOURCES: Town of Mead General Fund and Drainage Fund.
PROGRESS MILESTONES:	

3-Mead: Update Policies and Plans with Mitigation Principles - Emergency Operations Plan	
PRIORITY: High	HAZARDS ADDRESSED: All
LOCATION: Mead	GOALS ADDRESSED: 1, 2, 4
RECOMMENDATION DATE: 2021	OBJECTIVES ADDRESSED: C, E
TARGET COMPLETION DATE: 2021	LIFELINES: All SUBCOMPONENTS: All
ISSUE: Emergency Operations Plan – Mead's Emergency Ops Plan is out of date. It is currently being updated by staff. Support may be sought from Weld County OEM, anticipated completion in 2021.	
RECOMMENDATION: Incorporate mitigation principles into policy documents and plans.	
ACTION: Emergency Operations Plan for planning and reference.	
LEAD AGENCY: Town of Mead	EXPECTED COST:
SUPPORT AGENCIES: Weld OEM	POTENTIAL FUNDING SOURCES: Town of Mead General Fund, Drainage Fund, and Sewer Enterprise Fund. In addition, grant funding may be available through Department of Local Affairs Grant and/or SIPA
PROGRESS MILESTONES:	

4-Mead: Update Facilities- Public Works Facility - Design & Construction	
PRIORITY: High	HAZARDS ADDRESSED: All
LOCATION: Mead	GOALS ADDRESSED: 2
RECOMMENDATION DATE: 2021	OBJECTIVES ADDRESSED: C, E
TARGET COMPLETION DATE: 2021	LIFELINES: Safety and Security, SUBCOMPONENTS: Government Services, Law Enforcement
ISSUE: A Public Works facility is under design with anticipated construction in 2021. This will provide more space for both our PW staff and PD staff as they currently share a temporary facility. The primary PW impact will be to consolidate town resources to one location which allows better access	

and improved responsiveness. This will also allow Mead PD dedicated space in the temporary modular which provides more security, confidentiality and additional facility space.	
RECOMMENDATION: Build a facility that allows the affective and efficient provisions of government services.	
ACTION: Complete design and construction of facility to consolidate resources.	
LEAD AGENCY: Town of Mead	EXPECTED COST: $5,000,000
SUPPORT AGENCIES: Weld OEM	POTENTIAL FUNDING SOURCES: DOLA
PROGRESS MILESTONES: Complete design in 2020. Begin construction 2021.	

5-Mead: Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning	
PRIORITY: High	HAZARDS ADDRESSED: All Hazards
LOCATION: Mead	GOALS ADDRESSED: 1-4
RECOMMENDATION DATE: 07.31.2021	OBJECTIVES ADDRESSED: A, B, C, D, E
TARGET COMPLETION DATE: 12.31.2021	LIFELINE: Public Safety SUBCOMPONENT: All
ISSUE: Due to the potential impact of severe storms, long term power outages, tornados, proximity of hazmat routes and the lack of sheltering capabilities in the community; the impact by natural hazards and cascading events would require Mead to acquire outside assistance to shelter local residents.	
RECOMMENDATION: Conduct a Community Impact study to identify vulnerable areas and neighborhoods that be greatly impacted by identified high ranking natural hazards or the cascading effects of natural hazards. Identify shelter locations, that include generators, capability to sustain winds up to 200 mph, cots, blankets and maintain supplies for emergency provisions. Provide Train the Trainer course to include preparation for all hazards that could impact the community. Update Emergency planning to include early warning procedures and sheltering/shelter-in-place protocols. Harden infrastructure systems to prevent long term disruption of services and supplies. Identify and obtain grant funding for all components of above projects.	
ACTION: identifying shelters and designating them as critical facilities - providing backup power through fixed generators - mitigating the shelters against hazards (wind, flood, fire, etc.) - building safe rooms or shelters for identified vulnerable areas that need them	
LEAD AGENCY: Town of Mead	EXPECTED COST: Staff Time
SUPPORT AGENCIES: Weld OEM	POTENTIAL FUNDING SOURCES: TBD

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PROGRESS MILESTONES:

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Milliken (4 Projects)

1-Milliken: Convert acquired land and property in the floodplain to Open Space	
PRIORITY: High (#1)	HAZARDS ADDRESSED: Flood Hazard and Other Hazards
LOCATION: Land previously Martin Home Mobile Park-current Open Space Projects	GOALS ADDRESSED: 2
RECOMMENDATION DATE: 2021	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 12/31/2023	LIFELINES: Health & Medical SUBCOMPONENTS: Public Health
ISSUE: Identify Open Space features for the previously acquired mobile home space. We are working with FEMA and our Town GOMill (Great Outdoors Milliken) Committee on options for that area with keeping the intent of the acquisition.	
RECOMMENDATION: Committee to research ideas for open space area	
ACTION:	
LEAD AGENCY: Town of Milliken Administration Dept.	EXPECTED COST: $2,500,000
SUPPORT AGENCIES: FEMA HMGP, CDHSEM	POTENTIAL FUNDING SOURCES: FEMA HMGP 75%, CDHSEM 12.5%
PROGRESS MILESTONES;	

2-Milliken: Procurement and Installation of Tornado Sirens	
PRIORITY: High (#2)	HAZARDS ADDRESSED: Tornado/Wind Hazard
LOCATION: Town of Milliken	GOALS ADDRESSED: 1
RECOMMENDATION DATE: 2021	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 12/31/2022	LIFELINES: Safety & Security; Food, Water & Shelter; Health & Medical SUBCOMPONENTS: Community Safety, Shelter, Public Health
ISSUE: Warn public regarding pending tornadoes and high wind events	
RECOMMENDATION: The Town has installed a Tornado Siren at the back for the Police Station. However, looking into other sites around Town would be beneficial as well.	
ACTION: Install additional tornado sirens throughout Milliken	
LEAD AGENCY: Town of Milliken Police and Fire Department	EXPECTED COST: $60,000 -$100,000

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SUPPORT AGENCIES: FEMA, Colorado Division of Homeland Security and Emergency Management	POTENTIAL FUNDING SOURCES: FEMA HMGP 75%, CDHSEM HMGP 12.5%.
PROGRESS MILESTONES:	

3-Milliken: Storm Water Improvements Throughout Milliken	
PRIORITY: Medium (#3)	HAZARDS ADDRESSED: Flood Hazard
LOCATION: Town of Milliken	GOALS ADDRESSED: 2
RECOMMENDATION DATE: 9/1/2021	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 12/29/2021	LIFELINES: Safety and Security SUBCOMPONENTS: Community Safety
ISSUE: Identify storm drainage problem areas throughout the Town of Milliken	
RECOMMENDATION: Cherry Street Stormwater and Road Rebuild project. We are currently budgeting for the construction phase hopefully to start in early 2021 after the design is complete. Est completion for this project is Fall of 2021.	
ACTION: Construct storm drainage improvements throughout Milliken	
LEAD AGENCY: Town of Milliken Public Works	EXPECTED COST: $20,000,000
SUPPORT AGENCIES: FEMA, Colorado Division of Homeland Security and Emergency Management, Colorado Water Board	POTENTIAL FUNDING SOURCES: FEMA HMGP, CDHSEM HMGP 12.5%.

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PROGRESS MILESTONES:	

4-Milliken: Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning	
PRIORITY: High	HAZARDS ADDRESSED: All Hazards
LOCATION: Milliken	GOALS ADDRESSED: 1-4
RECOMMENDATION DATE: 07.31.2021	OBJECTIVES ADDRESSED: A, B, C, D, E
TARGET COMPLETION DATE: 12.31.2021	LIFELINE: Public Safety SUBCOMPONENT: All
ISSUE: Due to the potential impact of severe storms, long term power outages, tornados, proximity of hazmat routes and the lack of sheltering capabilities in the community; the impact by natural hazards and cascading events would require Milliken to acquire outside assistance to shelter local residents.	
RECOMMENDATION: Conduct a Community Impact study to identify vulnerable areas and neighborhoods that be greatly impacted by identified high ranking natural hazards or the cascading effects of natural hazards. Identify shelter locations, that include generators, capability to sustain winds up to 200 mph, cots, blankets and maintain supplies for emergency provisions. Provide Train the Trainer course to include preparation for all hazards that could impact the community. Update Emergency planning to include early warning procedures and sheltering/shelter-in-place protocols. Harden infrastructure systems to prevent long term disruption of services and supplies. Identify and obtain grant funding for all components of above projects.	
ACTION: identifying shelters and designating them as critical facilities - providing backup power through fixed generators - mitigating the shelters against hazards (wind, flood, fire, etc.) - building safe rooms or shelters for identified vulnerable areas that need them	
LEAD AGENCY: Town of Milliken	EXPECTED COST: Staff Time
SUPPORT AGENCIES: Weld OEM	POTENTIAL FUNDING SOURCES: TBD

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PROGRESS MILESTONES:

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Nunn (3 Projects)

1-Nunn: Master Drainage Plan	
PRIORITY: Moderate	HAZARDS ADDRESSED: Flooding
LOCATION: Town of Nunn city limits	GOALS ADDRESSED: 1, 2
RECOMMENDATION DATE: 2022	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 2022	LIFELINE: Transportation, Water SUBCOMPONENT: Town streets, waterways
ISSUE: Improper and insufficient stormwater drainage throughout town	
RECOMMENDATION: Drainage plan needed. Reduce the number of closed or damaged roads in town due to flooding or water damage.	
ACTION: Prevent flooding in community streets, provide better stormwater runoff. Review existing flood study information and Map from FEMA, utilize existing contours of topography, measure existing culverts and drainage structures at street crossings, identify 100-year stormwater runoff that enters town limits, identify current drainage improvements for the future, outline drainage design criteria to be utilized as development occurs in the future.	
LEAD AGENCY: Town of Nunn	EXPECTED COST: $28,000, including time and labor
SUPPORT AGENCIES: Weld County	POTENTIAL FUNDING SOURCES: BRIC, General Funds, looking for others
PROGRESS MILESTONES: Nunn has the estimate from KBN Engineers: Review of existing information, Field reconnaissance of existing culverts, conceptual stormwater runoff flows, identify drainage areas of concern, prepare a Town Drainage design exhibit, prepare recommendation for major improvements, prepare an outline for drainage design criteria: 3 months to complete.	

2- Nunn: Tornado Shelter to be ADA Compliant	
PRIORITY: High	HAZARDS ADDRESSED: Tornados
LOCATION: Town Hall	GOALS ADDRESSED: 1
RECOMMENDATION DATE: 2021	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 2021	LIFELINE: Safety & Security SUBCOMPONENT: Community Safety, Government Buildings
ISSUE: Tornado shelter is in the basement and is not ADA Compliant. This will help to reduce the risk of injury or death of AFN citizens during a tornado	
RECOMMENDATION: Nunn would like to get a chair lift, and include a compost toilet in the event of an active shelter situation.	
ACTION: Install Chairlift for AFN citizens and install compost toilet for emergency shelter	

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LEAD AGENCY: Town of Nunn	EXPECTED COST: $28,000
SUPPORT AGENCIES: Weld County	POTENTIAL FUNDING SOURCES: BRIC, General Funds, looking for others
PROGRESS MILESTONES: Nunn would like to have this completed in 2021. They are currently getting estimate for a chairlift, cost to install, and purchasing and installing a compost toilet. Projected completion date Spring 2021	

3-Nunn: Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning	
PRIORITY: High	HAZARDS ADDRESSED: All Hazards
LOCATION: Nunn	GOALS ADDRESSED: 1-4
RECOMMENDATION DATE: 07.31.2021	OBJECTIVES ADDRESSED: A, B, C, D, E
TARGET COMPLETION DATE: 12.31.2021	LIFELINE: Public Safety SUBCOMPONENT: All
ISSUE: Due to the potential impact of severe storms, long term power outages, tornados, proximity of hazmat routes and the lack of sheltering capabilities in the community; the impact by natural hazards and cascading events would require Nunn to acquire outside assistance to shelter local residents.	
RECOMMENDATION: Conduct a Community Impact study to identify vulnerable areas and neighborhoods that be greatly impacted by identified high ranking natural hazards or the cascading effects of natural hazards. Identify shelter locations, that include generators, capability to sustain winds up to 200 mph, cots, blankets and maintain supplies for emergency provisions. Provide Train the Trainer course to include preparation for all hazards that could impact the community. Update Emergency planning to include early warning procedures and sheltering/shelter-in-place protocols. Harden infrastructure systems to prevent long term disruption of services and supplies. Identify and obtain grant funding for all components of above projects.	
ACTION: identifying shelters and designating them as critical facilities - providing backup power through fixed generators - mitigating the shelters against hazards (wind, flood, fire, etc.) - building safe rooms or shelters for identified vulnerable areas that need them	
LEAD AGENCY: Town of Nunn	EXPECTED COST: Staff Time
SUPPORT AGENCIES: Weld OEM	POTENTIAL FUNDING SOURCES: TBD
PROGRESS MILESTONES:	

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Pierce (4 Projects)

1-Pierce: Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning	
PRIORITY: High	HAZARDS ADDRESSED: All hazards
LOCATION: Town of Pierce	GOALS ADDRESSED: 1-4
RECOMMENDATION DATE: 7/31/2021	OBJECTIVES ADDRESSED: A, B, C, D, E
TARGET COMPLETION DATE: 12/31/2021	Lifelines: Public Safety
ISSUE: Due to the potential impact of severe storms, long term power outages, tornados, proximity of hazmat routes and the lack of sheltering capabilities in the community; the impact by natural hazards and cascading events would require Pierce to acquire outside assistance to shelter local residents.	
RECOMMENDATION: Conduct a Community Impact study to identify vulnerable areas and neighborhoods that be greatly impacted by identified high ranking natural hazards or the cascading effects of natural hazards. Identify shelter locations, that include generators, capability to sustain winds up to 200 mph, cots, blankets and maintain supplies for emergency provisions. Provide Train the Trainer course to include preparation for all hazards that could impact the community. Update Emergency planning to include early warning procedures and sheltering/shelter-in-place protocols. Harden infrastructure systems to prevent long term disruption of services and supplies. Identify and obtain grant funding for all components of above projects.	
ACTION: identifying shelters and designating them as critical facilities - providing backup power through fixed generators - mitigating the shelters against hazards (wind, flood, fire, etc.) - building safe rooms or shelters for identified vulnerable areas that need them	
LEAD AGENCY: Town of Pierce	EXPECTED COST: Staff Time,
SUPPORT AGENCIES: Weld OEM,	POTENTIAL FUNDING SOURCES: TBD
PROGRESS MILESTONES:	

2-Pierce: County Road 90 Improvements	
PRIORITY: Medium	HAZARDS ADDRESSED: Hazmat evacuations/severe storms/ flooding
LOCATION: CR 90/hwy85- CR 29	GOALS ADDRESSED: 1, 2
RECOMMENDATION DATE: 2021-22	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 2022	LIFELINES: Transportation SUBCOMPONENTS: County Roads, State Highways

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ISSUE: Past and potential future flooding in the lower drainage areas and ditches that the roadway crosses, along with the age/deterioration of the roadway poses a threat to using this road as an exit route from the town in an emergency. Hazmat route traffic exacerbates road conditions during storms and flooding. The road is also an evacuation route for the school directly to the south of the intersection. Now that CR 29 is a paved through road between Hwy 14 and CR 100 , CR 90 is becoming an increasingly important exit route for residents from Pierce. Planned Road maintenance- increased truck traffic, degraded road condition	
RECOMMENDATION: Repair the roadway	
ACTION: Maintain and improve condition of Hazmat and Evacuation Route for community	
LEAD AGENCY: Town of Pierce	EXPECTED COST: $1m + awaiting estimate
SUPPORT AGENCIES: FEMA	POTENTIAL FUNDING SOURCES: FEMA, BRIC, Revenues, WC IGA
PROGRESS MILESTONES: Get an estimate for road repair, awaiting property tax revenues that will go towards funding the project. Grant funding submission start project 2021, projected project timeframe 6 months to 1 year.	

3-Pierce: Community Preparedness Education	
PRIORITY: High	HAZARDS ADDRESSED: Drought, Earthquake, Land Subsidence, Extreme Temperatures, Flood, Severe Storm, Wind & Tornado, Fire, Public Health, Hazmat
LOCATION: Town of Pierce	GOALS ADDRESSED: 1,3
RECOMMENDATION DATE: 10.06.2015	OBJECTIVES ADDRESSED: A, B
TARGET COMPLETION DATE: Annually	LIFELINES: All SUBCOMPONENTS: All
ISSUE: There are many emergency managements issues that need to be reinforced with public education so that citizens know what risks they face, what protective actions they can take, and what government programs are in place to assist them.	
RECOMMENDATION: The potential for saving just one life, and providing time for individuals and businesses to take effective protective actions, outweighs the potential cost of the public education program. Public Education may be the most effective and least-expensive way to reduce disaster losses by changing human behavior to promote appropriate actions	
ACTION: Establish an ongoing or annual Public Education campaign regarding Hazards and Emergency Management	
LEAD AGENCY: Town of Pierce	EXPECTED COST: $2,500 for printing and distribution costs

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SUPPORT AGENCIES: County Emergency Management, First Responder Agencies, State DHSEM, FEMA	POTENTIAL FUNDING SOURCES HMPG, SHSG, Local budgets and private partner cost share.
PROGRESS MILESTONES: Since 2009, Weld County OEM and many participating jurisdictions have continued to make public preparedness outreach and education a priority. The Town of Pierce will continue to work with Weld County OEM on community preparedness education and hazard identification. Updated: Ongoing project	

4-Pierce Drainage County Road 88 / Hwy 85	
PRIORITY: High	HAZARDS ADDRESSED: Flood, Storm water
LOCATION: Pierce	GOALS ADDRESSED: 1, 2, 3, 4
RECOMMENDATION DATE: 1/1/2016	OBJECTIVES ADDRESSED: D, E
TARGET COMPLETION DATE: 2025	LIFELINE: Transportation SUBCOMPONENT: Roads
ISSUE: The Town of Pierce has a Comprehensive Plan identifying storm drainage issues and goals. The primary goal is to preserve flood plains and natural drainage ways in the Pierce planning area. Drainage at County Road 88 and Highway 85 requires a larger engineered culvert to prevent standing water on the street and nearby properties.	
RECOMMENDATION: The Town of Pierce is working jointly with Weld County to engineer a larger culvert to drain storm water under County Road 88 and allow it to flow down the natural drainage area. Agreements with the State of Colorado, City of Thornton and Fort Collins Lateral may be necessary to help direct the drainage to the proper natural areas.	
ACTION: This is a high priority currently being planned in conjunction with Weld County to engineer a culvert large enough to drain storm water and direct it to a ditch system approximately ¾ mile away.	
LEAD AGENCY: Town of Pierce	EXPECTED COST: Storm drainage improvements in the vicinity of US85 and County Road 88. Installation, agreements, and engineered design directing the flow to a ditch system approximately ¾ mile. $500,000
SUPPORT AGENCIES: Weld County	POTENTIAL FUNDING SOURCES: Pierce charges drainage fees.

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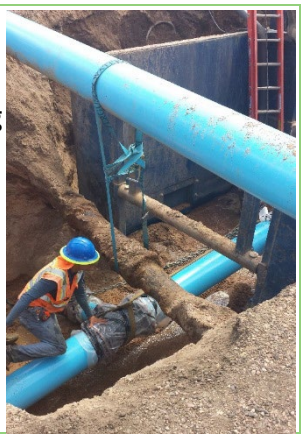
PROGRESS MILESTONES

Update: There is no current progress on this project. Project will be ongoing Through 2020-2025, with collaboration of county and state and City of Thornton for adjoining property.



Mitigation Action Guides: 2021-26 Weld County

Platteville (6 Projects)

1-Platteville: Comprehensive Plan Update and Training	
PRIORITY: High	HAZARDS ADDRESSED: Severe Storms (Tornadoes, Blizzards, Floods & other severe weather events)
LOCATION: Town of Platteville	GOALS ADDRESSED: 1, 2, 3, 4
RECOMMENDATION DATE: March 2021	OBJECTIVES ADDRESSED: C, E, D
TARGET COMPLETION DATE: May 2021	LIFELINES: Safety & Security SUBCOMPONENT: Government Services
ISSUE: Update Comprehensive Plan to include an Annex for Continuity of Government (COG) Plan	
RECOMMENDATION: Conduct annual elected officials and staff training on the COG Plan.	
ACTION: Update and review the Comprehensive Plan each year with Elected Officials and Town staff.	
LEAD AGENCY: Town of Platteville	EXPECTED COST: TBD
SUPPORT AGENCIES: Legislative, Administration, Police & Public Works	POTENTIAL FUNDING SOURCES: General Fund
PROGRESS MILESTONES: The Continuity of Government Plan was adopted in 2019 and will be integrated into the Comprehensive Pan and submitted as an Annex by elected officials and staff. Scenario training will also be implemented in 2021.	

2-Platteville: Community Education of updated Early Warning System, Training and Utilization	
PRIORITY: Medium	HAZARDS ADDRESSED: Severe Storms (Tornadoes, Blizzards, Floods & other severe weather events)
LOCATION: Town of Platteville	GOALS ADDRESSED: 1,2,3,4
RECOMMENDATION DATE: Ongoing	OBJECTIVES ADDRESSED: A,B, E
TARGET COMPLETION DATE: Ongoing	LIFELINES: Safety & Security, Communications SUBCOMPONENTS: Government Services, Early Warning System
ISSUE: Emergency Communication Systems (Everbridge) was purchased, but underutilized	
RECOMMENDATION: Continue the utilization of the Town's Emergency Communication System to provide emergency notifications and warnings to the community during severe storms and similar events.	
ACTION: Utilize the Town's Emergency Notification System during severe weather events as needed. Promote the system in the community to increase use of the system.	
LEAD AGENCY: Town of Platteville	EXPECTED COST: $6,000 Annual Renewal

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SUPPORT AGENCIES: Police & Public Works	POTENTIAL FUNDING SOURCES: General Fund
PROGRESS MILESTONES: The Town's Emergency Communication System (Everbridge) was purchased and implemented in 2014 and has been used regularly since that time to provide regular (weekly) community information and emergency notifications as needed. Since implementation there are approximately 600 users who receive notifications.	

3-Platteville: Tornado Sirens - Maintenance and Testing	
PRIORITY: High	HAZARDS ADDRESSED: Severe Storms & Tornadoes
LOCATION: Town of Platteville	GOALS ADDRESSED: 1,2,4
RECOMMENDATION DATE: April 2021	OBJECTIVES ADDRESSED: B,C,E
TARGET COMPLETION DATE: Sept 2021	LIFELINES: Communications, Safety & Security SUBCOMPONENT: Early Warning System, Community Safety
ISSUE: Annual Testing of Tornado Sirens in Platteville & Gilcrest	
RECOMMENDATION: Continuation of annual emergency warning / tornado siren testing.	
ACTION: Conduct monthly Tornado Siren testing the first Saturday of each month from April – September at 10:00am each date in coordination with the Platteville/Gilcrest Fire Protection District (PGFPD) and Platteville Police Department.	
LEAD AGENCY: Town of Platteville	EXPECTED COST: TBD
SUPPORT AGENCIES: PGFPD	POTENTIAL FUNDING SOURCES: General Fund
PROGRESS MILESTONES: Five Tornado Sirens (3 Platteville, 1 Gilcrest, 1 US85 & SH60) were initially acquired and installed in 2009. One additional Tornado Siren acquired and installed in 2019 to provide better emergency warning coverage to the north portion of Platteville. Backup batteries were also replaced in 2018 for all Tornado Sirens.	

4-Platteville: Comprehensive Plan - Update and training	
PRIORITY: High	HAZARDS ADDRESSED: Severe Storms (Tornadoes, Blizzards, Floods & other severe weather events)
LOCATION: Town	GOALS ADDRESSED: 1, 2, 3, 4
RECOMMENDATION DATE: February 2021	OBJECTIVES ADDRESSED: A, B, C, D, E

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TARGET COMPLETION DATE: April 2021	LIFELINE: All SUBCOMPONENT: All
ISSUE: Comprehensive Plan needs updated and continued training and exercise	
RECOMMENDATION: Update the Comprehensive Plan annually and provide bi-annual training each spring and fall to all Town employees. Promote the plan to the community annually.	
ACTION: Update and review the EMP by April of each year with Elected Officials and Town staff.	
LEAD AGENCY: Town of Platteville	EXPECTED COST: TBD
SUPPORT AGENCIES: Administration, Police & Public Works	POTENTIAL FUNDING SOURCES: General Fund
PROGRESS MILESTONES: The Comprehensive Plan was adopted in 2009 and updated again in 2019. Update and review the plan annually each spring and fall with Elected Officials, Town staff and community members.	

5-Platteville: Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning	
PRIORITY: High	HAZARDS ADDRESSED: All Hazards
LOCATION: Platteville	GOALS ADDRESSED: 1-4
RECOMMENDATION DATE: 07.31.2021	OBJECTIVES ADDRESSED: A, B, C, D, E
TARGET COMPLETION DATE: 12.31.2021	LIFELINE: Public Safety SUBCOMPONENT: All
ISSUE: Due to the potential impact of severe storms, long term power outages, tornados, proximity of hazmat routes and the lack of sheltering capabilities in the community; the impact by natural hazards and cascading events would require Platteville to acquire outside assistance to shelter local residents.	
RECOMMENDATION: Conduct a Community Impact study to identify vulnerable areas and neighborhoods that be greatly impacted by identified high ranking natural hazards or the cascading effects of natural hazards. Identify shelter locations, that include generators, capability to sustain winds up to 200 mph, cots, blankets and maintain supplies for emergency provisions. Provide Train the Trainer course to include preparation for all hazards that could impact the community. Update Emergency planning to include early warning procedures and sheltering/shelter-in-place protocols. Harden infrastructure systems to prevent long term disruption of services and supplies. Identify and obtain grant funding for all components of above projects.	
ACTION: identifying shelters and designating them as critical facilities - providing backup power through fixed generators - mitigating the shelters against hazards (wind, flood, fire, etc.) - building safe rooms or shelters for identified vulnerable areas that need them	
LEAD AGENCY: Town of Platteville	EXPECTED COST: Staff Time

Mitigation Action Guides: 2021-26 Weld County

SUPPORT AGENCIES: Weld OEM	POTENTIAL FUNDING SOURCES: TBD
PROGRESS MILESTONES:	

6-Platteville: Master Storm Drainage Plan	
PRIORITY: High	HAZARDS ADDRESSED: All Hazards
LOCATION: Platteville	GOALS ADDRESSED: 1, 2
RECOMMENDATION DATE: 12.01.2019	OBJECTIVES ADDRESSED: C, E
TARGET COMPLETION DATE: 12.01.2021	LIFELINE: Transportation, Public Safety SUBCOMPONENT: Roadways
ISSUE: The Town of Platteville applied and received DOLA funding to assist in completing a Master Storm Drainage Study. The Plan is currently being written by the Town's Engineer and Public Works Director to mitigation current flooding and storm drainage concerns as well as develop long-term mitigation plans for future development and growth in areas identified in the 2010 Comprehensive Plan Update.	
RECOMMENDATION: Task PW Director and Engineers to draft the plan and identify long term mitigation projects for future development and growth.	
ACTION: Complete master storm drainage plan	
LEAD AGENCY: Town Administration	EXPECTED COST: Staff Time
SUPPORT AGENCIES: State Planning, Engineering, Public Works	POTENTIAL FUNDING SOURCES: Capital Improvement Fund, General Fund, State and Federal Funding Sources.
PROGRESS MILESTONES:	

Mitigation Action Guides: 2021-26 Weld County

Severance (3 Projects)

1-Severance: Downtown Drainage and Street Improvements (Phase 2)	
PRIORITY: High	HAZARDS ADDRESSED: Flooding, Drainage
LOCATION: Severance	GOALS ADDRESSED: 1
RECOMMENDATION DATE: 2019	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: December 31, 2021	LIFELINES: Safety & Security, Transportation SUBCOMPONENTS: Town Roads, Community Safety
ISSUE: Localized flooding and drainage issues in the older part of Town.	
RECOMMENDATION: The benefits are to decrease impacts created by localized flooding and drainage in the old part of Town by installing curb, gutter, sidewalk and storm drainage facilities to alleviate the problem	
ACTION: Construct curb, gutter, sidewalk, street and drainage improvements, along with replacing dilapidated water and sewer infrastructure.	
LEAD AGENCY: Town of Severance	EXPECTED COST: $4,000,000
SUPPORT AGENCIES:	POTENTIAL FUNDING SOURCES: General Fund
PROGRESS MILESTONES: Phase 1 Completed in Summer 2016	

2-Severance: Hidden Valley Parkway Crossing	
PRIORITY: High	HAZARDS ADDRESSED: Access, Flooding
LOCATION: Severance	GOALS ADDRESSED: 1, 2
RECOMMENDATION DATE: 2019	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: December 31, 2021	LIFELINES: Safety & Security, Transportation SUBCOMPONENTS: Town Roads, Community Safety
ISSUE: Lack of an access to cross over the Floodplain/Floodplain.	
RECOMMENDATION: This crossing structure will also for better connectivity west and east through Town, provide quicker emergency access from the Middle School to the High School, and provide an elevated crossing during a potential flooding situation.	
ACTION: Construct a box culvert "bridge" structure with curb, gutter, sidewalk, street and drainage improvements that will provide vehicle and pedestrian access across the floodplain.	
LEAD AGENCY: Town of Severance	EXPECTED COST: $1,800,000
SUPPORT AGENCIES:	POTENTIAL FUNDING SOURCES: General Fund/Storm Water Fund/Development Reimbursement

Mitigation Action Guides: 2021-26 Weld County

PROGRESS MILESTONES: Design Completed 2019

3-Severance: Harmony Regional Drainage Project	
PRIORITY: Medium	HAZARDS ADDRESSED: Flooding, Drainage
LOCATION: Severance	GOALS ADDRESSED: 1, 2
RECOMMENDATION DATE: 2020	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: December 31, 2021	LIFELINES: Safety & Security, Transportation SUBCOMPONENTS: Town Roads, Community Safety
ISSUE: Localized flooding and drainage issues along E. Harmony Road between WCR 21 and Timber Ridge Parkway.	
RECOMMENDATION: The benefits are to decrease impacts created by localized flooding and drainage along Harmony by significantly decreasing the over toping of this roadway during a flooding situation and addressing capacity issues downstream in the Storm water system.	
ACTION: Construct an underground storm drainage system and retention pond.	
LEAD AGENCY: Town of Severance	EXPECTED COST: $1,500,000
SUPPORT AGENCIES:	POTENTIAL FUNDING SOURCES: General Fund/Storm Water Fund
PROGRESS MILESTONES: Design Completed 2020	

Mitigation Action Guides: 2021-26 Weld County

Windsor (3 Projects)

1-Windsor: Eastman Park Riverwalk Project	
PRIORITY: High	HAZARDS ADDRESSED: Flooding
LOCATION: Eastman Park Riverwalk/7th St Windsor	GOALS ADDRESSED: 1, 2
RECOMMENDATION DATE: 2021-22	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 2023	LIFELINE: Water & Transportation SUBCOMPONENT: Rivers & City Streets
ISSUE: This project will improve the river channel, remove banks and increase wetlands. Overall it should improve flow of river channel and prevent flooding of city streets in the area along and adjacent to 7th St	
RECOMMENDATION:	
ACTION: Remove banks, improve river channel, increase wetlands.	
LEAD AGENCY: Town of Windsor	EXPECTED COST: $1.5 million
SUPPORT AGENCIES: NISP	POTENTIAL FUNDING SOURCES:
PROGRESS MILESTONES:	

2-Windsor: Acquire Emergency Power System Transfer Switches - Public Safety Complex	
PRIORITY: Medium	HAZARDS ADDRESSED: All Hazards
LOCATION: Windsor	GOALS ADDRESSED: 1
RECOMMENDATION DATE:	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 2022	LIFELINE: Public Safety, Energy SUBCOMPONENT: Government Buildings, Backup Power
ISSUE: Generator project was completed in 2019, Now Transfer switches need to be completed in the Public Safety Complex	
RECOMMENDATION:	
ACTION:	
LEAD AGENCY: Town of Windsor	EXPECTED COST: $49k
SUPPORT AGENCIES:	POTENTIAL FUNDING SOURCES: general budget, BRIC

Mitigation Action Guides: 2021-26 Weld County

PROGRESS MILESTONES:

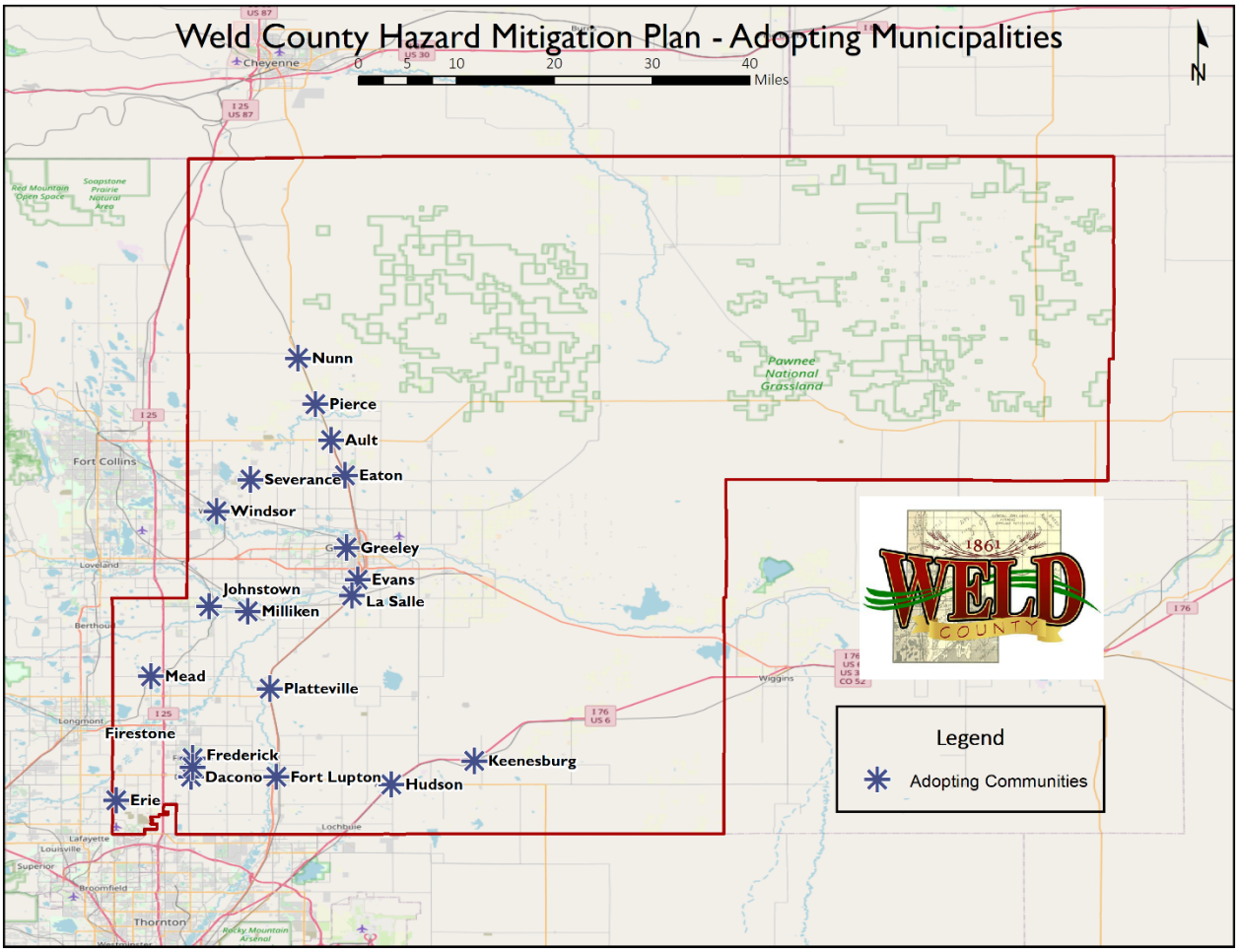
3-Windsor: Flood Mitigation on CR 13	
PRIORITY: Medium	HAZARDS ADDRESSED: Flooding
LOCATION: Windsor	GOALS ADDRESSED: 1
RECOMMENDATION DATE: 2021-22	OBJECTIVES ADDRESSED: E
TARGET COMPLETION DATE: 2022	LIFELINE: Water & Transportation SUBCOMPONENT: Rivers & County Roads
ISSUE: CR 13 is vulnerable to flooding each year, Windsor removed gravel and sediment deposits from the cache La Poudre River near CR 13 Bridge crossing. Budgeted annually for routine maintenance along river.	
RECOMMENDATION: Maintain project yearly	
ACTION:	
LEAD AGENCY: Town of Windsor	EXPECTED COST: $50k/ yearly
SUPPORT AGENCIES:	POTENTIAL FUNDING SOURCES: general budget, BRIC
PROGRESS MILESTONES:	

7 Appendix B: Municipal Annexes

The following municipal annexes provide additional, specific information that is unique to each participating jurisdiction (see Figure 71) included in this Hazard Mitigation Plan. Individual municipal risk assessments are included for each municipality's High Risk hazards. It should be noted that for many hazards, community exposure and risk are the same across the entire County. When possible, community scale risk assessments are presented as data allows.

Additionally, communities are encouraged to leverage available web map viewers to access the most recent hazard data as they reference this Plan. This will ensure municipalities are consulting the best available data which they can view at multiple scales, allowing hazard risk to be reviewed across the entire community, within specific neighborhoods, or for site specific assessments. Additional details and links are provided in the Hazard Data Viewers section of this Plan.

Figure 71. Map of Adopting Communities



7.1 Town of Ault

The Town of Ault Comprehensive Plan shares the vision and guiding principles of the community.

"Ault will be a vibrant, safe, friendly, attractive small town with thriving businesses, well-tended neighborhoods, excellent parks, good schools and opportunities for everyone. It will be a model for social, economic and environmental sustainability."

Guiding Principles:

- Maintain and Enhance Ault's Small-Town Appeal
- Cultivate Sustainable Community
- Grow Responsibly
- Foster an Open, Inclusive Town Culture
- Continue to Enable Citizens to Travel Safely and Efficiently by Car, Bike and Foot

7.1.1 Community Profile

Ault is located on the intersection of Hwy 85 and Hwy 14 and is known as the "Gateway to the Pawnee Grasslands." The Town is an important crossroads for transporting goods and services and is not heavily reliant on its agricultural roots. In recent years, Ault has transformed into a bedroom community for residents working in Cheyenne, Fort Collins and Greeley, all of which are within 45 minutes.

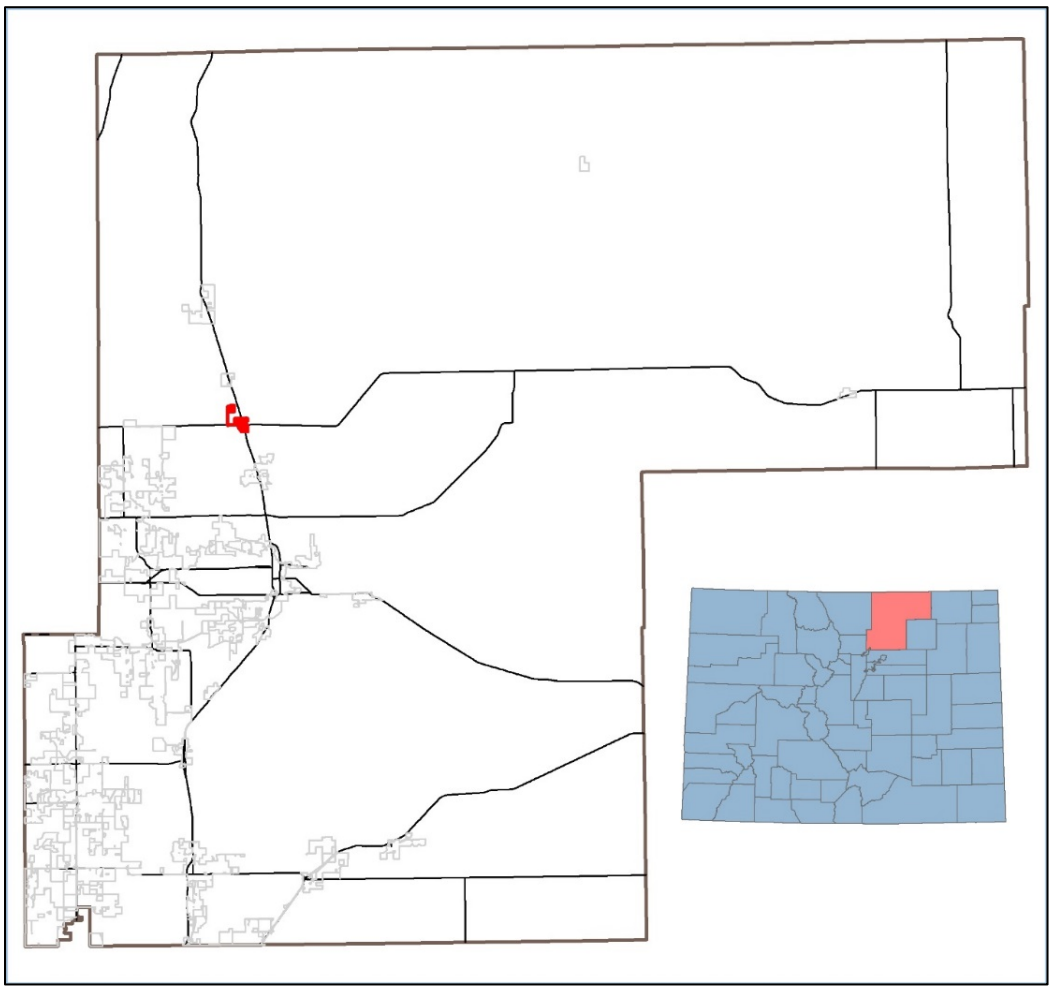


Table 66 shows some development information for the Town of Ault. Current information for specific characteristics of the population is only available from the US Census Bureau for municipalities with populations over 5,000 people.

Table 66. Town of Ault Demographics

Ault	Colorado	
1,843	5,758,736	Population, 2019
21.0%	14.5%	Population, % change April 1, 2010 to July 1, 2019
2.62	2.56	Persons Per Household, 2019

Note: Recent data is unavailable from the US Census Bureau for some categories, based on the size of the municipality. Source: US Census Bureau

Growth in Ault has been substantial over the last decade and when the 2020 Census data is available the characteristics of the population should be reviewed to help with inclusive preparedness, mitigation, and response planning. See Chapter 4 of this Plan for information on Community Inclusion within the County.

7.1.2 Risk and Vulnerability Assessment

Table 67 summarizes the results of the RF ranking exercise performed by the Town of Ault. The results represent the relative risk of different hazards across the municipality from the perspective of local stakeholders and subject matter experts. Note the final RF Ranking values in this table include the weighting factors detailed in the Risk Assessment chapter of this Plan.

Table 67. Risk Factor Results for Ault

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	RF Ranking
Agricultural Hazards	1	1	1	1	4	1.3
Cyber Hazards	1	1	1	4	4	1.6
Drought	2	1	3	1	4	2.0
Earthquake	1	2	1	4	1	1.6
Extreme Temps.	3	1	1	3	3	2.0
Flood	1	1	2	4	4	1.8
Hazmat Release	2	2	4	4	1	2.5
Land Subsidence	1	1	1	4	1	1.3
Prairie Fire	3	1	1	4	2	2.0
Public Health Hazards	3	2	2	1	4	2.4
Severe Storms	3	2	2	2	1	2.2
Tornado & Wind	2	2	1	4	1	1.9

The conclusions drawn from the qualitative assessment are organized into three categories shown in the following table and provide a summary of hazard risk for Ault as a whole - based on High, Moderate, or Low risk designations. This process helped frame ongoing planning discussions around local and regional hazard risks and assisted with the development of the Plan's updated mitigation strategy.

Table 68. Hazard Risk Conclusions for Ault

HIGH RISK (2.5 or higher)	**Hazmat Release**
MODERATE RISK (2.0 – 2.4)	**Drought, Extreme Temperatures, Prairie Fire, Public Health Hazards, Severe Storms**
LOW RISK (1.9 or lower)	**Agricultural Hazards, Cyber Hazards, Earthquake, Flood, Land Subsidence, Tornado & Straight-Line Wind**

Since the 2016 Plan, the Town has decreased the assessed risk from prairie fire and straight-line winds & tornadoes to Moderate Risk (both formerly High). It has also elevated drought and public health hazards from Low Risk to Moderate. Besides the newly added hazards of agricultural hazards and cyber hazards, all other risk rankings remain the same.

The following sections highlight the Town of Ault's High Risk hazards and include any specific content relevant to the Town. They are intended to supplement information included in each hazard profile in the main body of this Plan.

7.1.2.1 Hazmat Release

Vulnerability to hazmat release is increased for the Town of Ault, mainly due to the location of a CDOT hazardous materials route through the community. Additionally, railroads span across Ault, which present their own increased risk for hazmat release. As is true for the entire County, the presence of any businesses that store hazardous materials also increases the risk for these types of events.

Based on data supplied by the Pipeline and Hazardous Materials Safety Administration's (PHMSA) Incident Reports Database there have been three events that have occurred within Ault between 1991 and 2019. One of these events was a rollover accident. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.1.3 Capabilities Assessment

The capability assessment examines the ability of the Town of Ault to implement and manage the comprehensive mitigation strategy laid out in this Plan. The strengths, weaknesses, and resources of the community are identified here as a means for evaluating and maintaining effective and appropriate management of the Town's hazard mitigation program.

Planning and regulatory capabilities are powerful tools for implementing hazard mitigation. The Town currently utilizes some of these capabilities shown in Table 69. It is important for all municipalities to regularly review each of these tools, to identify opportunities for further risk reduction efforts.

Table 69. Planning & Regulatory Capabilities

Mitigation Capability	Utilized?	Comments
Comprehensive, Master, or General Plan	Yes	
Capital Improvement Program or Plan (CIP)	No	
Floodplain Management Plan	No	
Stormwater Program / Plan	No	

Mitigation Capability	Utilized?	Comments
Community Wildfire Protection Plan (CWPP)	No	
Erosion / Sediment Control Program	No	
Economic Development Plan	No	
Other:		
Building Codes (Year)	Yes	2018 IBC
Site Plan Review Requirements	Yes	Planning Committee / Town Board
Other:	Yes	Consultant
Zoning Ordinance (Land Use)	Yes	Planning Committee / Town Board
Subdivision Ordinance	Yes	Planning Committee / Town Board
National Flood Insurance Program (NFIP) Participant	Yes	
Flood Insurance Study / Flood Insurance Rate Map / DFIRM	Yes	
Floodplain Ordinance	Yes	
Elevation Certificates for Floodplain Development	Yes	Consultant
Community Rating System (CRS) Participant	No	
Open Space / Conservation Program	No	
Growth Management Ordinance	No	
Stormwater Ordinance	No	
Other Hazard Ordinance (steep slope, wildfire, snow loads, etc.)	No	
Other:	No	

Available resources including staff, municipal groups, and technology are all vital for a community to be able to implement hazard mitigation. Ault is fortunate to have a number of these capabilities identified in Table 134.

Table 70. Administrative & Technical Capabilities

Mitigation Capability	Utilized?	Comments
Planning Commission	Yes	
Mitigation Planning Committee	No	
Maintenance Programs (tree trimming, clearing drainage, etc.)	No	
Emergency Manager	Yes	Tom Nissen
Building Official	Yes	Consultant
Floodplain Administrator	Yes	Consultant
Community Planner	Yes	Development review team
Transportation Planner	No	
Civil Engineer	Yes	Consultant
GIS Capability	Yes	Limited

Mitigation Capability	Utilized?	Comments
Resiliency Planner	No	
Other:	No	
Warning Systems / Services (flood)	Yes	Sirens
Warning Systems / Services (other / multi hazard)	Yes	Code Red / IPAWS through Country
Grant Writing / Management	Yes	FPD
Other:	No	

The ability of a community to implement a comprehensive mitigation strategy is largely dependent on available funding. These related municipal capabilities are outlined in Table 135 and show that Ault could leverage a number of tools in the future to implement mitigation activities.

Table 71. Financial Capabilities

Mitigation Capability	Utilized?	Comments
Levy for Specific Purposes with Voter Approval	No	
Utilities Fees	Yes	
System Development / Impact Development Fee	Yes	For police, infrastructure, drainage, streets and parks
General Obligation Bonds to Incur Debt	No	
Special Tax Bonds to Incur Debt	No	
Open Space / Conservation Fund	No	
Stormwater Utility Fees	No	
Capital Improvement Project Funding	No	
Community Development Block Grants (CDBG)	Yes	Partner with County
Withheld spending in hazard-prone areas	No	
Other:		

Education and outreach are important capabilities that allow a community to continue the conversation with their public regarding hazard risk and opportunities to mitigate. Table 136 shows that Ault does leverage a public outreach program for wildfire.

Table 72. Education & Outreach Capabilities

Mitigation Capability	Utilized?	Comments
Public Hazard Education / Outreach Program	Yes	Wildfire
Local Citizen Groups That Communicate Hazard Risks	No	
Firewise	No	
NOAA StormReady Program	No	

Mitigation Capability	Utilized?	Comments
Other:	No	

7.1.4 Mitigation Actions

The new mitigation actions identified by the Town during the Plan update are included in Table 73.

Table 73. 2021 Mitigation Action

ID	Organization	Action
2021-17	1-Ault	Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning
2021-18	2-Ault	Hazardous Materials – Community Impact Study

7.2 City of Dacono

The Comprehensive Plan for the City of Dacono, Dacono Forward, was updated in 2017. The expansion upon the original plan from 2005 reflects the economic changes in the community and the renewed perspective on growth and development.

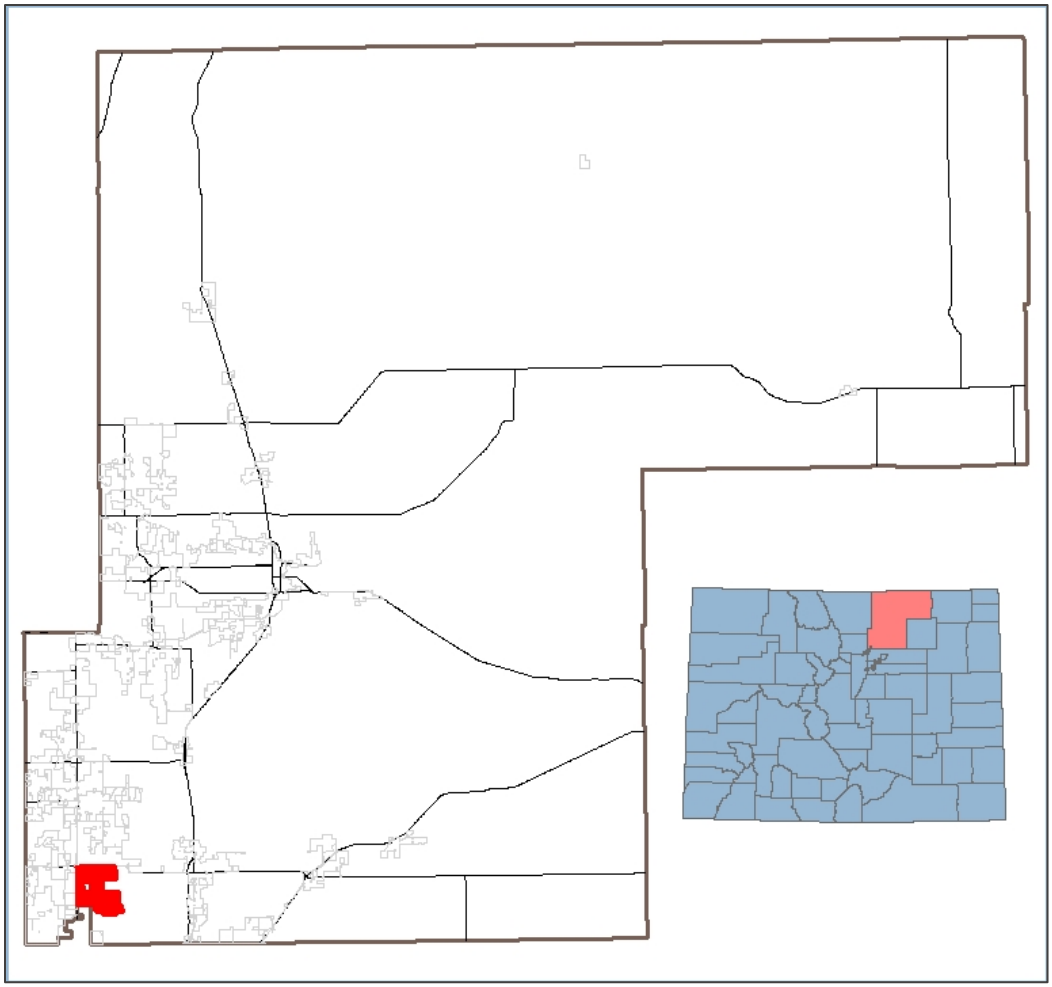
"*The Guiding Principles which informed this Dacono Forward plan are intended to provide direction for future land use and resource investment decisions. To this end, they should be considered in matters related to rezoning, subdivision and site design requests; as well as, the selection of priority initiatives, capital expenditures, and investment incentives. As they relate to this Dacono Forward Plan, they served as the foundation for its Goals (desired outcomes) and Strategic Public Initiatives (recommendations and actions).*"

The Guiding Principles are:

- Grow the City's economy through diversification of job and business opportunities, and balance growth through efficient development patterns.
- New development and redevelopment will meet Dacono's expectations for excellence in design and the creation of places consistent with long-term economic viability.
- Today's neighborhoods remain vital and desirable places that meet the needs of existing residents and also appeal to future residents.
- Housing choices available in Dacono are accessible and affordable to people at all stages of their lives.
- City leaders and decision-makers will focus sufficient attention and investment on distinctive areas throughout the City so that each can achieve the vision described in this plan.

7.2.1 Community Profile

The City of Dacono is located in southwestern Weld County, about 10 miles north of the Denver metropolitan area. Dacono is located east of I-25 and south of Highway 52. The city encompasses nearly 8.2 square miles, with a future growth boundary of 22 square miles.



Dacono is part of the Carbon Valley area which also includes the Towns of Frederick and Firestone. The three municipalities share a Chamber of Commerce and a Park and Recreation District. They are represented in the Carbon Valley Emergency Management Agency, which also includes the Frederick Fire Protection District and Mountain View Fire Rescue. The municipalities work with their specific stakeholders in determining risks and vulnerabilities, however the unique agreement between them is important to planning efforts.

The table below summarizes key demographic and development related characteristics of the City of Dacono.

Table 74. City of Dacono Demographics

Dacono	Colorado	
6,034	5,758,736	Population, 2019
45.2%	14.5%	Population, % change April 1, 2010 to July 1, 2019
10.6%	5.8%	% Population under 5 years, 2019
28.0%	21.9%	% Population under 19 years, 2019
7.6%	14.6%	% Population 65 years and over, 2019

Dacono	Colorado	
69.9%	64.9%	Homeownership Rate, 2019
2.84	2.56	Persons Per Household, 2019
$67,524	$68,811	Median Household Income, 2014- 2018
5.9%	9.3%	Persons below poverty level, %, 2014- 2018
10.5%	7.3%	% Population under 65 years, with a disability 2014-2018
19.9%	17%	Language other than English spoken at home, % age 5+, 2014- 2018

Source: US Census Bureau

The City's current population is estimated at 6,034 people, according to the US Census Bureau. Population forecasts are unavailable for municipalities in Colorado, however the population growth rate for Dacono was 5.9% from 2015 to 2018. This is almost double that of Weld County and around four times that of the state for the same period.

7.2.2 Risk and Vulnerability Assessment

Table 75 summarizes the results of the RF ranking exercise performed by the City of Dacono. The results represent the relative risk of different hazards across the municipality from the perspective of local stakeholders and subject matter experts. Note the final RF Ranking values in this table include the weighting factors detailed in the Risk Assessment chapter of this Plan.

Table 75. Risk Factor Results for Dacono

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	RF Ranking
Agricultural Hazards	3	3	4	1	4	3.1
Cyber Hazards	3	4	4	4	4	3.7
Drought	3	2	4	1	4	2.8
Earthquake	1	2	4	1	1	1.9
Extreme Temps.	2	2	2	1	3	2.0
Flood	3	3	4	2	4	3.2
Hazmat	3	2	2	3	2	2.4
Land Subsidence	1	1	1	2	1	1.1
Prairie Fire	3	2	1	4	3	2.4
Public Health Hazards	4	2	4	1	3	3.0
Severe Storms	4	3	4	3	2	3.4
Tornado & Wind	3	4	2	4	4	3.3

The conclusions drawn from the qualitative assessment are organized into three categories shown in the following table and provide a summary of hazard risk for Dacono as a whole - based on High, Moderate, or Low risk designations. This process helped frame ongoing planning discussions around local and regional hazard risks and assisted with the development of the Plan's updated mitigation strategy.

Table 76. Hazard Risk Conclusions for Dacono

HIGH RISK (2.5 or higher)	**Agricultural Hazards, Cyber Hazards, Drought, Flood, Public Health Hazards, Severe Storms, Tornado & Straight-Line Wind**
MODERATE RISK (2.0 – 2.4)	**Extreme Temperatures, Hazmat, Prairie Fire**
LOW RISK (1.9 or lower)	**Earthquake, Land Subsidence**

Since the 2016 Plan, the City has decreased the assessed risk from extreme temperatures to Moderate Risk (formerly High) and land subsidence to Low (formerly Moderate). It has also elevated prairie fire from Low Risk to Moderate. Besides the newly added hazards of agricultural hazards and cyber hazards, all other risk rankings remain the same.

The following sections highlight the City of Dacono's High Risk hazards and include any specific content relevant to the City. They are intended to supplement information included in each hazard profile in the main body of this Plan.

7.2.2.1 Agricultural Hazards (including Disease & Pests)

Vulnerability to agricultural hazards is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to these hazards. There are no previous events to document specific to Dacono. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.2.2.2 Cyber Hazards

For any municipality, vulnerability to cyber hazards does not vary from that of the County as a whole. While there are no documented cyber events impacting Dacono, the threat of this hazard is continually increasing. There are no previous events to document specific to Dacono. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.2.2.3 Drought

The community vulnerability to drought is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to this hazard. There are no previous events to document specific to Dacono. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.2.2.4 Flood (including Dam & Levee Failure)

Flood is a very localized hazard and vulnerability is unique for each municipality. There are no previous events to document specific to Dacono.

Overall vulnerability to flood is increased for the City of Dacono, where 2.2% of address points (58) are located within the Special Flood Hazard Area (SFHA). This is a larger percentage of structures at risk, as compared to 1.6% of Countywide addresses located in the SFHA.

Flood events can also occur as a result of dam or levee failure. In these cases, flood waters may not follow the typical floodplains mapped as the SFHA.

The City of Dacono's overall vulnerability to flooding in dam inundation areas is significantly different from the rest of the County, as Dacono has no address points located in these dam inundation areas. This is compared to 1.0% of Countywide addresses located in these areas.

The City is not the first jurisdiction downstream of any dams. Additional information pertaining to dams can be referenced at the State's Dam Safety website: https://dwr.state.co.us/Tools/DamSafety/Dams .

The City's overall vulnerability to flooding in areas protected by known levees is substantially different from the rest of the County, as Dacono has no address points located in within levee protected areas. This is compared to 1.6% of Countywide addresses located in these areas.

It is important to note that this analysis is only as good as best available data allows. Current floodplains, dam inundation areas, and areas protected by levees may not currently map all hazard areas. Additionally, mapped hazard areas may be dated and in need of updated mapping and analysis.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.2.2.5 Public Health Hazards

Vulnerability to public health hazards is not expected to be noticeably different from the rest of the County. Individuals at a higher risk to this hazard include the aging adult population, those with a chronic illness, such as diabetes, asthma, coronary heart disease, and those who are obese or overweight. Other populations at risk include children, those in poverty and those with a disability. This data is collected at census tract level by the Centers for Disease Control (CDC) and is unavailable at a municipality level. The data by census tract can be found in the Colorado Department of Health and Environment Open Data database here.

Future occurrences are expected to mirror that of the County. There are no previous events to document specific to Dacono. Refer to Chapter 5 – Risk Assessment of this Plan for additional details, including a summary of the higher risk population demographics for Weld County and the State.

7.2.2.6 Severe Storm (including Hail, Lightning, & Winter Storm)

Vulnerability to severe storm, which includes hail, lightning, and winter storm, is not noticeably different from the rest of the County. Dacono's more densely developed areas experience the greatest risk. Any structures not constructed to meet recent building codes experience the greatest risk from structural damages.

According to the NOAA's Storm Events Database, between 2015 and 2020, the City of Dacono has had seven severe thunderstorms which resulted in reports of hail. There was no reported damage to property or crops and no injuries or deaths. The hail in these storms ranged in size from 1 inch to 1.75 inches.

No other events for severe storm, specific to Dacono, were recorded over this time period.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.2.2.7 Tornado & Straight-Line Wind

Vulnerability to tornado & straight-line wind is not noticeably different from the rest of the County. Dacono's more densely developed areas experience the greatest risk, in addition to any structures not constructed to meet recent building codes.

Between 2015 and 2020, there were no reports of occurrences specific to Dacono. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.2.3 Capabilities Assessment

The capability assessment examines the ability of the City of Dacono to implement and manage the comprehensive mitigation strategy laid out in this Plan. The strengths, weaknesses, and resources of the community are identified here as a means for evaluating and maintaining effective and appropriate management of the city's hazard mitigation program.

Planning and regulatory capabilities are powerful tools for implementing hazard mitigation. The Town currently utilizes or has implemented many of these capabilities shown in Table 77. It is important for all municipalities to regularly review each of these tools, to identify opportunities for further risk reduction efforts.

Table 77. Planning & Regulatory Capabilities

Mitigation Capability	Utilized?	Comments
Comprehensive, Master, or General Plan	Yes	Dacono Forward adopted 2017
Capital Improvement Program or Plan (CIP)	No	
Floodplain Management Plan	No	
Stormwater Program / Plan	No	
Community Wildfire Protection Plan (CWPP)	No	
Erosion / Sediment Control Program	No	
Economic Development Plan	No	
Other:	No	
Building Codes (Year)	Yes	2018 Edition
Site Plan Review Requirements	Yes	
Other:	No	
Zoning Ordinance (Land Use)	Yes	
Subdivision Ordinance	Yes	
National Flood Insurance Program (NFIP) Participant	Yes	
Flood Insurance Study / Flood Insurance Rate Map / DFIRM	Yes	
Floodplain Ordinance	Yes	

Mitigation Capability	Utilized?	Comments
Elevation Certificates for Floodplain Development	Yes	
Community Rating System (CRS) Participant	No	
Open Space / Conservation Program	No	
Growth Management Ordinance	No	
Stormwater Ordinance	Yes	
Other Hazard Ordinance (steep slope, wildfire, snow loads, etc.)	No	
Other:	No	

Available resources including staff, municipal groups, and technology are all vital for a community to be able to implement hazard mitigation. Dacono is fortunate to have most all of these capabilities identified in Table 78.

Table 78. Administrative & Technical Capabilities

Mitigation Capability	Utilized?	Comments
Planning Commission	Yes	
Mitigation Planning Committee	No	
Maintenance Programs (tree trimming, clearing drainage, etc.)	Yes	
Emergency Manager	Yes	Carbon Valley Emergency Management Agency (CVEMA)
Building Official	Yes	
Floodplain Administrator	Yes	
Community Planner	Yes	
Transportation Planner	No	
Civil Engineer	Yes	
GIS Capability	Yes	
Resiliency Planner	No	
Other:	No	
Warning Systems / Services (flood)	No	
Warning Systems / Services (other / multi hazard)	Yes	
Grant Writing / Management	No	
Other:	No	

The ability of a community to implement a comprehensive mitigation strategy is largely dependent on available funding. These related municipal capabilities are outlined in Table 79 and show that Dacono utilizes a broad range of financial tools that can support mitigation activities.

Table 79. Financial Capabilities

Mitigation Capability	Utilized?	Comments
Levy for Specific Purposes with Voter Approval	Yes	
Utilities Fees	Yes	
System Development / Impact Development Fee	Yes	
General Obligation Bonds to Incur Debt	Yes	
Special Tax Bonds to Incur Debt	No	
Open Space / Conservation Fund	Yes	
Stormwater Utility Fees	No	
Capital Improvement Project Funding	Yes	
Community Development Block Grants (CDBG)	Yes	
Withheld spending in hazard-prone areas	No	
Other:	No	

Education and outreach are important capabilities that allow a community to continue the conversation with their public regarding hazard risk and opportunities to mitigate. Table 80 shows that Dacono could benefit by expanding upon these capabilities.

Table 80. Education & Outreach Capabilities

Mitigation Capability	Utilized?	Comments
Public Hazard Education / Outreach Program	Yes	CVEMA Hazard and Preparedness Education and Outreach
Local Citizen Groups That Communicate Hazard Risks	No	
Firewise	No	
NOAA StormReady Program	No	
Other:	No	

7.2.4 Plan Maintenance and Implementation

The City of Dacono has developed a Plan Maintenance and Implementation Strategy outlining their method and schedule for keeping the plan current. The Implementation Strategy below also includes a discussion of how the City will continue public participation in the plan maintenance process.

- The Carbon Valley Emergency Manager will facilitate an annual review of hazard mitigation plan and actions with City staff and leadership. In addition, The City of Dacono and CVEMA will periodically engage the public in the process of identifying hazards, risks, and prioritizing mitigation actions.

7.2.5 Integrating Hazard Mitigation into Local Planning

The City also identified ways to integrate hazard mitigation into their local planning mechanisms and policies. Following are the specific integration strategies identified by the City of Dacono.

- To consider implementing hazard mitigation actions into the City's capital improvement projects and building codes.

7.2.6 Mitigation Actions

The mitigation actions identified by the City during the Plan update are included in Table 81. Both of these actions from the 2016 Plan have been carried over into the City's updated mitigation strategy.

Table 81. 2021 Mitigation Actions

ID	Organization	Action
2021-19	1-Dacono	Design and Construction of CO Blvd Bridge
2021-20	2-Dacono	Grandview Street and York Street Flood Mitigation

7.3 Town of Eaton

"The Comprehensive Plan for the Town of Eaton is intended to be a statement of the collective vision for Eaton's future. The goals and policies within the plan define the values that are important to the community. …These overall goals set forth our intent and describe our mission." - 2018

Overall Community Goals:

- Preserve a sense of community, high quality schools, a sense of safety, and a sense of history.
- Allow planned growth, high quality and affordable housing, and sustainable growth.
- Encourage the maintenance and improvement of existing commercial and industrial businesses.
- Encourage a balance of new commercial and industrial development that will serve the community's needs.
- Encourage new jobs to keep the economy balanced and provide opportunities for those who wish to live and work in the community.
- Enhance the provision of local services, including those provided by local government or the private sector.
- Enhance the existing community programs that make the Eaton community strong and assure that this sense of community remains strong.
- Promote affordable and comfortable housing for senior citizens and maintain the related programs that support them.
- Avoid land uses and development activities that damage Eaton's environment and its community resources.
- Eliminate any environmental contamination of abandoned buildings and related land uses.
- Manage the growth that is likely to occur in the Eaton community and develop and maintain the new and the existing infrastructure that will serve that growth.
- Work with other community agencies and organizations to solve issues, plan for future growth, and build the best possible Town.

7.3.1 Community Profile

The Town of Eaton is located 7 miles north of Greeley, along US Route 85. It is located on the Denver, Colorado-Cheyenne, Wyoming mainline of the Union Pacific Railroad.

The local economy's foundation has a long history rooted in agriculture. Eaton takes pride in that foundation and considers itself the Town of "Beef, Beets and Beans" Retail businesses, professional services and industrial development have helped to diversify the economy and with continued growth are expected to strengthen the tax base for the Town.

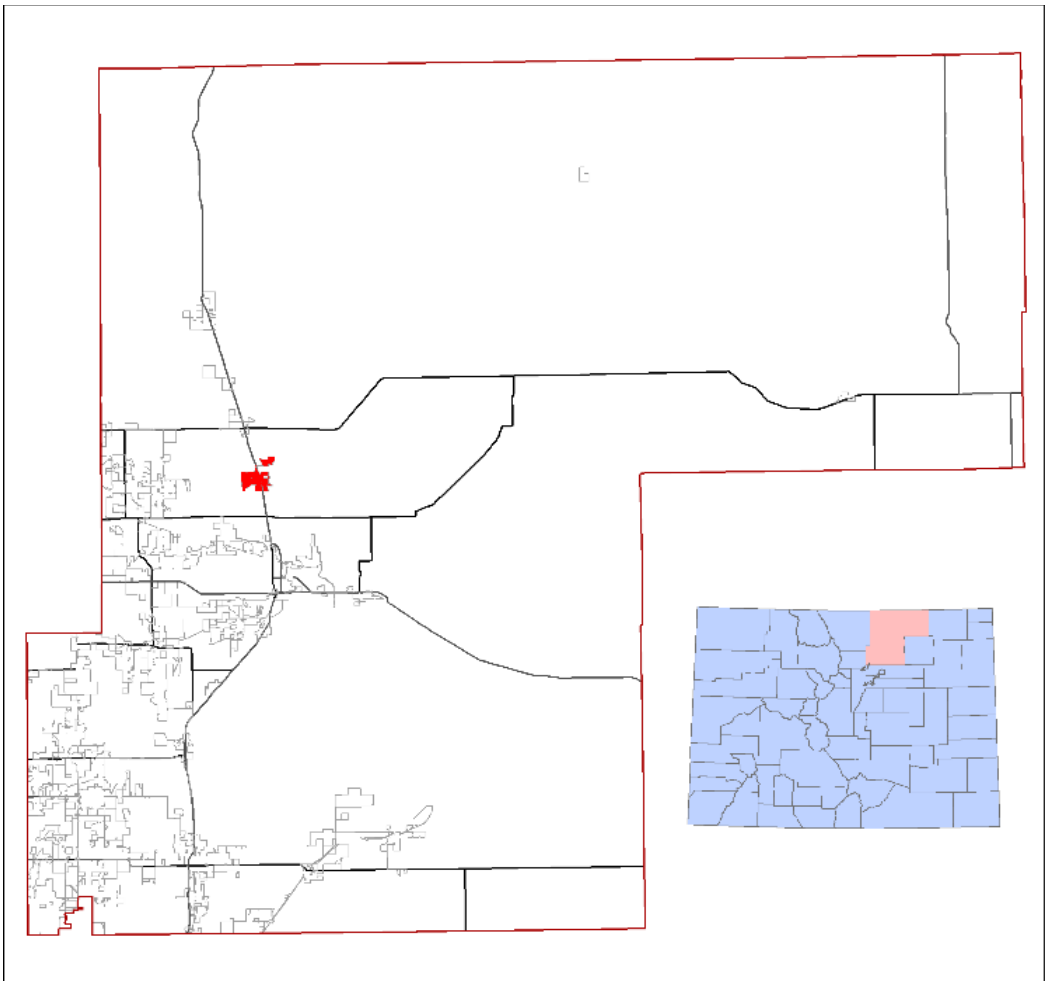


Table 82 shows some development information for the Town of Eaton. Current information for specific characteristics of the population is only available from the US Census Bureau for municipalities with populations over 5,000 people, until each decennial census.

Table 82. Town of Eaton Demographics

Eaton	Colorado	
5,707	5,758,736	Population, 2019
30.3%	14.5%	Population, % change April 1, 2010 to July 1, 2019
2.77	2.56	Persons Per Household, 2019

Note: Recent data is unavailable from the US Census Bureau for some categories, based on the size of the municipality. Source: US Census Bureau

7.3.2 Risk and Vulnerability Assessment

Table 83 summarizes the results of the RF ranking exercise performed by the Town of Eaton. The results represent the relative risk of different hazards across the municipality from the perspective of local stakeholders and subject matter experts. Note the final RF Ranking values in this table include the weighting factors detailed in the Risk Assessment chapter of this Plan.

Table 83. Risk Factor Results for Eaton

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	RF Ranking
Agricultural Hazards	2	3	3	4	4	2.9
Cyber Hazards	3	2	3	4	3	2.8
Drought	3	1	4	1	4	2.5
Earthquake	1	3	3	4	1	2.3
Extreme Temps.	3	1	4	3	1	2.4
Flood	1	1	2	4	2	1.6
Hazmat Release	2	2	4	4	3	2.7
Land Subsidence	1	1	2	4	4	1.8
Prairie Fire	3	2	2	4	1	2.4
Public Health Hazards	4	2	3	1	4	2.9
Severe Storms	4	3	4	2	3	3.4
Tornado & Wind	3	3	3	2	1	2.7

The conclusions drawn from the qualitative assessment are organized into three categories shown in the following table and provide a summary of hazard risk for Eaton as a whole - based on High, Moderate, or Low risk designations. This process helped frame ongoing planning discussions around local and regional hazard risks and assisted with the development of the Plan's updated mitigation strategy.

Table 84. Hazard Risk Conclusions for Eaton

HIGH RISK (2.5 or higher)	**Agricultural Hazards, Cyber Hazards, Drought, Hazmat Release, Public Health Hazards, Severe Storms, Tornado & Straight-Line Wind**
MODERATE RISK (2.0 – 2.4)	**Earthquake, Extreme Temperatures, Prairie Fire**
LOW RISK (1.9 or lower)	**Flood, Land Subsidence**

The following sections highlight the Town of Eaton's High Risk hazards and include any specific content relevant to the Town. They are intended to supplement information included in each hazard profile in the main body of this Plan.

7.3.2.1 Agricultural Hazards (including Disease & Pests)

Vulnerability to agricultural hazards is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to these hazards. There are no previous events to document specific to Eaton. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.3.2.2 Cyber Hazards

For any municipality, vulnerability to cyber hazards does not vary from that of the County as a whole. While there are no documented cyber events impacting Eaton, the threat of this hazard is continually increasing. There are no previous events to document specific to Eaton. Future occurrences are

expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.3.2.3 Drought

The community vulnerability to drought is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to this hazard. There are no previous events to document specific to Eaton. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.3.2.4 Hazmat Release

Vulnerability to hazmat release is increased for the Town of Eaton, mainly due to the location of a CDOT hazardous materials route through the community. Additionally, railroads span across Eaton which present their own increased risk for hazmat release. As is true for the entire County, the presence of any businesses that store hazardous materials also increases the risk for these types of events.

Based on data supplied by the Pipeline and Hazardous Materials Safety Administration's (PHMSA) Incident Reports Database there have been two events that have occurred within Eaton between 1991 and 2019. These were due to improper preparation for transport and mishandling.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.3.2.5 Public Health Hazards

Vulnerability to public health hazards is not expected to be noticeably different from the rest of the County. Individuals at a higher risk to this hazard include the aging adult population, those with a chronic illness, such as diabetes, asthma, coronary heart disease, and those who are obese or overweight. Other populations at risk include children, those in poverty and those with a disability. This data is collected at census tract level by the Centers for Disease Control (CDC) and is unavailable at a municipality level. The data by census tract can be found in the Colorado Department of Health and Environment Open Data database here.

Future occurrences are expected to mirror that of the County. There are no previous events to document specific to Eaton. Refer to Chapter 5 – Risk Assessment of this Plan for additional details, including a summary of the higher risk population demographics for Weld County and the State.

7.3.2.6 Severe Storms (including Hail, Lightning, & Winter Storm)

Vulnerability to severe storm, which includes hail, lightning, and winter storm, is not noticeably different from the rest of the County. Eaton's more densely developed areas experience the greatest risk, in addition to potential greater losses to the agriculture sector. Any structures not constructed to meet recent building codes experience the greatest risk from structural damages.

According to the NOAA's Storm Events Database, between 2015 and 2020, the Town of Eaton has had eleven severe storm which resulted in reports of hail. The hail in these storms ranged in size from 0.75 inches to 1.75 inches. There was no reported damage to property or crops and no injuries or deaths.

No other events for severe storm, specific to Eaton, were recorded over this time period.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.3.2.7 Tornado & Straight-Line Wind

Vulnerability to tornado & straight-line wind is not noticeably different from the rest of the County. Eaton's more densely developed areas experience the greatest risk, in addition to any structures not constructed to meet recent building codes.

According to the NOAA's Storm Events Database, between 2015 and 2020, one event, an EF0 tornado, was reported. A brief landspout caused minor damage to a farmstead, although no claims for property damage were reported. There were no injuries and no deaths.

No other events for severe storm, specific to Eaton, were recorded over this time period.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.3.3 Capabilities Assessment

The capability assessment examines the ability of the Town of Eaton to implement and manage the comprehensive mitigation strategy laid out in this Plan. The strengths, weaknesses, and resources of the community are identified here as a means for evaluating and maintaining effective and appropriate management of the Town's hazard mitigation program.

Planning and regulatory capabilities are powerful tools for implementing hazard mitigation. The Town currently utilizes or has implemented a number of these capabilities shown in Table 85. It is important for all municipalities to regularly review each of these tools, to identify opportunities for further risk reduction efforts.

Table 85. Planning & Regulatory Capabilities

Mitigation Capability	Utilized?	Comments
Comprehensive, Master, or General Plan	Yes	Eaton Comprehensive Plan- last update 10/2020
Capital Improvement Program or Plan (CIP)	No	Future project
Floodplain Management Plan	No	Eaton Draw
Stormwater Program / Plan	No	Water restrictions, Drought Plan next year
Community Wildfire Protection Plan (CWPP)	No	
Erosion / Sediment Control Program	Yes	City of Greeley -standards
Economic Development Plan	No	
Other:	No	
Building Codes (Year)	Yes	2018 Updated building codes- (Procode) 3rd party contractor for inspections
Site Plan Review Requirements	No	Baseline Engineering
Other:	No	
Zoning Ordinance (Land Use)	Yes	
Subdivision Ordinance	Yes	
National Flood Insurance Program (NFIP) Participant	Yes	

Mitigation Capability	Utilized?	Comments
Flood Insurance Study / Flood Insurance Rate Map / DFIRM	Yes	
Floodplain Ordinance	Yes	
Elevation Certificates for Floodplain Development	No	Eaton Draw
Community Rating System (CRS) Participant	No	
Open Space / Conservation Program	No	Tension, retention, no formal program
Growth Management Ordinance	Yes	
Stormwater Ordinance	Yes	
Other Hazard Ordinance (steep slope, wildfire, snow loads, etc.)	No	Building Code- snow load for houses
Other:	No	

Available resources including staff, municipal groups, and technology are all vital for a community to be able to implement hazard mitigation. Eaton is fortunate to have most all of these capabilities identified in Table 86.

Table 86. Administrative & Technical Capabilities

Mitigation Capability	Utilized?	Comments
Planning Commission	Yes	Eaton Planning Commission
Mitigation Planning Committee	No	May be a possibility going forward
Maintenance Programs (tree trimming, clearing drainage, etc.)	Yes	Eaton Public Works, Maintenance
Emergency Manager	Yes	Jeff Schreier
Building Official	Yes	John Gesick
Floodplain Administrator	Yes	Jeff Schreier
Community Planner	Yes	Vince Harris
Transportation Planner	Yes	Vince Harris
Civil Engineer	Yes	Greeley- Brad Curtis
GIS Capability	Yes	Started 2019
Resiliency Planner	No	
Other:	No	
Warning Systems / Services (flood)	No	
Warning Systems / Services (other / multi hazard)	Yes	Code Red, IPAWS
Grant Writing / Management	Yes	Jeff Schreier
Other:	No	

The ability of a community to implement a comprehensive mitigation strategy is largely dependent on available funding. These related municipal capabilities are outlined in Table 87 and show that Eaton utilizes some financial tools that can support mitigation activities.

Table 87. Financial Capabilities

Mitigation Capability	Utilized?	Comments
Levy for Specific Purposes with Voter Approval	No	
Utilities Fees	Yes	Town of Eaton, Water/Sewer/Irrigation/Trash Enterprise funds
System Development / Impact Development Fee	Yes	Impact Fees
General Obligation Bonds to Incur Debt	No	
Special Tax Bonds to Incur Debt	No	
Open Space / Conservation Fund	No	
Stormwater Utility Fees	No	
Capital Improvement Project Funding	No	
Community Development Block Grants (CDBG)	No	future East Eaton, Jeff Schreier on the committee
Withheld spending in hazard-prone areas	No	
Other:	No	

Education and outreach are important capabilities that allow a community to continue the conversation with their public regarding hazard risk and opportunities to mitigate. Table 88 shows that Eaton could benefit by expanding upon these capabilities.

Table 88. Education & Outreach Capabilities

Mitigation Capability	Utilized?	Comments
Public Hazard Education / Outreach Program	No	
Local Citizen Groups That Communicate Hazard Risks	No	
Firewise	No	
NOAA StormReady Program	In Progress	Storm Spotter classes, shelter (board chambers)
Other:	No	

7.3.4 Mitigation Actions

The mitigation actions identified by the Town during the Plan update are included in Table 89.

Table 89. 2021 Mitigation Actions

ID	Organization	Action
2021-21	1-Eaton	Drought Plan Development
2021-22	2-Eaton	Roundabout Collins Rd & CR35
2021-23	3-Eaton	Pump Pit

7.4 Town of Erie

In the 2015 update of the Town of Erie Comprehensive Plan, key principles were created based on the community's aspirations and the ideals for the Town within the planning area.

These key principles are:

- A Coordinated and Efficient Pattern of Growth
- Quality Design and Development
- Provide Infrastructure and Public Services Efficiently and Equitably
- Stable, Cohesive Neighborhoods Offering a Variety of Housing Types
- A Comprehensive, Integrated Transportation System
- Stewardship of the Natural Environment
- Trails, Parks and Recreation Opportunities
- Protected Lands Program
- Balanced Land Use Mix
- Overall Economic Vitality
- Downtown Vitality

7.4.1 Community Profile

The Town of Erie is situated at the center of Colorado's major economic and population hubs. Located in both Boulder and Weld Counties, Erie lies just west of I-25 and spans 48 square miles, extending from the north side of State Highway 52 and south to State Highway 7.

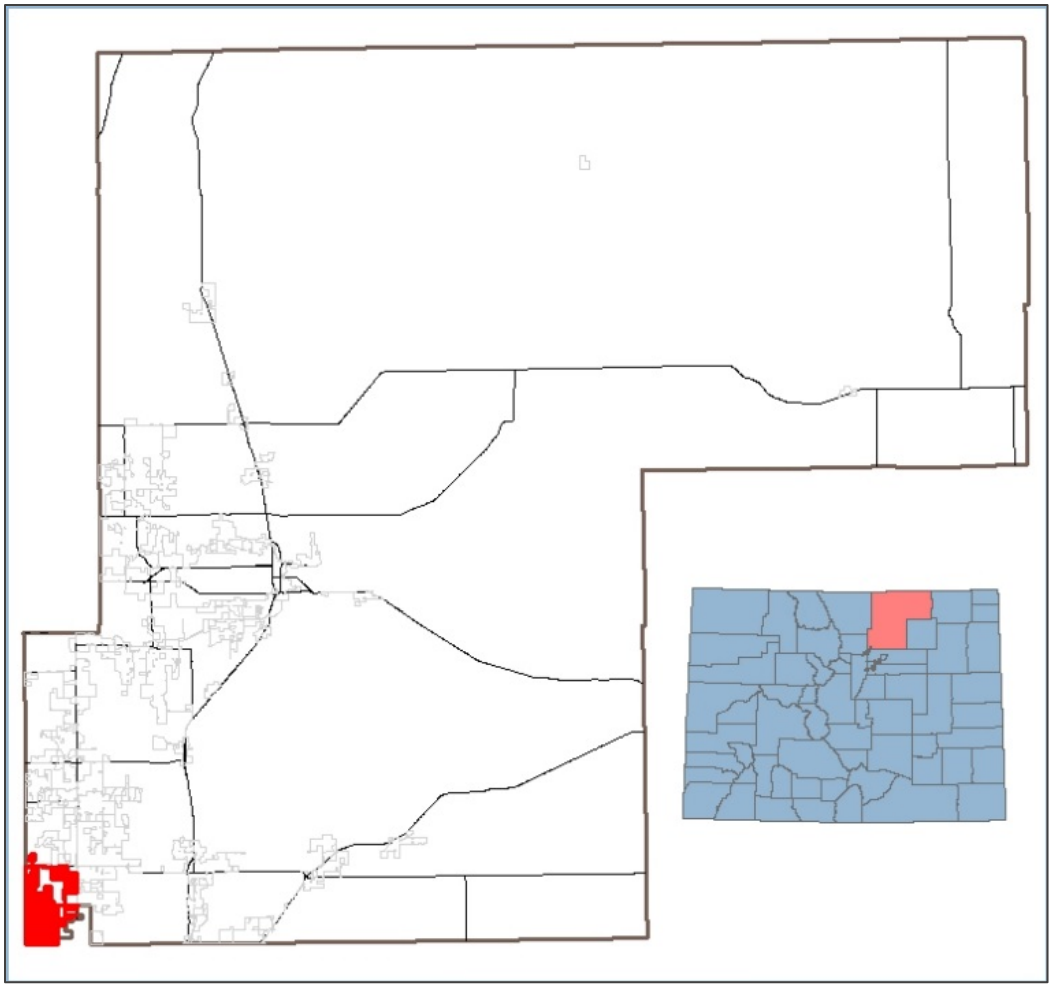


Table 90 summarizes key demographic and development related characteristics of the Town of Erie.

Table 90. Town of Erie Demographics

Erie	Colorado	
27,003	5,758,736	Population, 2019
48.5%	14.5%	Population, % change April 1, 2010 to July 1, 2019
8.4%	5.8%	% Population under 5 years, 2019
30.3%	21.9%	% Population under 19 years, 2019
9.3%	14.6%	% Population 65 years and over, 2019
86.9%	64.9%	Homeownership Rate, 2019
2.95	2.56	Persons Per Household, 2019
$119,973	$68,811	Median Household Income, 2014- 2018
4.5%	9.3%	Persons below poverty level, %, 2014- 2018
2.2%	7.3%	% Population under 65 years, with a disability 2014-2018
11.0%	17%	Language other than English spoken at home, % age 5+, 2014- 2018

Source: US Census Bureau

The Town of Erie has a projected population growth of 4.6% by 2023, estimating the future population to be 31,035. The population growth in Erie has created an economy primarily driven by housing construction and the community is working on diversifying the economy and strengthening the tax base.

7.4.2 Risk and Vulnerability Assessment

The Town of Erie is situated in both Boulder and Weld Counties. For the purpose of this plan, spatially analyzed hazard risks have been only assessed for the areas of Erie that lie specifically within Weld County.

Table 91 summarizes the results of the RF ranking exercise performed by the Town of Erie. The results represent the relative risk of different hazards across the municipality from the perspective of local stakeholders and subject matter experts. Note the final RF Ranking values in this table include the weighting factors detailed in the Risk Assessment chapter of this Plan.

Table 91. Risk Factor Results for Erie

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	RF Ranking
Agricultural Hazards	3	2	3	1	4	2.6
Cyber Hazards	4	2	4	4	4	3.4
Drought	3	3	4	1	4	3.1
Earthquake	1	2	3	4	1	2.0
Extreme Temps.	3	2	3	2	3	2.6
Flood	3	3	3	3	3	3.0
Hazmat Release	3	1	2	4	1	2.1
Land Subsidence	2	1	1	4	1	1.6
Prairie Fire	3	1	1	4	1	1.9
Public Health Hazards	4	3	3	2	4	3.3
Severe Storms	4	3	3	2	1	3.0
Tornado & Wind	2	2	2	4	1	2.1

The conclusions drawn from the qualitative assessment are organized into three categories shown in the following table and provide a summary of hazard risk for Erie as a whole - based on High, Moderate, or Low risk designations. This process helped frame ongoing planning discussions around local and regional hazard risks and assisted with the development of the Plan's updated mitigation strategy.

Table 92. Hazard Risk Conclusions for Erie

HIGH RISK (2.5 or higher)	**Agricultural Hazards, Cyber Hazards, Drought, Extreme Temperatures, Flood, Public Health Hazards, Severe Storms**
MODERATE RISK (2.0 – 2.4)	**Earthquake, Hazmat Release, Tornado & Straight-Line Wind**
LOW RISK (1.9 or lower)	**Land Subsidence, Prairie Fire**

Since the 2016 Plan, the Town has decreased the assessed risk from earthquake, hazmat release, and tornado & straight-line wind to Moderate Risk (all were formerly High). It also decreased the assessed

risk from land subsidence and prairie fire from High to Low. Besides the newly added hazards of agricultural hazards and cyber hazards, all other risk rankings remain the same.

The following sections highlight the Town of Erie's High Risk hazards and include any specific content relevant to the Town. They are intended to supplement information included in each hazard profile in the main body of this Plan.

7.4.2.1 Agricultural Hazards (including Disease & Pests)

Vulnerability to agricultural hazards is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to these hazards. There are no previous events to document specific to Erie. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.4.2.2 Cyber Hazards

For any municipality, vulnerability to cyber hazards does not vary from that of the County as a whole. While there are no documented cyber events impacting Erie, the threat of this hazard is continually increasing. There are no previous events to document specific to Erie. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.4.2.3 Drought

The community vulnerability to drought is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to this hazard. There are no previous events to document specific to Erie. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.4.2.4 Extreme Temperatures

The Town of Erie's vulnerability to extreme temperatures is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to these hazards due to potential crop and livestock losses. Additionally, individuals at a higher risk to extreme temperatures include those with mobility issues, independent living difficulty, the elderly, low-income families, outdoor laborers, and those experiencing homelessness. Data for these demographics is collected at census tract level, however snapshot data for populations that can fluctuate drastically, such as the number of outdoor laborers and those experiencing homelessness is not included. These are still considerable populations in the County and the Town of Erie and local efforts to quantify these populations periodically can help with mitigation planning.

The data for high risk populations has been analyzed by Colorado Department of Public Health and Environment (CDPHE) and has been used to create Community Inclusions maps. These maps can be zoomed into specific census tracts for municipalities and communities, illustrating the population variances. Refer to Chapter 4 for examples of these maps for Weld County.

There are no previous events to document specific to the Town of Erie. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.4.2.5 Flood (including Dam & Levee Failure)

Flood is a very localized hazard and vulnerability is unique for each municipality. According to the NOAA's Storm Events Database, a flood caused by heavy rain, on 5/8/2015, impacted Erie. The flood caused $500,000 in property damages and $100,000 in crop damages. There were no injuries or deaths.

The Town of Erie's overall vulnerability to flood is noticeably lower than the rest of the County. Erie spans both Boulder and Weld Counties and the information for vulnerability includes only those address points within Weld County. Erie has 37 address points located in the Special Flood Hazard Area (SFHA). This equates to 0.5% of all address points for the Town, as compared to 1.6% of Countywide addresses located in the SFHA.

Flood events can also occur as a result of dam or levee failure. In these cases, flood waters may not follow the typical floodplains mapped as the SFHA.

Overall vulnerability to flooding in dam inundation areas is increased for the Town of Erie, where 1.6% of address points (112) are located within these dam inundation areas. This is a larger percentage of structures at risk, as compared to 1.0% of Countywide addresses located in these areas.

Additionally, the Town is the first jurisdiction downstream from four dams. Two of these have a hazard classification of Significant or High, both of which have Emergency Action Plans (EAPs). Additional information pertaining to dams can be referenced at the State's Dam Safety website: https://dwr.state.co.us/Tools/DamSafety/Dams .

Overall vulnerability to flooding in areas protected by known levees is increased for the Town of Erie, where 5.6% of address points (400) are located within levee protected areas. This is a larger percentage of structures at risk, as compared to 1.6% of Countywide addresses located in protected areas.

It is important to note that this analysis is only as good as best available data allows. Current floodplains, dam inundation areas, and areas protected by levees may not currently map all hazard areas. Additionally, mapped hazard areas may be dated and in need of updated mapping and analysis.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

There are currently two Repetitive Loss (SRL) structures in Erie. Additional details pertaining to this and FEMA's National Flood Insurance Program (NFIP) can be found in this Plan's flood chapter.

7.4.2.6 Public Health Hazards

Vulnerability to public health hazards is not expected to be noticeably different from the rest of the County. Individuals at a higher risk to this hazard include the aging adult population, those with a chronic illness, such as diabetes, asthma, coronary heart disease, and those who are obese or overweight. Other populations at risk include children, those in poverty and those with a disability. This data is collected at census tract level by the Centers for Disease Control (CDC) and is unavailable at a municipality level. The data by census tract can be found in the Colorado Department of Health and Environment Open Data database here.

Future occurrences are expected to mirror that of the County. There are no previous events to document specific to Erie. Refer to Chapter 5 – Risk Assessment of this Plan for additional details, including a summary of the higher risk population demographics for Weld County and the State.

7.4.2.7 Severe Storm (including Hail, Lightning, & Winter Storm)

Vulnerability to severe storm, which includes hail, lightning, and winter storm, is not noticeably different from the rest of the County. Erie's more densely developed areas experience the greatest risk, in addition to potential greater losses to the agriculture sector. Any structures not constructed to meet recent building codes experience the greatest risk from structural damages.

According to the NOAA's Storm Events Database, between 2015 and 2020, the Town of Erie has had eight severe storm events. Seven of these events resulted in reports of hail, which ranged in size from 0.75 inches to 1.5 inches. None of these events resulted in damage to property or crops and no injuries or deaths.

One event, on 7/25/2018, was reported as thunderstorm winds with magnitudes of 61mph and 70 mph. This storm produced large hail, damaging winds and heavy rain. The storm knocked out power, dented cars and damaged trees. Near Jasper Road east of U.S. 287, the storm picked up a 40-foot grain trailer and pushed it almost 200 yards.

No other events for severe storm, specific to Erie, were recorded over this time period.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.4.3 Capabilities Assessment

The capability assessment examines the ability of the Town of Erie to implement and manage the comprehensive mitigation strategy laid out in this Plan. The strengths, weaknesses, and resources of the community are identified here as a means for evaluating and maintaining effective and appropriate management of the Town's hazard mitigation program.

Planning and regulatory capabilities are powerful tools for implementing hazard mitigation. The Town currently utilizes or has implemented most of these capabilities shown in Table 93. It is important for all municipalities to regularly review each of these tools, to identify opportunities for further risk reduction efforts.

Table 93. Planning & Regulatory Capabilities

Mitigation Capability	Utilized?	Comments
Comprehensive, Master, or General Plan	Yes	Master Plan
Capital Improvement Program or Plan (CIP)	Yes	5-Year CIP Plan
Floodplain Management Plan	Yes	
Stormwater Program / Plan	Yes	
Community Wildfire Protection Plan (CWPP)	No	
Erosion / Sediment Control Program	Yes	
Economic Development Plan	Yes	
Other:	No	
Building Codes (Year)	Yes	2015
Site Plan Review Requirements	Yes	
Other:	No	

Mitigation Capability	Utilized?	Comments
Zoning Ordinance (Land Use)	Yes	
Subdivision Ordinance	Yes	
National Flood Insurance Program (NFIP) Participant	Yes	
Flood Insurance Study / Flood Insurance Rate Map / DFIRM	Yes	
Floodplain Ordinance	Yes	
Elevation Certificates for Floodplain Development	No	
Community Rating System (CRS) Participant	No	
Open Space / Conservation Program	Yes	
Growth Management Ordinance	No	
Stormwater Ordinance	Yes	
Other Hazard Ordinance (steep slope, wildfire, snow loads, etc.)	Yes	
Other:	No	

Available resources including staff, municipal groups, and technology are all vital for a community to be able to implement hazard mitigation. Erie is fortunate to have many of these capabilities identified in Table 94.

Table 94. Administrative & Technical Capabilities

Mitigation Capability	Utilized?	Comments
Planning Commission	Yes	
Mitigation Planning Committee	No	
Maintenance Programs (tree trimming, clearing drainage, etc.)	Yes	
Emergency Manager	Yes	
Building Official	Yes	
Floodplain Administrator	Yes	
Community Planner	Yes	
Transportation Planner	No	
Civil Engineer	Yes	
GIS Capability	Yes	
Resiliency Planner	No	
Other:	No	
Warning Systems / Services (flood)	No	
Warning Systems / Services (other / multi hazard)	No	
Grant Writing / Management	No	
Other:	No	

The ability of a community to implement a comprehensive mitigation strategy is largely dependent on available funding. These related municipal capabilities are outlined in Table 95 and show that Erie utilizes a broad range of financial tools that can support mitigation activities.

Table 95. Financial Capabilities

Mitigation Capability	Utilized?	Comments
Levy for Specific Purposes with Voter Approval	No	
Utilities Fees	Yes	
System Development / Impact Development Fee	Yes	
General Obligation Bonds to Incur Debt	Yes	
Special Tax Bonds to Incur Debt	No	
Open Space / Conservation Fund	Yes	
Stormwater Utility Fees	No	
Capital Improvement Project Funding	Yes	
Community Development Block Grants (CDBG)	No	
Withheld spending in hazard-prone areas	No	
Other:	No	

Education and outreach are important capabilities that allow a community to continue the conversation with their public regarding hazard risk and opportunities to mitigate. Table 96 shows that Erie could benefit by expanding upon these capabilities.

Table 96. Education & Outreach Capabilities

Mitigation Capability	Utilized?	Comments
Public Hazard Education / Outreach Program	No	
Local Citizen Groups That Communicate Hazard Risks	No	
Firewise	No	
NOAA StormReady Program	No	
Other:		

7.4.4 Plan Maintenance and Implementation

The Town of Erie has developed a Plan Maintenance and Implementation Strategy outlining their method and schedule for keeping the plan current. The Implementation Strategy below also includes a discussion of how the Town will continue public participation in the plan maintenance process.

- The Town of Erie will follow Boulder County's schedule for plan monitoring, revision, and maintenance. Mitigation Actions will be monitored and administered by appropriate Town Departments (i.e. - Administration, Police and Public Works).
- The Town is participating in Hazard Mitigation Plans with both Boulder and Weld County. Plans will be made public (online) when they are brought forward for Board approval. Any changes to these plans requiring Board approval would also be made public.

7.4.5 Integrating Hazard Mitigation into Local Planning

The Town also identified ways to integrate hazard mitigation into their local planning mechanisms and policies. Following are the specific integration strategies identified by the Town of Erie.

- The Town will update our Capital Improvement Plans to integrate our mitigation actions.

7.4.6 Mitigation Actions

The new mitigation actions identified by the Town during the Plan update are included in Table 97Table 73. Three actions from the 2016 Plan have been carried over into the Town's updated mitigation strategy.

Table 97. 2021 Mitigation Actions

ID	Organization	Action
2021-24	1-Erie	County Line Rd, Tellane to Cheeseman
2021-25	2- Erie	Coal Creek Improvements Reach 1
2021-26	3-Erie	Coal Creek Improvements reach 2
2021-27	4-Erie	Coal Creek Improvements reach 3
2021-28	5-Erie	Old Town Drainage Improvements
2021-29	6-Erie	Zone 3 Storage Tank
2021-30	7-Erie	Well Project
2021-31	8-Erie	Zone 2 Water System Improvements
2021-32	9-Erie	Zone 3 Storage Tank
2021-33	10-Erie	Zone 3 Waterline Improvements
2021-34	11-Erie	Erie Parkway & WCR 7 Intersection Improvements
2021-35	12-Erie	Signal Communications Project

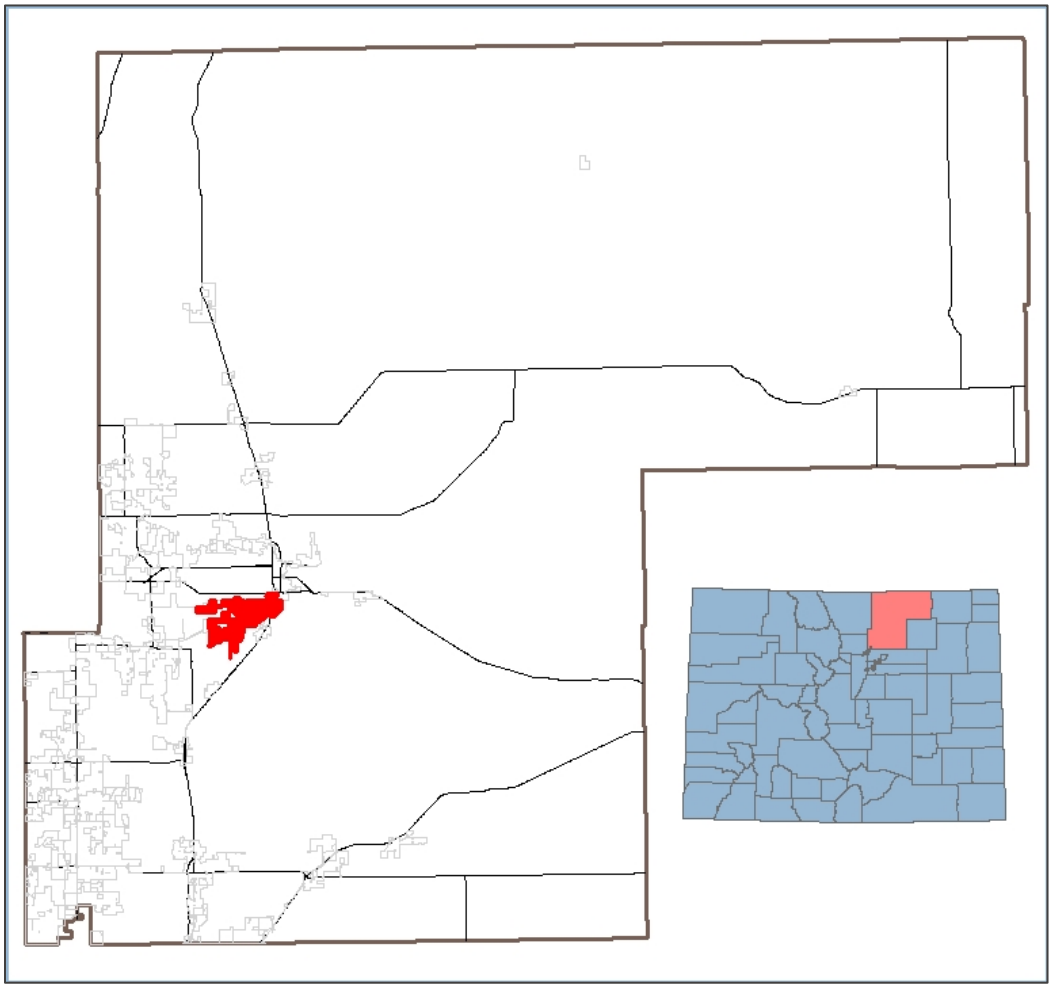
7.5 City of Evans

In the current City of Evans Comprehensive Plan, the City adopted a set of Strategic Priorities which encompasses their principles, informs their goals and guides their actions. These priorities are:

- Economic Development
- Infrastructure Development
- Regional Leadership
- Public Safety

7.5.1 Community Profile

The City of Evans is located in northern Colorado at the crossroads of US Highway 85 and US Highway 34. Evans is located just south of Greeley and was once the County seat of Weld County. Evans is the second most populated municipality in the County with a population of 21,205 according to the US Census Bureau (2019).



The table below summarizes key demographic and development related characteristics of the City of Evans.

Table 98. City of Evans Demographics

Evans	Colorado	
21,205	5,758,736	Population, 2019
14.6%	14.5%	Population, % change April 1, 2010 to July 1, 2019
8.9%	5.8%	% Population under 5 years, 2019
29.8%	21.9%	% Population under 19 years, 2019
6.6%	14.6%	% Population 65 years and over, 2019
62.0%	64.9%	Homeownership Rate, 2019
3.04	2.56	Persons Per Household, 2019
$58,405	$68,811	Median Household Income, 2014- 2018
12.7%	9.3%	Persons below poverty level, %, 2014- 2018
6.6%	7.3%	% Population under 65 years, with a disability 2014-2018
30.7%	17%	Language other than English spoken at home, % age 5+, 2014- 2018

Source: US Census Bureau

The City of Evans has a diverse economy, which is primarily driven by construction, retail trade and personal & professional services. The City has focused its infrastructure projects on upgrading outdated infrastructure and redeveloping roads to accommodate for the growth and increased traffic.

7.5.2 Risk and Vulnerability Assessment

Table 99 summarizes the results of the RF ranking exercise performed by the City of Evans. The results represent the relative risk of different hazards across the municipality from the perspective of local stakeholders and subject matter experts. Note the final RF Ranking values in this table include the weighting factors detailed in the Risk Assessment chapter of this Plan.

Table 99. Risk Factor Results for Evans

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	RF Ranking
Agricultural Hazards	1	0.5	2	1	4	1.4
Cyber Hazards	3	4	2	4	4	3.3
Drought	3	3	4	1	4	3.1
Earthquake	1	1	3	2	1	1.5
Extreme Temps.	3	1	1	1	2	1.7
Flood	2	4	2	1	4	2.7
Hazmat Release	3	2	2	4	3	2.6
Land Subsidence	1	1	1	1	1	1.0
Prairie Fire	2	1	2	1	1	1.5
Public Health Hazards	4	4	3	1	4	3.5
Severe Storms	3	3	3	4	1	2.9
Tornado & Wind	3	3	3	4	1	2.9

The conclusions drawn from the qualitative assessment are organized into three categories shown in the following table and provide a summary of hazard risk for Evans as a whole - based on High, Moderate, or

Low risk designations. This process helped frame ongoing planning discussions around local and regional hazard risks and assisted with the development of the Plan's updated mitigation strategy.

Table 100. Hazard Risk Conclusions for Evans

HIGH RISK (2.5 or higher)	**Cyber Hazards, Drought, Flood, Hazmat Release, Public Health Hazards, Severe Storms, Tornado & Straight-Line Wind**
MODERATE RISK (2.0 – 2.4)	
LOW RISK (1.9 or lower)	**Agricultural Hazards, Earthquake, Extreme Temperatures, Land Subsidence, Prairie Fire**

Since the 2016 Plan, the City has decreased the assessed risk from earthquake, extreme temperatures, land subsidence, and prairie fire to Low Risk (all formerly High). Besides the newly added hazards of agricultural hazards and cyber hazards, all other risk rankings remain the same.

The following sections highlight the City of Evan's High Risk hazards and include any specific content relevant to the City. They are intended to supplement information included in each hazard profile in the main body of this Plan.

7.5.2.1 Cyber Hazards

For any municipality, vulnerability to cyber hazards does not vary from that of the County as a whole. While there are no documented cyber events impacting Evans, the threat of this hazard is continually increasing. There are no previous events to document specific to the City of Evans. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.5.2.2 Drought

The community vulnerability to drought is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to this hazard. There are no previous events to document specific to the City of Evans. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.5.2.3 Flood (including Dam & Levee Failure)

Flood is a very localized hazard and vulnerability is unique for each municipality. There are no previous events to document specific to Evans.

The City of Evans' overall vulnerability to flood is not noticeably different from the rest of the County. Evans has 159 address points located in the Special Flood Hazard Area (SFHA). This equates to 1.7% of all address points for the City, as compared to 1.6% of Countywide addresses located in the SFHA.

Flood events can also occur as a result of dam or levee failure. In these cases, flood waters may not follow the typical floodplains mapped as the SFHA.

Overall vulnerability to flooding in dam inundation areas is increased for the City of Evans, where 14.0% of address points (1,332) are located within these dam inundation areas. This is a larger percentage of structures at risk, as compared to 1.0% of Countywide addresses located in these areas.

Additionally, the City is the first jurisdiction downstream from eight dams. Two of these have a hazard classification of Significant or High, both of which have Emergency Action Plans (EAPs). Additional information pertaining to dams can be referenced at the State's Dam Safety website: https://dwr.state.co.us/Tools/DamSafety/Dams .

Overall vulnerability to flooding in areas protected by known levees is increased for the City of Evans, where 9.5% of address points (904) are located within levee protected areas. This is a larger percentage of structures at risk, as compared to 1.6% of Countywide addresses located in protected areas.

It is important to note that this analysis is only as good as best available data allows. Current floodplains, dam inundation areas, and areas protected by levees may not currently map all hazard areas. Additionally, mapped hazard areas may be dated and in need of updated mapping and analysis.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.5.2.4 Hazmat Release

Vulnerability to hazmat release is increased for the City of Evans, mainly due to the location of a CDOT hazardous materials route through the community. Additionally, railroads which span across Evans present their own increased risk for hazmat release. As is true for the entire County, the presence of any businesses that store hazardous materials also increases the risk for these types of events.

Based on data supplied by the Pipeline and Hazardous Materials Safety Administration's (PHMSA) Incident Reports Database there have been 35 events that have occurred within Evans between 1991 and 2019. All events involved leakage, spillage or damage due to improper transportation preparation or handling.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.5.2.5 Public Health Hazards

Vulnerability to public health hazards is not expected to be noticeably different from the rest of the County. Individuals at a higher risk to this hazard include the aging adult population, those with a chronic illness, such as diabetes, asthma, coronary heart disease, and those who are obese or overweight. Other populations at risk include children, those in poverty and those with a disability. This data is collected at census tract level by the Centers for Disease Control (CDC) and is unavailable at a municipality level. The data by census tract can be found in the Colorado Department of Health and Environment Open Data database here.

Future occurrences are expected to mirror that of the County. There are no previous events to document specific to the City of Evans. Refer to Chapter 5 – Risk Assessment of this Plan for additional details, including a summary of the higher risk population demographics for Weld County and the State.

7.5.2.6 Severe Storm (including Hail, Lightning, & Winter Storm)

Vulnerability to severe storm, which includes hail, lightning, and winter storm, is not noticeably different from the rest of the County. The City of Evan's more densely developed areas experience the greatest risk, in addition to potential greater losses to the agriculture sector. Any structures not constructed to meet recent building codes experience the greatest risk from structural damages.

According to the NOAA's Storm Events Database, between 2015 and 2020, the City of Evans has had five severe storm events. These events were reports of hail, which ranged in size from 0.88 inches to

1.5 inches. None of these events resulted in reported damage to property or crops and no injuries or deaths.

No other events for severe storm, specific to Evans, were recorded over this time period.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.5.2.7 Tornado & Straight-Line Wind

Vulnerability to tornado & straight-line wind is not noticeably different from the rest of the County. Evans' more densely developed areas experience the greatest risk, in addition to any structures not constructed to meet recent building codes.

Between 2015 and 2020, there were no reports of occurrences specific to Evans. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.5.3 Capabilities Assessment

The capability assessment examines the ability of the City of Evans to implement and manage the comprehensive mitigation strategy laid out in this Plan. The strengths, weaknesses, and resources of the community are identified here as a means for evaluating and maintaining effective and appropriate management of the City's hazard mitigation program.

Planning and regulatory capabilities are powerful tools for implementing hazard mitigation. The City currently utilizes or has implemented most of these capabilities shown in Table 101. It is important for all municipalities to regularly review each of these tools, to identify opportunities for further risk reduction efforts.

Table 101. Planning & Regulatory Capabilities

Mitigation Capability	Utilized?	Comments
Comprehensive, Master, or General Plan	Yes	Currently being updated, completion 2021
Capital Improvement Program or Plan (CIP)	Yes	Updated 2020/Annually
Floodplain Management Plan	Yes	Enforced by ordinance, Todd Hepworth
Stormwater Program / Plan	Yes	Updated 2020
Community Wildfire Protection Plan (CWPP)	No	Under jurisdiction of Evans Fire District
Erosion / Sediment Control Program	Yes	Part of MS4 updated in 2020
Economic Development Plan	Yes	Included in master planning effort
Other:	Yes	THIRA/HIRA included in master plan
Building Codes (Year)	Yes	Current IBC 2018
Site Plan Review Requirements	Yes	Part of land development code/design requirements
Other:	No	
Zoning Ordinance (Land Use)	Yes	Part of code and comprehensive plan
Subdivision Ordinance	Yes	Part of code and comprehensive plan

Mitigation Capability	Utilized?	Comments
National Flood Insurance Program (NFIP) Participant	Yes	Part of comprehensive plan/land use regulations
Flood Insurance Study / Flood Insurance Rate Map / DFIRM	Yes	2021 Update in process
Floodplain Ordinance	Yes	Current with FEMA requirements
Elevation Certificates for Floodplain Development	Yes	
Community Rating System (CRS) Participant	No	Under consideration
Open Space / Conservation Program	Yes	Part of development - % of open space preservation
Growth Management Ordinance	Yes	CPA with Weld County, IGA with Evans, Greeley, Kersey
Stormwater Ordinance	Yes	Ties to MS4 Program
Other Hazard Ordinance (steep slope, wildfire, snow loads, etc.)	Yes	Included in Master Plan
Other:	Yes	Weight limit posting on bridges

Available resources including staff, municipal groups, and technology are all vital for a community to be able to implement hazard mitigation. Evans is fortunate to have most all of these capabilities identified in Table 102.

Table 102. Administrative & Technical Capabilities

Mitigation Capability	Utilized?	Comments
Planning Commission	Yes	Meets monthly
Mitigation Planning Committee	Yes	Informal group of partners
Maintenance Programs (tree trimming, clearing drainage, etc.)	Yes	Normal daily activities
Emergency Manager	Yes	Part time/temporary
Building Official	Yes	Contract
Floodplain Administrator	Yes	Todd Hepworth
Community Planner	Yes	Lauren Richardson
Transportation Planner	No	
Civil Engineer	Yes	City Engineer with two Civil Engineer Reports
GIS Capability	Yes	ARCGIS - Anna Jereb
Resiliency Planner	No	
Other:	Yes	Economic Development Manager/Community Development Director/Neighborhood Services/Compliance
Warning Systems / Services (flood)	No	
Warning Systems / Services (other / multi hazard)	Yes	Code Red, IPAWS, Reverse 911
Grant Writing / Management	Yes	Finance/Comm. Dev./Engineering/Operations
Other:	Yes	City Attorney, Staffed EOC

The ability of a community to implement a comprehensive mitigation strategy is largely dependent on available funding. These related municipal capabilities are outlined in Table 103 and show that Evans utilizes a broad range of financial tools that can support mitigation activities.

Table 103. Financial Capabilities

Mitigation Capability	Utilized?	Comments
Levy for Specific Purposes with Voter Approval	Yes	Submitted as a ballot measure as needed
Utilities Fees	Yes	Enterprise funds
System Development / Impact Development Fee	Yes	Part of City fee schedule
General Obligation Bonds to Incur Debt	Yes	City does not currently have any. In order to obtain voter approval required.
Special Tax Bonds to Incur Debt	Yes	City does not currently have any. In order to obtain voter approval required.
Open Space / Conservation Fund	Yes	Conservation trust fund in place
Stormwater Utility Fees	Yes	Updated 2019
Capital Improvement Project Funding	Yes	CIP funds included annually in budget
Community Development Block Grants (CDBG)	Yes	Through Weld County/State
Withheld spending in hazard-prone areas	No	
Other:	Yes	CDOT/GOCO/State Parks/Safe Routes to School etc.

Education and outreach are important capabilities that allow a community to continue the conversation with their public regarding hazard risk and opportunities to mitigate. Table 104 shows that Evans does leverage some of these capabilities and is currently working on expanding these efforts.

Table 104. Education & Outreach Capabilities

Mitigation Capability	Utilized?	Comments
Public Hazard Education / Outreach Program	Yes	Various community outreach programs
Local Citizen Groups That Communicate Hazard Risks	No	
Firewise	No	
NOAA StormReady Program	Yes	Storm Spotter Training/NWS Spotters
Other:	No	

7.5.4 Mitigation Actions

The new mitigation actions identified by the City during the Plan update are included in Table 105Table 73. One action from the 2016 Plan have been carried over into the City's updated mitigation strategy.

Table 105. 2021 Mitigation Actions

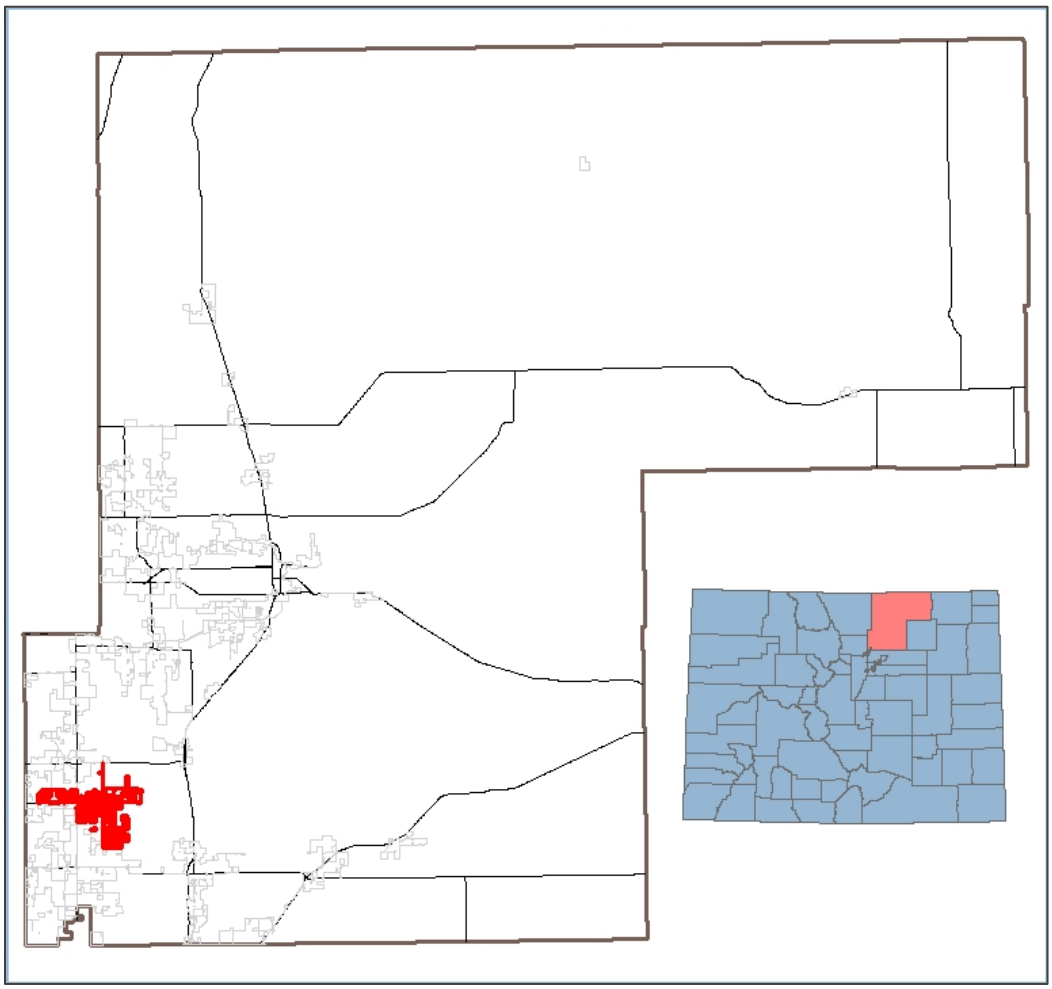
ID	Organization	Action
2021-36	1-Evans	31st St Stormwater Outfall
2021-37	2-Evans	Bay at the Landings Inlet Flood Mitigation
2021-38	3-Evans	Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning

7.6 Town of Firestone

"The Town of Firestone is a unique community of citizens, businesses, and governments that are united in creating a stable, safe, prosperous, and healthful environment in which to live, work, worship, learn, recreate and exercise the rights and freedoms provided by the United States Constitution."
– Firestone Master Plan 2013

7.6.1 Community Profile

The Town of Firestone is located on the northern edge of the Denver-Boulder metropolitan area along Interstate 25, midway between Denver and Fort Collins, just east of Longmont. Firestone's boundary is approximately 7,774 acres with a planning area of about 56 square miles. The Town of Firestone offers residents the charm of a small town along with easy access to the Rocky Mountains, front range communities, parks, trails, schools, community events, and more.



Firestone is part of the Carbon Valley area which also includes the Towns of Frederick and the City of Dacono. The three municipalities share a Chamber of Commerce and a Park and Recreation District. They are represented in the Carbon Valley Emergency Management Agency, which also includes the Frederick Fire Protection District and Mountain View Fire Rescue. The municipalities work with their specific stakeholders in determining risks and vulnerabilities, however the unique agreement between them is important to planning efforts.

Table 106 summarizes key demographic and development related characteristics of the Town of Firestone.

Table 106. Town of Firestone Demographics

Firestone	Colorado	
16,177	5,758,736	Population, 2019
58.6%	14.5%	Population, % change April 1, 2010 to July 1, 2019
7.9%	5.8%	% Population under 5 years, 2019
30.0%	21.9%	% Population under 19 years, 2019
9.2%	14.6%	% Population 65 years and over, 2019
88.6%	64.9%	Homeownership Rate, 2019
3.09	2.56	Persons Per Household, 2019
$97,102	$68,811	Median Household Income, 2014- 2018
3.6%	9.3%	Persons below poverty level, %, 2014- 2018
6.7%	7.3%	% Population under 65 years, with a disability 2014-2018
10.4%	17%	Language other than English spoken at home, % age 5+, 2014- 2018

Source: US Census Bureau

7.6.2 Risk and Vulnerability Assessment

Table 107 summarizes the results of the RF ranking exercise performed by the Town of Firestone. The results represent the relative risk of different hazards across the municipality from the perspective of local stakeholders and subject matter experts. Note the final RF Ranking values in this table include the weighting factors detailed in the Risk Assessment chapter of this Plan.

Table 107. Risk Factor Results for Firestone

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	RF Ranking
Agricultural Hazards	3	3	4	1	4	3.1
Cyber Hazards	3	4	4	4	4	3.7
Drought	3	2	4	1	4	2.8
Earthquake	1	2	4	1	1	1.9
Extreme Temps.	2	2	2	1	3	2.0
Flood	3	3	4	2	4	3.2
Hazmat Release	3	2	2	3	2	2.4
Land Subsidence	1	1	1	2	1	1.1
Prairie Fire	3	2	1	4	3	2.4
Public Health Hazards	4	2	4	1	3	3.0
Severe Storms	4	3	4	3	2	3.4
Tornado & Wind	3	4	2	4	4	3.3

The conclusions drawn from the qualitative assessment are organized into three categories shown in the following table and provide a summary of hazard risk for Firestone as a whole - based on High, Moderate, or Low risk designations. This process helped frame ongoing planning discussions around

local and regional hazard risks and assisted with the development of the Plan's updated mitigation strategy.

Table 108. Hazard Risk Conclusions for Firestone

HIGH RISK (2.5 or higher)	**Agricultural Hazards, Cyber Hazards, Drought, Flood, Public Health Hazards, Severe Storms, Tornado & Straight-Line Wind**
MODERATE RISK (2.0 – 2.4)	**Extreme Temperatures, Hazmat Release, Prairie Fire**
LOW RISK (1.9 or lower)	**Earthquake, Land Subsidence**

Since the 2016 Plan, the Town has increased the assessed risk from drought and public health hazards to High Risk (both formerly Low). Severe storms and tornado & straight-line wind also elevated from Moderate to High Risk. Besides the newly added hazards of agricultural hazards and cyber hazards, all other risk rankings remain the same.

The following sections highlight the Town of Firestone's High Risk hazards and include any specific content relevant to the Town. They are intended to supplement information included in each hazard profile in the main body of this Plan.

7.6.2.1 Agricultural Hazards (including Disease & Pests)

Vulnerability to agricultural hazards is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to these hazards. There are no previous events to document specific to the Town of Firestone. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.6.2.2 Cyber Hazards

For any municipality, vulnerability to cyber hazards does not vary from that of the County as a whole. While there are no documented cyber events impacting the Town of Firestone, the threat of this hazard is continually increasing. There are no previous events to document specific to Firestone. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.6.2.3 Drought

The community vulnerability to drought is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to this hazard. There are no previous events to document specific to the Town of Firestone. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.6.2.4 Flood (including Dam & Levee Failure)

Flood is a very localized hazard and vulnerability is unique for each municipality. There are no previous events to document specific to the Town of Firestone.

The Town of Firestone's overall vulnerability to flood is noticeably different from the rest of the County. Firestone has 51 address points located in the Special Flood Hazard Area (SFHA). This

equates to 0.8% of all address points for the Town, as compared to 1.6% of Countywide addresses located in the SFHA.

Flood events can also occur as a result of dam or levee failure. In these cases, flood waters may not follow the typical floodplains mapped as the SFHA.

Overall vulnerability to flooding in dam inundation areas is increased for Firestone, where 6.8% of address points (434) are located within these dam inundation areas. This is a larger percentage of structures at risk, as compared to 1.0% of Countywide addresses located in these areas.

Additionally, the Town is the first jurisdiction downstream from one dam. It has a hazard classification of Significant and does have an Emergency Action Plan (EAP). Additional information pertaining to dams can be referenced at the State's Dam Safety website: https://dwr.state.co.us/Tools/DamSafety/Dams .

The Town of Firestone's overall vulnerability to flooding in areas protected by known levees is significantly different from the rest of the County. Firestone has no address points located within levee protected areas, compared to 1.6% of Countywide addresses located in these areas.

It is important to note that this analysis is only as good as best available data allows. Current floodplains, dam inundation areas, and areas protected by levees may not currently map all hazard areas. Additionally, mapped hazard areas may be dated and in need of updated mapping and analysis.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.6.2.5 Public Health Hazards

Vulnerability to public health hazards is not expected to be noticeably different from the rest of the County. Individuals at a higher risk to this hazard include the aging adult population, those with a chronic illness, such as diabetes, asthma, coronary heart disease, and those who are obese or overweight. Other populations at risk include children, those in poverty and those with a disability. This data is collected at census tract level by the Centers for Disease Control (CDC) and is unavailable at a municipality level. The data by census tract can be found in the Colorado Department of Health and Environment Open Data database here.

Future occurrences are expected to mirror that of the County. There are no previous events to document specific to Firestone. Refer to Chapter 5 – Risk Assessment of this Plan for additional details, including a summary of the higher risk population demographics for Weld County and the State.

7.6.2.6 Severe Storm (including Hail, Lightning, & Winter Storm)

Vulnerability to severe storm, which includes hail, lightning, and winter storm, is not noticeably different from the rest of the County. Firestone's more densely developed areas experience the greatest risk, in addition to potential greater losses to the agriculture sector. Any structures not constructed to meet recent building codes experience the greatest risk from structural damages.

According to the NOAA's Storm Events Database, between 2015 and 2020, the Town of Firestone has had fourteen severe storm events. Twelve of these events resulted in reports of hail, which ranged in size from 0.75 inches to 1.75 inches. None of these events resulted in reported damage to property or crops and no injuries or deaths.

Two events were reported as thunderstorm winds with magnitudes of 52 mph and 70 mph. One storm uprooted trees, but for both events there was no damage to property or crops and no injuries or deaths in Firestone.

No other events for severe storm, specific to Firestone, were recorded over this time period.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.6.2.7 Tornado & Straight-Line Wind

Vulnerability to tornado & straight-line wind is not noticeably different from the rest of the County. Firestone's more densely developed areas experience the greatest risk, in addition to any structures not constructed to meet recent building codes.

Between 2015 and 2020, there were no reports of occurrences specific to Firestone. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.6.3 Capabilities Assessment

The capability assessment examines the ability of the Town of Firestone to implement and manage the comprehensive mitigation strategy laid out in this Plan. The strengths, weaknesses, and resources of the community are identified here as a means for evaluating and maintaining effective and appropriate management of the Town's hazard mitigation program.

Planning and regulatory capabilities are powerful tools for implementing hazard mitigation. The Town currently utilizes or has implemented many of these capabilities shown in Table 109. It is important for all municipalities to regularly review each of these tools, to identify opportunities for further risk reduction efforts.

Table 109. Planning & Regulatory Capabilities

Mitigation Capability	Utilized?	Comments
Comprehensive, Master, or General Plan	Yes	
Capital Improvement Program or Plan (CIP)	Yes	
Floodplain Management Plan	No	
Stormwater Program / Plan	Yes	Stormwater Coordinator on staff overseeing the MS4 Program Pollution Prevention Strategy, along with SOP's for departments
Community Wildfire Protection Plan (CWPP)	No	
Erosion / Sediment Control Program	Yes	MS4 Program for all municipal construction activities, landscaped areas, street maintenance and utility and storm sewer replacement and construction
Economic Development Plan	No	
Other:	No	
Building Codes (Year)	Yes	Currently 2012
Site Plan Review Requirements	Yes	Firestone Development Code

Mitigation Capability	Utilized?	Comments
Other:	No	
Zoning Ordinance (Land Use)	No	No Ordinance, but covered in the Firestone Developoment Code
Subdivision Ordinance	No	No Ordinance, but covered in the Firestone Developoment Code
National Flood Insurance Program (NFIP) Participant	Yes	
Flood Insurance Study / Flood Insurance Rate Map / DFIRM	Yes	
Floodplain Ordinance	Yes	No Ordinance, but covered in the Firestone Developoment Code
Elevation Certificates for Floodplain Development	Yes	Firestone Developoment Code
Community Rating System (CRS) Participant	No	
Open Space / Conservation Program	Yes	Future adoption of Parks Master Plan. Firestone Developoment Code addresses also
Growth Management Ordinance	No	No Ordinance, but regulated through Master Plan and Firestone Developoment Code
Stormwater Ordinance	Yes	Adopted February 2020
Other Hazard Ordinance (steep slope, wildfire, snow loads, etc.)	No	No Ordinance, but covered in the Firestone Developoment Code
Other:	No	

Available resources including staff, municipal groups, and technology are all vital for a community to be able to implement hazard mitigation. Firestone is fortunate to have most all of these capabilities identified in Table 110.

Table 110. Administrative & Technical Capabilities

Mitigation Capability	Utilized?	Comments
Planning Commission	Yes	Firestone Planning & Zoning Commission is a seven-member commission that recommends various development matters to the BOT for consideration
Mitigation Planning Committee	No	
Maintenance Programs (tree trimming, clearing drainage, etc.)	Yes	Parks and Stormwater Maintenance Staff
Emergency Manager	Yes	IGA with Carbon Valley Emergency Management Agency, FTE EM Coordinator
Building Official	Yes	Currently contract with SAFEbuilt and bringing building official in house within next 2 years.
Floodplain Administrator	Yes	Matt Wiederspahn
Community Planner	No	The Town of Firestone has a Planning Department (Sr. Planners, Planning Manager and Director)
Transportation Planner	No	Town Engineer on staff overseeing transportation and upcoming Transportation Master Plan

Mitigation Capability	Utilized?	Comments
Civil Engineer	Yes	Civil engineer on staff
GIS Capability	Yes	GIS coordinator on staff
Resiliency Planner	No	
Other:	No	
Warning Systems / Services (flood)	No	
Warning Systems / Services (other / multi hazard)	Yes	CodeRed Emergency Notification Service and Blackboard Connect for updates and emergency alerts
Grant Writing / Management	No	
Other:	No	

The ability of a community to implement a comprehensive mitigation strategy is largely dependent on available funding. These related municipal capabilities are outlined in Table 111and show that Firestone utilizes a broad range of financial tools that can support mitigation activities.

Table 111. Financial Capabilities

Mitigation Capability	Utilized?	Comments
Levy for Specific Purposes with Voter Approval	Yes	Occupation/Lodging Tax
Utilities Fees	Yes	Water/Street lights based on rate studies
System Development / Impact Development Fee	Yes	Impact Fees charged by Planning on permit process
General Obligation Bonds to Incur Debt	No	
Special Tax Bonds to Incur Debt	Yes	2014 Revenue Bonds
Open Space / Conservation Fund	Yes	Conservation Trust from State
Stormwater Utility Fees	Yes	Stormwater fees based on rate studies
Capital Improvement Project Funding	Yes	1% Sales tax limited to parks and streets
Community Development Block Grants (CDBG)	No	
Withheld spending in hazard-prone areas	No	
Other:	No	

Education and outreach are important capabilities that allow a community to continue the conversation with their public regarding hazard risk and opportunities to mitigate. Table 112 shows that Firestone could benefit by expanding upon these capabilities.

Table 112. Education & Outreach Capabilities

Mitigation Capability	Utilized?	Comments
Public Hazard Education / Outreach Program	Yes	Hazard and Preparedness Education and Outreach in partnership with CVEMA

Mitigation Capability	Utilized?	Comments
Local Citizen Groups That Communicate Hazard Risks	No	
Firewise	Yes	Through Frederick-Firestone Fire Protection District Community Outreach
NOAA StormReady Program	No	
Other:		

7.6.4 Plan Maintenance and Implementation

The Town of Firestone has developed a Plan Maintenance and Implementation Strategy outlining their method and schedule for keeping the plan current. The Implementation Strategy below also includes a discussion of how the Town will continue public participation in the plan maintenance process.

- The Carbon Valley Emergency Manager will facilitate an annual review of the hazard mitigation plan and actions with Town of Firestone police department, departmental staff, leadership, and the Town Board.
- Hazard mitigation will be evaluated by the Town annually in conjunction with project planning and the annual budget.

7.6.5 Integrating Hazard Mitigation into Local Planning

The Town also identified ways to integrate hazard mitigation into their local planning mechanisms and policies. Following are the specific integration strategies identified by the Town of Firestone.

- The Town will integrate hazard mitigation actions into our Capital Improvements Plan by emphasizing projects that mitigate the impacts of our highest risk hazards.

7.6.6 Mitigation Actions

The new mitigation actions identified by the Town during the Plan update are included in Table 113.

Table 113. 2021 Mitigation Actions

ID	Organization	Action
2021-39	1-Firestone	Installation of Infrastructure Transmission Technologies
2021-100	2-Firestone	Godding Hollow Tri-Town Basin Outfall Improvements
2021-101	3-Firestone	Community Connect Program

7.7 City of Fort Lupton

"The City of Fort Lupton will be a premier destination of the Front Range. Well positioned to capture growth and investment on the periphery of the Denver area, Fort Lupton will have numerous opportunities to shape its future. Combining quality living with a variety of services and amenities, the City will become a prominent community within Colorado."

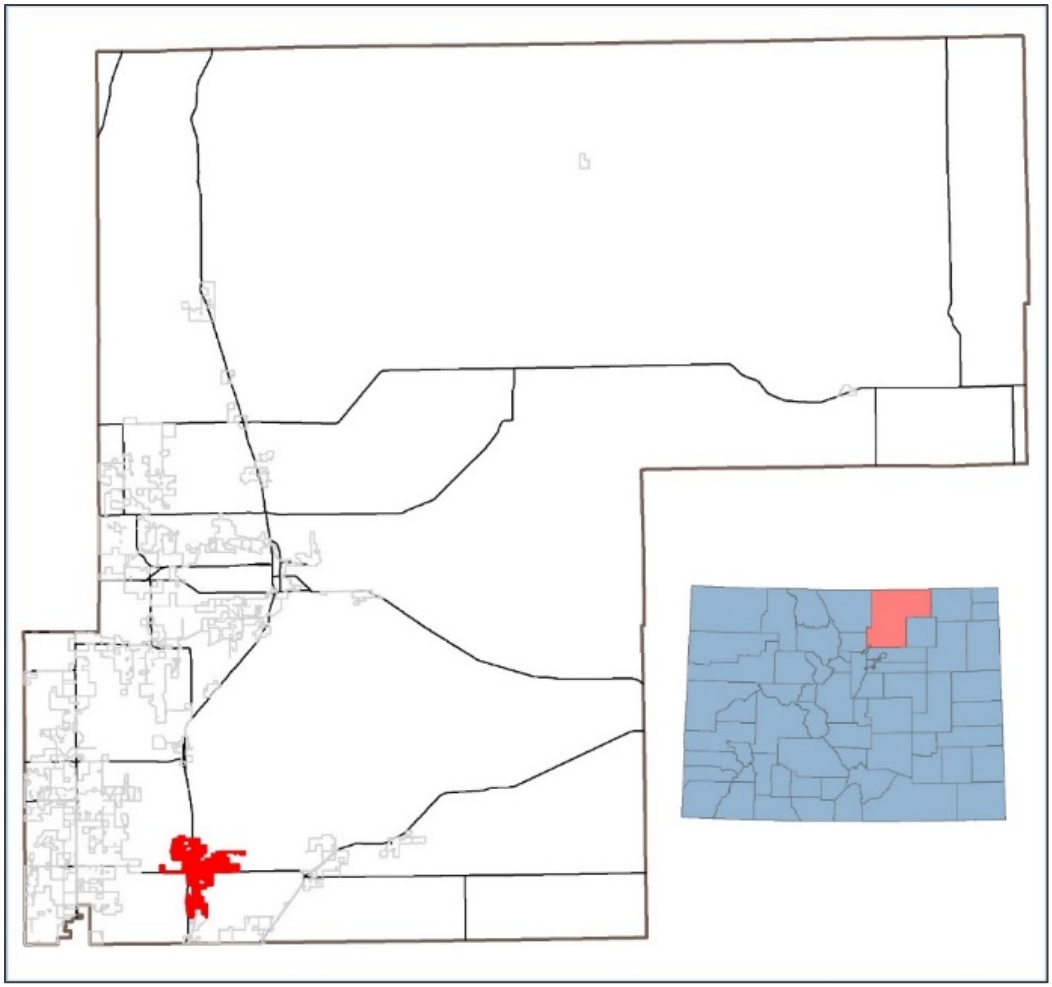
– City of Fort Lupton Comprehensive Plan 2018

One of the primary goals of Fort Lupton is to become a sustainable city that provides ample opportunities for residents to live, learn, work and play. The Comprehensive Plan addresses the following areas in the work toward achieving that goal:

- Growth and Development
- Subarea Plans
- Regional Presence
- Transportation and Mobility
- Parks, Open Space & Environmental Features
- Public Facilities and Services
- Implementation

7.7.1 Community Profile

The City of Fort Lupton is located along the South Platte River, approximately 26 miles north of Denver, 23 miles south of Greeley, and 24 miles east of Boulder. Fort Lupton is positioned at the intersection of US Highway 85 and Colorado Route 52, providing access to Interstate 25 to the west and Interstate 76 to the east as well as the greater Denver and Front Range regions.



The table below summarizes key demographic and development related characteristics of the City of Fort Lupton.

Table 114. City of Fort Lupton Demographics

Fort Lupton	Colorado	
8,317	5,758,736	Population, 2019
12.2%	14.5%	Population, % change April 1, 2010 to July 1, 2019
8.1%	5.8%	% Population under 5 years, 2019
28.9%	21.9%	% Population under 19 years, 2019
10.2%	14.6%	% Population 65 years and over, 2019
72.0%	64.9%	Homeownership Rate, 2019
3.09	2.56	Persons Per Household, 2019
$63,548	$68,811	Median Household Income, 2014- 2018
7.7%	9.3%	Persons below poverty level, %, 2014- 2018
11.2%	7.3%	% Population under 65 years, with a disability 2014-2018
34.2%	17%	Language other than English spoken at home, % age 5+, 2014- 2018

Source: US Census Bureau

7.7.2 Risk and Vulnerability Assessment

Table 115 summarizes the results of the RF ranking exercise performed by the City of Fort Lupton. The results represent the relative risk of different hazards across the municipality from the perspective of local stakeholders and subject matter experts. Note the final RF Ranking values in this table include the weighting factors detailed in the Risk Assessment chapter of this Plan.

Table 115. Risk Factor Results for Fort Lupton

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	RF Ranking
Agricultural Hazards	1	1	2	1	4	1.5
Cyber Hazards	3	2	1	4	4	2.5
Drought	3	2	4	1	4	2.8
Earthquake	1	3	4	4	2	2.6
Extreme Temps.	2	2	4	1	4	2.5
Flood	2	2	2	3	3	2.2
Hazmat Release	3	2	1	4	2	2.3
Land Subsidence	1	1	1	4	3	1.5
Prairie Fire	2	2	2	4	2	2.2
Public Health Hazards	2	3	4	1	4	2.8
Severe Storms	3	3	3	4	1	2.9
Tornado & Wind	3	3	4	4	1	3.1

The conclusions drawn from the qualitative assessment are organized into three categories shown in the following table and provide a summary of hazard risk for Fort Lupton as a whole - based on High, Moderate, or Low risk designations. This process helped frame ongoing planning discussions around local and regional hazard risks and assisted with the development of the Plan's updated mitigation strategy.

Table 116. Hazard Risk Conclusions for Fort Lupton

HIGH RISK (2.5 or higher)	**Cyber Hazards, Drought, Earthquake, Extreme Temperatures, Public Health Hazards, Severe Storms, Tornado & Straight-Line Wind**
MODERATE RISK (2.0 – 2.4)	**Flood, Hazmat Release, Prairie Fire**
LOW RISK (1.9 or lower)	**Agricultural Hazards, Land Subsidence**

Since the 2016 Plan, the City has increased the assessed risk from earthquake and tornado & straight-line winds to High Risk (both formerly Moderate). The City has also increased the assessed risk from extreme temperatures and severe storm to High Risk (both formerly Low). Besides the newly added hazards of agricultural hazards and cyber hazards, all other risk rankings remain the same.

The following sections highlight the City of Fort Lupton's High Risk hazards and include any specific content relevant to the City. They are intended to supplement information included in each hazard profile in the main body of this Plan.

7.7.2.1 Cyber Hazards

For any municipality, vulnerability to cyber hazards does not vary from that of the County as a whole. While there are no documented cyber events impacting City of Fort Lupton, the threat of this hazard is continually increasing. There are no previous events to document specific to Fort Lupton. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.7.2.2 Drought

The community vulnerability to drought is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to this hazard. There are no previous events to document specific to City of Fort Lupton. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.7.2.3 Earthquake

Vulnerability to earthquake is not noticeably different from the rest of the County. The City of Fort Lupton's more densely developed areas experience the greatest risk, in addition to any structures not constructed to meet recent building codes. There are no previous events to document specific to Fort Lupton. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.7.2.4 Extreme Temperatures

Vulnerability to extreme temperatures is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to these hazards due to potential crop and livestock losses. Additionally, individuals at a higher risk to extreme temperatures include those with mobility issues, independent living difficulty, the elderly, low-income families, outdoor laborers, and those experiencing homelessness. Data for these demographics is collected at census tract level, however snapshot data for populations that can fluctuate drastically, such as the number of outdoor laborers and those experiencing homelessness is not included. These are still considerable populations in the County and City of Fort Lupton and local efforts to quantify these populations periodically can help with mitigation planning.

The data for high risk populations has been analyzed by Colorado Department of Public Health and Environment (CDPHE) and has been used to create Community Inclusions maps. These maps can be zoomed into specific census tracts for municipalities and communities, illustrating the population variances. Refer to Chapter 4 for examples of these maps for Weld County.

There are no previous events to document specific to the City of Fort Lupton. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.7.2.5 Public Health Hazards

Vulnerability to public health hazards is not expected to be noticeably different from the rest of the County. Individuals at a higher risk to this hazard include the aging adult population, those with a chronic illness, such as diabetes, asthma, coronary heart disease, and those who are obese or overweight. Other populations at risk include children, those in poverty and those with a disability. This data is collected at census tract level by the Centers for Disease Control (CDC) and is unavailable at a municipality level. The data by census tract can be found in the Colorado Department of Health and Environment Open Data database here.

Future occurrences are expected to mirror that of the County. There are no previous events to document specific to Fort Lupton. Refer to Chapter 5 – Risk Assessment of this Plan for additional details, including a summary of the higher risk population demographics for Weld County and the State.

7.7.2.6 Severe Storm (including Hail, Lightning, & Winter Storm)

Vulnerability to severe storm, which includes hail, lightning, and winter storm, is not noticeably different from the rest of the County. Fort Lupton's more densely developed areas experience the greatest risk, in addition to potential greater losses to the agriculture sector. Any structures not constructed to meet recent building codes experience the greatest risk from structural damages.

According to the NOAA's Storm Events Database, between 2015 and 2020, the City of Fort Lupton has had ten severe storm events. All of these events resulted in reports of hail, which ranged in size from 0.88 inches to 2 inches. None of these events resulted in reported damage to property or crops and no injuries or deaths.

No other events for severe storm, specific to Fort Lupton, were recorded over this time period.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.7.2.7 Tornado & Straight-Line Wind

Vulnerability to tornado & straight-line wind is not noticeably different from the rest of the County. Fort Lupton's more densely developed areas experience the greatest risk, in addition to any structures not constructed to meet recent building codes.

According to the NOAA's Storm Events Database, between 2015 and 2020, there was one (1) report of an EF0 tornado in Fort Lupton. The event did not cause damage to property or crops and no injuries or deaths.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.7.3 Capabilities Assessment

The capability assessment examines the ability of the City of Fort Lupton to implement and manage the comprehensive mitigation strategy laid out in this Plan. The strengths, weaknesses, and resources of the community are identified here as a means for evaluating and maintaining effective and appropriate management of the City's hazard mitigation program.

Planning and regulatory capabilities are powerful tools for implementing hazard mitigation. The City currently utilizes or has implemented some of these capabilities shown in Table 117. It is important for all municipalities to regularly review each of these tools, to identify opportunities for further risk reduction efforts.

Table 117. Planning & Regulatory Capabilities

Mitigation Capability	Utilized?	Comments
Comprehensive, Master, or General Plan	Yes	
Capital Improvement Program or Plan (CIP)	Yes	
Floodplain Management Plan	No	

Mitigation Capability	Utilized?	Comments
Stormwater Program / Plan	No	
Community Wildfire Protection Plan (CWPP)	Yes	
Erosion / Sediment Control Program	No	
Economic Development Plan	No	
Other:	No	
Building Codes (Year)	Yes	ICC FIRE CODE 2012
Site Plan Review Requirements	Yes	
Other:	No	
Zoning Ordinance (Land Use)	No	
Subdivision Ordinance	No	
National Flood Insurance Program (NFIP) Participant	Yes	
Flood Insurance Study / Flood Insurance Rate Map / DFIRM	Yes	
Floodplain Ordinance	Yes	
Elevation Certificates for Floodplain Development	No	
Community Rating System (CRS) Participant	No	
Open Space / Conservation Program	No	
Growth Management Ordinance	No	
Stormwater Ordinance	No	
Other Hazard Ordinance (steep slope, wildfire, snow loads, etc.)	No	
Other:	No	

Available resources including staff, municipal groups, and technology are all vital for a community to be able to implement hazard mitigation. Fort Lupton could benefit by developing the capabilities identified in Table 118.

Table 118. Administrative & Technical Capabilities

Mitigation Capability	Utilized?	Comments
Planning Commission	No	
Mitigation Planning Committee	No	
Maintenance Programs (tree trimming, clearing drainage, etc.)	No	
Emergency Manager	No	
Building Official	No	
Floodplain Administrator	Yes	
Community Planner	No	
Transportation Planner	No	
Civil Engineer	No	

Mitigation Capability	Utilized?	Comments
GIS Capability	No	
Resiliency Planner	No	
Other:	No	
Warning Systems / Services (flood)	Yes	CodeRed
Warning Systems / Services (other / multi hazard)	Yes	Local Sirens
Grant Writing / Management	Yes	Internal
Other:	No	

The ability of a community to implement a comprehensive mitigation strategy is largely dependent on available funding. These related municipal capabilities are outlined in Table 119 and show that Fort Lupton utilizes a range of financial tools that can support mitigation activities.

Table 119. Financial Capabilities

Mitigation Capability	Utilized?	Comments
Levy for Specific Purposes with Voter Approval	Yes	Until 2022 for Station 2
Utilities Fees	No	
System Development / Impact Development Fee	No	
General Obligation Bonds to Incur Debt	Yes	Station 2
Special Tax Bonds to Incur Debt	No	
Open Space / Conservation Fund	No	
Stormwater Utility Fees	No	
Capital Improvement Project Funding	Yes	
Community Development Block Grants (CDBG)	No	
Withheld spending in hazard-prone areas	No	
Other:	No	

Education and outreach are important capabilities that allow a community to continue the conversation with their public regarding hazard risk and opportunities to mitigate. Table 120 shows that Fort Lupton could benefit by expanding upon these capabilities.

Table 120. Education & Outreach Capabilities

Mitigation Capability	Utilized?	Comments
Public Hazard Education / Outreach Program	No	
Local Citizen Groups That Communicate Hazard Risks	No	

Mitigation Capability	Utilized?	Comments
Firewise	No	
NOAA StormReady Program	No	
Other:	Yes	Fire Safety

7.7.4 Mitigation Actions

The new mitigation actions identified by the City during the Plan update are included in Table 121. One action from the 2016 Plan has been carried over into the City's updated mitigation strategy.

Table 121. 2021 Mitigation Actions

ID	Organization	Action
2021-41	1-Fort Lupton	Warning Sirens
2021-42	2-Fort Lupton	Emergency Notification Signs
2021-43	3-Fort Lupton	Water Storage
2021-44	4-Fort Lupton	Well Inclusions
2021-45	5-Fort Lupton	Localized Flooding
2021-46	6-Fort Lupton	Emergency Shelter Generator

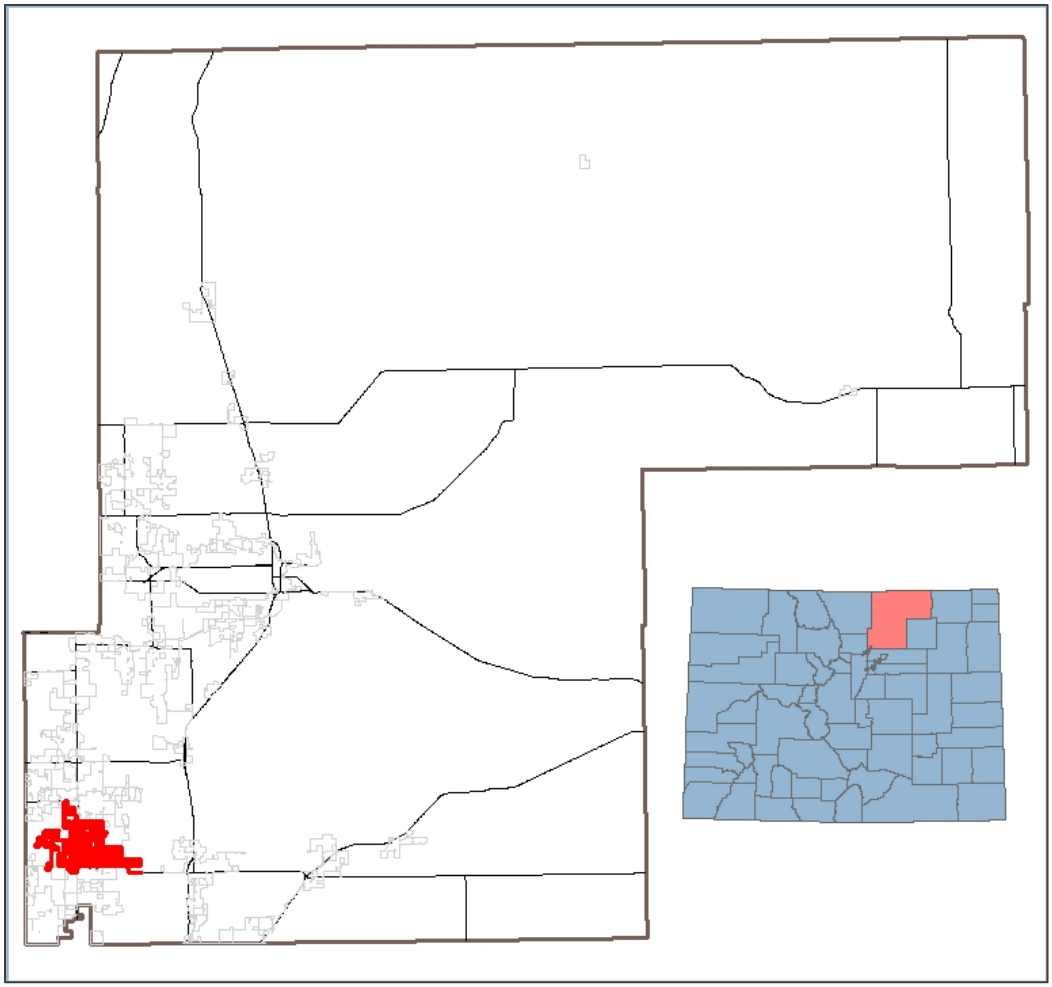
7.8 Town of Frederick

The 2016 Town of Frederick Comprehensive Plan includes statements of goals and objectives, which provide the framework for planning recommendations, policies and future projects and actions. These goals are:

- Growth & Development - Manage growth to accommodate future population expansion while supporting the preservation of the Town's rural and natural areas.
- Residential Neighborhoods - Promote a diverse housing inventory to accommodate Frederick's growing population while maintaining its existing rural character.
- Commercial & Industrial Areas - Leverage Frederick's strategic location and developable areas to promote employment growth and achieve a jobs-housing balance.
- Transportation & Mobility - Support a transportation system that accommodates the Town's growing population while ensuring safety and mobility for all modes of travel.
- Parks, Recreation & Open Space - Support a park and open space system that accommodates a range of recreational activities and meets the needs of the Frederick population.
- Community Facilities & Infrastructure - Provide infrastructure and services to maintain and support a high quality of life for residents and businesses through collaborative efforts and partnerships.
- Urban Design, Beautification & Tourism - Establish a coordinated program of urban design initiatives, infrastructure improvements, community services, and development standards that celebrate and promote the agricultural and mining heritage of Frederick, distinguishing it from other communities within the region.

7.8.1 Community Profile

The Town of Frederick is located 20 miles north of Denver and 20 miles east of Boulder. It encompasses more than 14 square miles and is bisected by I-25. Frederick is south of State Highway 119 and stretches for nearly six miles along State Highway 52.



The Town of Frederick is part of the Carbon Valley area which also includes the Town of Firestone and the City of Dacono. The three municipalities share a Chamber of Commerce and a Park and Recreation District. They are represented in the Carbon Valley Emergency Management Agency, which also includes the Frederick Fire Protection District and Mountain View Fire Rescue. The municipalities work with their specific stakeholders in determining risks and vulnerabilities, however the unique agreement between them is important to planning efforts.

The table below summarizes key demographic and development related characteristics of the Town of Frederick.

Table 122. Town of Frederick Demographics

Frederick	Colorado	
13,960	5,758,736	Population, 2019
61.1%	14.5%	Population, % change April 1, 2010 to July 1, 2019
8.3%	5.8%	% Population under 5 years, 2019
28.8%	21.9%	% Population under 19 years, 2019
9.1%	14.6%	% Population 65 years and over, 2019
91.6%	64.9%	Homeownership Rate, 2019
3.05	2.56	Persons Per Household, 2019

Frederick	Colorado	
$100,057	$68,811	Median Household Income, 2014- 2018
1.7%	9.3%	Persons below poverty level, %, 2014- 2018
4.5%	7.3%	% Population under 65 years, with a disability 2014-2018
8.4%	17%	Language other than English spoken at home, % age 5+, 2014- 2018

Source: US Census Bureau

7.8.2 Risk and Vulnerability Assessment

Table 123 summarizes the results of the RF ranking exercise performed by the Town of Frederick. The results represent the relative risk of different hazards across the municipality from the perspective of local stakeholders and subject matter experts. Note the final RF Ranking values in this table include the weighting factors detailed in the Risk Assessment chapter of this Plan.

Table 123. Risk Factor Results for Frederick

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	RF Ranking
Agricultural Hazards	3	3	4	1	4	3.1
Cyber Hazards	3	4	4	4	4	3.7
Drought	3	2	4	1	4	2.8
Earthquake	1	2	4	1	1	1.9
Extreme Temps.	2	2	2	1	3	2.0
Flood	3	3	4	2	4	3.2
Hazmat Release	3	2	2	3	2	2.4
Land Subsidence	1	1	1	2	1	1.1
Prairie Fire	3	2	1	4	3	2.4
Public Health Hazards	4	2	4	1	3	3.0
Severe Storms	4	3	4	3	2	3.4
Tornado & Wind	3	4	2	4	4	3.3

The conclusions drawn from the qualitative assessment are organized into three categories shown in the following table and provide a summary of hazard risk for Frederick as a whole - based on High, Moderate, or Low risk designations. This process helped frame ongoing planning discussions around local and regional hazard risks and assisted with the development of the Plan's updated mitigation strategy.

Table 124. Hazard Risk Conclusions for Frederick

HIGH RISK (2.5 or higher)	**Agricultural Hazards, Cyber Hazards, Drought, Flood, Public Health Hazards, Severe Storms, Tornado & Straight-Line Wind**
MODERATE RISK (2.0 – 2.4)	**Extreme Temperatures, Hazmat Release, Prairie Fire**
LOW RISK (1.9 or lower)	**Earthquake, Land Subsidence**

Since the 2016 Plan, the Town has increased the assessed risk from extreme temperatures and hazmat release from Low to Moderate. Public health hazards, formerly Low Risk, is now considered as High. The Town has reduced its assessed risk from prairie fire from High to Moderate. Besides the newly added hazards of agricultural hazards and cyber hazards, all other risk rankings remain the same.

The following sections highlight the Town of Frederick's High Risk hazards and include any specific content relevant to the Town. They are intended to supplement information included in each hazard profile in the main body of this Plan.

7.8.2.1 Agricultural Hazards (including Disease & Pests)

Vulnerability to agricultural hazards is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to these hazards. There are no previous events to document specific to the Town of Frederick. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.8.2.2 Cyber Hazards

For any municipality, vulnerability to cyber hazards does not vary from that of the County as a whole. While there are no documented cyber events impacting the Town of Frederick, the threat of this hazard is continually increasing. There are no previous events to document specific to Frederick. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.8.2.3 Drought

The community vulnerability to drought is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to this hazard. There are no previous events to document specific to the Town of Frederick. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.8.2.4 Flood (including Dam & Levee Failure)

Flood is a very localized hazard and vulnerability is unique for each municipality. There are no previous events to document specific to Frederick.

The Town of Frederick's overall vulnerability to flood is not noticeably different from the rest of the County. Frederick has 72 address points located in the Special Flood Hazard Area (SFHA). This equates to 0.9% of all address points for the Town, as compared to 1.6% of Countywide addresses located in the SFHA.

Flood events can also occur as a result of dam or levee failure. In these cases, flood waters may not follow the typical floodplains mapped as the SFHA.

Overall vulnerability to flooding in dam inundation areas is increased for the Town of Frederick, where 3.5% of address points (283) are located within these dam inundation areas. This is a larger percentage of structures at risk, as compared to 1.0% of Countywide addresses located in these areas.

Additionally, the Town is the first jurisdiction downstream from two dams. Both have a hazard classification of Significant and associated Emergency Action Plans (EAPs). Additional information pertaining to dams can be referenced at the State's Dam Safety website: https://dwr.state.co.us/Tools/DamSafety/Dams .

The Town's overall vulnerability to flooding in areas protected by known levees is significantly different from the rest of the County. Frederick has no address points located in these within levee protected areas, compared to 1.6% of Countywide addresses located in these areas.

It is important to note that this analysis is only as good as best available data allows. Current floodplains, dam inundation areas, and areas protected by levees may not currently map all hazard areas. Additionally, mapped hazard areas may be dated and in need of updated mapping and analysis.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.8.2.5 Public Health Hazards

Vulnerability to public health hazards is not expected to be noticeably different from the rest of the County. Individuals at a higher risk to this hazard include the aging adult population, those with a chronic illness, such as diabetes, asthma, coronary heart disease, and those who are obese or overweight. Other populations at risk include children, those in poverty and those with a disability. This data is collected at census tract level by the Centers for Disease Control (CDC) and is unavailable at a municipality level. The data by census tract can be found in the Colorado Department of Health and Environment Open Data database here.

Future occurrences are expected to mirror that of the County. There are no previous events to document specific to Frederick. Refer to Chapter 5 – Risk Assessment of this Plan for additional details, including a summary of the higher risk population demographics for Weld County and the State.

7.8.2.6 Severe Storm (including Hail, Lightning, & Winter Storm)

Vulnerability to severe storm, which includes hail, lightning, and winter storm, is not noticeably different from the rest of the County. Frederick's more densely developed areas experience the greatest risk, in addition to potential greater losses to the agriculture sector. Any structures not constructed to meet recent building codes experience the greatest risk from structural damages.

According to the NOAA's Storm Events Database, between 2015 and 2020, the Town of Frederick has had four severe storm events. All of these events resulted in reports of hail, which ranged in size from 1 inch to 2.5 inches. None of these events resulted in reported damage to property or crops and no injuries or deaths.

No other events for severe storm, specific to Frederick, were recorded over this time period.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.8.2.7 Tornado & Straight-Line Wind

Vulnerability to tornado & straight-line wind is not noticeably different from the rest of the County. Frederick's more densely developed areas experience the greatest risk, in addition to any structures not constructed to meet recent building codes.

Between 2015 and 2020, there were no reports of occurrences specific to Frederick. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.8.3 Capabilities Assessment

The capability assessment examines the ability of the Town of Frederick to implement and manage the comprehensive mitigation strategy laid out in this Plan. The strengths, weaknesses, and resources of the community are identified here as a means for evaluating and maintaining effective and appropriate management of the Town's hazard mitigation program.

Planning and regulatory capabilities are powerful tools for implementing hazard mitigation. The Town currently utilizes or has implemented most of these capabilities shown in Table 125. It is important for all municipalities to regularly review each of these tools, to identify opportunities for further risk reduction efforts.

Table 125. Planning & Regulatory Capabilities

Mitigation Capability	Utilized?	Comments
Comprehensive, Master, or General Plan	Yes	Multiple master plans
Capital Improvement Program or Plan (CIP)	Yes	Annual Updates
Floodplain Management Plan	Yes	
Stormwater Program / Plan	Yes	Master Plan underway - complete 12/21
Community Wildfire Protection Plan (CWPP)	No	
Erosion / Sediment Control Program	No	
Economic Development Plan	No	In process
Other:	No	
Building Codes (Year)	Yes	2012
Site Plan Review Requirements	Yes	Town Code/Website
Other:	No	
Zoning Ordinance (Land Use)	Yes	
Subdivision Ordinance	Yes	
National Flood Insurance Program (NFIP) Participant	Yes	
Flood Insurance Study / Flood Insurance Rate Map / DFIRM	Yes	
Floodplain Ordinance	Yes	Town Code
Elevation Certificates for Floodplain Development	Yes	
Community Rating System (CRS) Participant	No	
Open Space / Conservation Program	Yes	
Growth Management Ordinance	No	
Stormwater Ordinance	Yes	Town Code
Other Hazard Ordinance (steep slope, wildfire, snow loads, etc.)	No	
Other:	No	

Available resources including staff, municipal groups, and technology are all vital for a community to be able to implement hazard mitigation. Frederick is fortunate to have many of these capabilities identified in Table 126.

Table 126. Administrative & Technical Capabilities

Mitigation Capability	Utilized?	Comments
Planning Commission	Yes	
Mitigation Planning Committee	No	
Maintenance Programs (tree trimming, clearing drainage, etc.)	Yes	Through Public Works
Emergency Manager	Yes	Emergency Management Coordinator through IGA for Carbon Valley Emergency Management Agency
Building Official	Yes	Staff CBO
Floodplain Administrator	Yes	Engineering Director
Community Planner	Yes	Planning Director
Transportation Planner	No	Administered by Engineering Dept
Civil Engineer	Yes	2 Engineers plus Engineering Director
GIS Capability	Yes	GIS Staff
Resiliency Planner	No	
Other:	No	
Warning Systems / Services (flood)	No	
Warning Systems / Services (other / multi hazard)	No	
Grant Writing / Management	No	
Other:	No	

The ability of a community to implement a comprehensive mitigation strategy is largely dependent on available funding. These related municipal capabilities are outlined in Table 127 and show that Frederick utilizes a broad range of financial tools that can support mitigation activities.

Table 127. Financial Capabilities

Mitigation Capability	Utilized?	Comments
Levy for Specific Purposes with Voter Approval	Yes	
Utilities Fees	Yes	
System Development / Impact Development Fee	Yes	
General Obligation Bonds to Incur Debt	No	
Special Tax Bonds to Incur Debt	Yes	
Open Space / Conservation Fund	Yes	
Stormwater Utility Fees	Yes	

Mitigation Capability	Utilized?	Comments
Capital Improvement Project Funding	Yes	
Community Development Block Grants (CDBG)	Yes	
Withheld spending in hazard-prone areas	No	
Other:	No	

Education and outreach are important capabilities that allow a community to continue the conversation with their public regarding hazard risk and opportunities to mitigate. Table 128 shows that Frederick could benefit by expanding upon these capabilities.

Table 128. Education & Outreach Capabilities

Mitigation Capability	Utilized?	Comments
Public Hazard Education / Outreach Program	Yes	Hazard and Preparedness Education and Outreach in partnership with CVEMA
Local Citizen Groups That Communicate Hazard Risks	No	
Firewise	Yes	Through Frederick-Firestone Fire Protection District Community Outreach
NOAA StormReady Program	No	
Other:	No	

7.8.4 Plan Maintenance and Implementation

The Town of Frederick has developed a Plan Maintenance and Implementation Strategy outlining their method and schedule for keeping the plan current. The Implementation Strategy below also includes a discussion of how the Town will continue public participation in the plan maintenance process.

- The Carbon Valley Emergency Manager will facilitate an annual review of hazard mitigation plan and actions with Town of Frederick's leadership team, in cooperation with partner agencies, such as the fire district and the Weld County Office of Emergency Management. In addition, the Town of Frederick and CVEMA will periodically engage the public in the process of identifying hazards, risks, and prioritizing mitigation actions. To do so, mitigation actions and priorities will be posted on the Town's website for public review and comment.

7.8.5 Integrating Hazard Mitigation into Local Planning

The Town also identified ways to integrate hazard mitigation into their local planning mechanisms and policies. Following are the specific integration strategies identified by the Town of Frederick.

- Current Land Use Code includes environmental constraints related to hazard mitigation. The Town's CIP includes priority mitigation projects related to Storm Water Management.

7.8.6 Mitigation Actions

The new mitigation actions identified by the Town during the Plan update are included in Table 129. One action from the 2016 Plan has been carried over into the Town's updated mitigation strategy.

Table 129. 2021 Mitigation Actions

ID	Organization	Action
2021-47	1-Frederick	Box Culvert at Bella Rosa Parkway
2021-48	2-Frederick	Potable Water System, Emergency Supply
2021-49	3- Frederick	Town Facilities- Expansion & Modification
2021-102	4-Frederick	Community Connect Program

7.9 City of Greeley

"Greeley promotes a healthy, diverse economy and high quality of life responsive to all its residents and neighborhoods, thoughtfully managing its human and natural resources in a manner that creates and sustains a safe, unique, vibrant and rewarding community in which to live, work and play."
– City of Greeley 2060 Comprehensive Plan

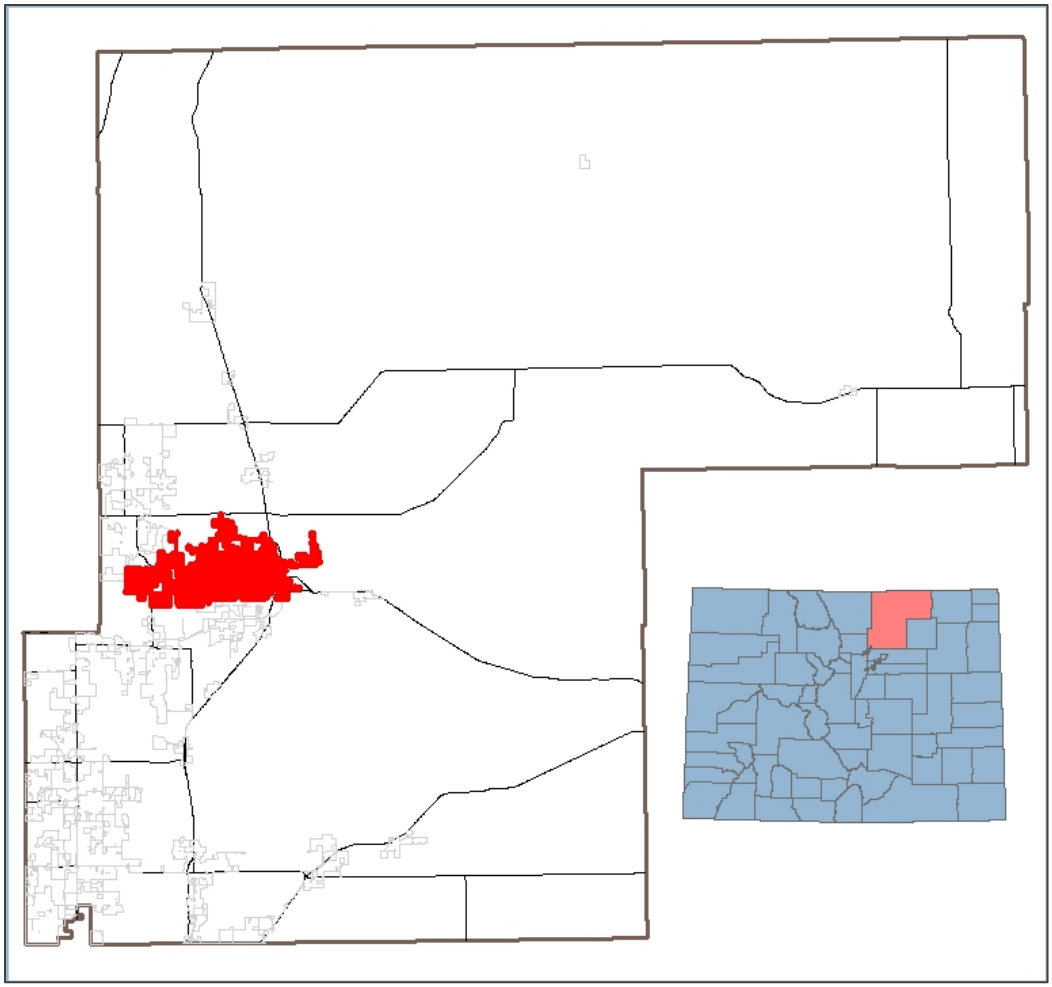
Greeley's Core Values & Guiding Principles are outlined in their comprehensive plan, *City of Greeley 2060,* and serve as a guide for future development and policy decisions within the City's boundaries. They are as follows:

- Excellence in actions, attitude, leadership and focus
- Progressive and Appealing Industrial Development
- A Safe, Prepared, Secure and Harmonious community environment
- Sustainable Community Development through healthy behaviors, sensitive environmental stewardship, varied and compact community design and a complete, effective & forward-thinking transportation system
- A Community Rich in Diversity of People, Customs, and Ideas
- Every Neighborhood Thrives reflecting the spirit of community
- Center of a comprehensive Premier Educational System
- 'Better Together' leadership mode of intergovernmental & public/private cooperation to achieve exceptional community benefits
- A Regional Leader and Northern Colorado destination

These core values and guiding principles are interwoven throughout the City's Comprehensive Plan and form the basis for daily decision making, project/policy prioritization, and implementation strategies.

7.9.1 Community Profile

According to the City of Greeley's Department of Economic Development "Greeley is the business center for Weld County." The second largest community in northern Colorado, Greeley serves as a major retail trade center for agricultural communities in northeastern Colorado, southeastern Wyoming, and southwestern Nebraska.



The City of Greeley is characterized by expansive prairie to the east and the towering Rocky Mountains to the west. Greeley is located in a semi-arid climate. The summers are hot and the winters are mild. Precipitation occurs mostly in the form of rain or snow from October to April: snowfalls are often light and usually melt within a few days.

The table below summarizes key demographic characteristics of the City of Greeley.

Table 130. City of Greeley Demographics

Greeley	Colorado	
108,649	5,758,736	Population, 2019
16.9%	14.5%	Population, % change April 1, 2010 to July 1, 2019
7.0%	5.8%	% Population under 5 years, 2019
25.3%	21.9%	% Population under 19 years, 2019
11.8%	14.6%	% Population 65 years and over, 2019
59.7%	64.9%	Homeownership Rate, 2019
2.71	2.56	Persons Per Household, 2019
$55,007	$68,811	Median Household Income, 2014- 2018
17.1%	9.3%	Persons below poverty level, %, 2014- 2018

Greeley	Colorado	
8.0%	7.3%	% Population under 65 years, with a disability 2014-2018
26.1%	17%	Language other than English spoken at home, % age 5+, 2014- 2018

Source: US Census Bureau

7.9.2 Risk and Vulnerability Assessment

Table 131 summarizes the results of the RF ranking exercise performed by the City of Greeley. The results represent the relative risk of different hazards across the municipality from the perspective of local stakeholders and subject matter experts. Note the final RF Ranking values in this table include the weighting factors detailed in the Risk Assessment chapter of this Plan.

Table 131. Risk Factor Results for Greeley

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	RF Ranking
Agricultural Hazards	4	2	3	1	4	2.9
Cyber Hazards	3	3	3	4	4	3.2
Drought	3	2	4	1	4	2.8
Earthquake	1	2	2	4	1	1.8
Extreme Temps.	3	2	4	1	4	2.8
Flood	3	2	2	1	4	2.4
Hazmat Release	2	4	4	4	4	3.4
Land Subsidence	1	1	1	3	2	1.3
Prairie Fire	3	2	2	4	2	2.5
Public Health Hazards	2	3	3	2	4	2.7
Severe Storms	3	3	2	2	2	2.6
Tornado & Wind	2	2	2	4	1	2.1

The conclusions drawn from the qualitative assessment are organized into three categories shown in the following table and provide a summary of hazard risk for Greeley as a whole - based on High, Moderate, or Low risk designations. This process helped frame ongoing planning discussions around local and regional hazard risks and assisted with the development of the Plan's updated mitigation strategy.

Table 132. Hazard Risk Conclusions for Greeley

HIGH RISK (2.5 or higher)	**Agricultural Hazards, Cyber Hazards, Drought, Extreme Temperatures, Hazmat Release, Prairie Fire, Public Health Hazards, Severe Storms**
MODERATE RISK (2.0 – 2.4)	**Flood, Tornado & Straight-Line Wind**
LOW RISK (1.9 or lower)	**Earthquake, Land Subsidence**

Since the 2016 Plan, the City has increased the assessed risk from prairie fire to High Risk (formerly Moderate). Besides the newly added hazards of agricultural hazards and cyber hazards, all other risk rankings remain the same.

The following sections highlight the City of Greeley's High Risk hazards and include any specific content relevant to the City. They are intended to supplement information included in each hazard profile in the main body of this Plan.

7.9.2.1 Agricultural Hazards (including Disease & Pests)

Greeley does not see a noticeably different vulnerability to agricultural hazards from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to these hazards. There are no previous events to document specific to Greeley. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.9.2.2 Cyber Hazards

Vulnerability to cyber hazards for any municipality does not vary from that of the County as a whole. While there are no documented cyber events impacting Greeley, the threat of this hazard is continually increasing. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.9.2.3 Drought

Vulnerability to drought is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to this hazard. There are no previous events to document specific to Greeley. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.9.2.4 Extreme Temperatures

Vulnerability to extreme temperatures is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to these hazards, due to potential crop and livestock losses. Additionally, individuals at a higher risk to extreme temperatures include those with mobility issues, independent living difficulty, the elderly, low-income families, outdoor laborers, and those experiencing homelessness. Data for these demographics is collected at census tract level, however snapshot data for populations that can fluctuate drastically, such as the number of outdoor laborers and those experiencing homelessness is not included. These are still considerable populations in the County and the City of Greeley and local efforts to quantify these populations periodically can help with mitigation planning.

The data for high risk populations has been analyzed by Colorado Department of Public Health and Environment (CDPHE) and has been used to create Community Inclusions maps. These maps can be zoomed into specific census tracts for municipalities and communities, illustrating the population variances. Refer to Chapter 4 for examples of these maps for Weld County.

There are no previous events to document specific to Greeley. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.9.2.5 Flood (including Dam & Levee Failure)

Flood hazard is not ranked as a High Risk for the City. However, there is currently one Severe Repetitive Loss (SRL) structure in Greeley. Additional details pertaining to this property and FEMA's National Flood Insurance Program (NFIP) can be found in the flood section of Chapter 5 – Risk Assessment.

An event of note occurred in 2015, which caused $250,000 in property damage and $100,000 in crop damage. As of the writing of this plan, there were no other recent events.

7.9.2.6 Hazmat Release

Vulnerability to hazmat release is increased for Greeley, mainly due to the location of CDOT hazardous materials routes through the community. Additionally, railroads span across the City which present their own increased risk for hazmat release. As is true for the entire County, the presence of any businesses that store hazardous materials also increases the risk for these types of events.

Based on data supplied by the Pipeline and Hazardous Materials Safety Administration's (PHMSA) Incident Reports Database, 26 events have occurred within Greeley between 1990 and 2019. The majority of these events were spillage and overfilling, however four of them were vehicular or rollover accidents. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.9.2.7 Prairie Fire

Vulnerability to prairie fire is not noticeably different from the rest of the County. Greeley has 15,730 address points located in the wildland urban interface (WUI). This equates to 42.8% of all address points for the City, as compared to 49.6 percent of Countywide addresses located in the WUI. Future occurrences are expected to mirror that of the County. There are no previous events to document specific to Greeley. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.9.2.8 Public Health Hazards

Vulnerability to public health hazards is not expected to be noticeably different from the rest of the County. Individuals at a higher risk to this hazard include the aging adult population, those with a chronic illness, such as diabetes, asthma, coronary heart disease, and those who are obese or overweight. Other populations at risk include children, those in poverty and those with a disability. This data is collected at census tract level by the Centers for Disease Control (CDC) and is unavailable at a municipality level. The data by census tract can be found in the Colorado Department of Health and Environment Open Data database here.

Future occurrences are expected to mirror that of the County. There are no previous events to document specific to Greeley. Refer to Chapter 5 – Risk Assessment of this Plan for additional details, including a summary of the higher risk population demographics for Weld County and the State.

7.9.2.9 Severe Storm (including Hail, Lightning, & Winter Storm)

Vulnerability to severe storm, which includes hail, lightning, and winter storm, is not noticeably different from the rest of the County. Greeley's more densely developed areas experience the greatest risk. Any structures not constructed to meet recent building codes experience the greatest risk from structural damages.

According to the NOAA's Storm Events Database, between 2015 and 2020, the City of Greeley has had twenty-seven severe storm events. Twenty-four of these events resulted in reports of hail, which ranged in size from 0.88 inches to 2.5 inches. One of these events resulted in $15,000 of damage to property. There was no reported damage to crops and no injuries or deaths.

Two events were reported as thunderstorm winds with magnitudes of 60 mph and 70 mph. There was no reported damage to property or crops and no injuries or deaths. One event was a lightning strike which cause $5,000 in property damage. There were no injuries or deaths.

No other events for severe storm, specific to Greeley, were recorded over this time period.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.9.3 Capabilities Assessment

The capability assessment examines the ability of the City of Greeley to implement and manage the comprehensive mitigation strategy laid out in this Plan. The strengths, weaknesses, and resources of the community are identified here as a means for evaluating and maintaining effective and appropriate management of the City's hazard mitigation program.

Planning and regulatory capabilities are powerful tools for implementing hazard mitigation. The City currently utilizes or has implemented most of these capabilities shown in Table 133. It is important for all municipalities to regularly review each of these tools, to identify opportunities for further risk reduction efforts.

Table 133. Planning & Regulatory Capabilities

Mitigation Capability	Utilized?	Comments
Comprehensive, Master, or General Plan	Yes	
Capital Improvement Program or Plan (CIP)	Yes	5-year plan
Floodplain Management Plan	Yes	
Stormwater Program / Plan	Yes	
Community Wildfire Protection Plan (CWPP)	In Progress	
Erosion / Sediment Control Program	Yes	
Economic Development Plan	Yes	
Other:	No	
Building Codes (Year)	Yes	2018
Site Plan Review Requirements	Yes	
Other:	No	
Zoning Ordinance (Land Use)	Yes	
Subdivision Ordinance	Yes	
National Flood Insurance Program (NFIP) Participant	Yes	
Flood Insurance Study / Flood Insurance Rate Map / DFIRM	Yes	
Floodplain Ordinance	Yes	
Elevation Certificates for Floodplain Development	Yes	
Community Rating System (CRS) Participant	No	
Open Space / Conservation Program	Yes	
Growth Management Ordinance	No	
Stormwater Ordinance	Yes	

Mitigation Capability	Utilized?	Comments
Other Hazard Ordinance (steep slope, wildfire, snow loads, etc.)	No	
Other:	No	

Available resources including staff, municipal groups, and technology are all vital for a community to be able to implement hazard mitigation. Greeley is fortunate to have most all of these capabilities identified in Table 134.

Table 134. Administrative & Technical Capabilities

Mitigation Capability	Utilized?	Comments
Planning Commission	Yes	
Mitigation Planning Committee	No	
Maintenance Programs (tree trimming, clearing drainage, etc.)	Yes	
Emergency Manager	Yes	
Building Official	Yes	
Floodplain Administrator	Yes	Position is in the Stormwater Division of Public Works
Community Planner	Yes	
Transportation Planner	Yes	Position is in Public Works Traffic Division
Civil Engineer	Yes	
GIS Capability	Yes	
Resiliency Planner	Yes	
Other:	No	
Warning Systems / Services (flood)	Yes	Poudre River and 3 rain gauges give alerts
Warning Systems / Services (other / multi hazard)	Yes	Weld County CodeRed
Grant Writing / Management	Yes	
Other:	No	

The ability of a community to implement a comprehensive mitigation strategy is largely dependent on available funding. These related municipal capabilities are outlined in Table 135 and show that Greeley utilizes a broad range of financial tools that can support mitigation activities.

Table 135. Financial Capabilities

Mitigation Capability	Utilized?	Comments
Levy for Specific Purposes with Voter Approval	No	No Mill Levy
Utilities Fees	Yes	
System Development / Impact Development Fee	Yes	
General Obligation Bonds to Incur Debt	Yes	Available, but not currently using this tool for debt

Mitigation Capability	Utilized?	Comments
Special Tax Bonds to Incur Debt	Yes	
Open Space / Conservation Fund	Yes	Colorado Lottery Conservation Trust
Stormwater Utility Fees	Yes	Utility since 2002
Capital Improvement Project Funding	Yes	
Community Development Block Grants (CDBG)	Yes	
Withheld spending in hazard-prone areas	No	
Other:	No	

Education and outreach are important capabilities that allow a community to continue the conversation with their public regarding hazard risk and opportunities to mitigate. Table 136 shows that Greeley does leverage some of these capabilities and is currently working on expanding these efforts.

Table 136. Education & Outreach Capabilities

Mitigation Capability	Utilized?	Comments
Public Hazard Education / Outreach Program	No	City OEM developing
Local Citizen Groups That Communicate Hazard Risks	Yes	
Firewise	No	
NOAA StormReady Program	Yes	County
Other:	No	

7.9.4 Mitigation Actions

The new mitigation actions identified by the City during the Plan update are included in Table 137. Seven actions from the 2016 Plan have been carried over into the City's updated mitigation strategy.

Table 137. 2021 Mitigation Actions

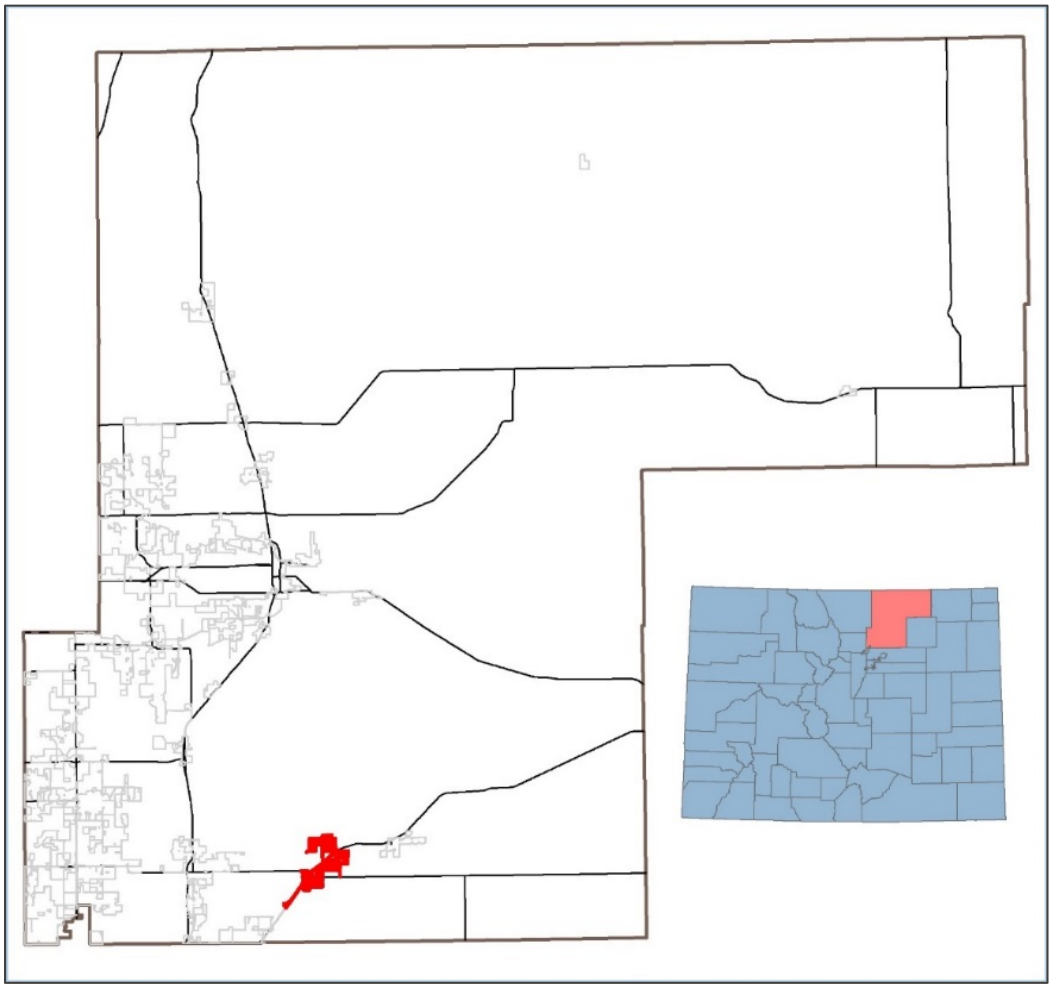
ID	Organization	Action
2021-50	1-City of Greeley	Extreme Heat/Drought Resiliency Program Development
2021-51	2-City of Greeley	Prairie Fire Mitigation Program Development/CWPP
2021-52	1-Greeley- PW	City-Initiated Floodway Rezone
2021-53	2-Greeley -PW	Mitigate Risk to Severe Repetitive Loss Property
2021-54	3-Greeley-PW	Cache la Poudre, West Greeley USACE Project
2021-55	4-Greeley-PW	Poudre River Cleaning
2021-56	5-Greeley -PW	Hwy 85 Bridge Replacement
2021-57	6-Greeley -PW	River Bypass Channel
2021-58	7-Greeley-PW	Poudre River Flood Mitigation Master Planning Project – Ash Ave to 21st Ave

7.10 Town of Hudson

"The Hudson Comprehensive Use Plan establishes the type of town residents want Hudson to become by presenting a comprehensive view of the community, defining the visions of the Town's future, and establishing general methods by which to realize those visions. Its purpose is to articulate the collective desires of the community. It establishes a policy framework for the Town to use in evaluating key issues facing the Town, amendments to the Hudson Comprehensive Plan and to the Town's Land Development Code, and development proposals. Our mission is to enhance the quality of life for those who live in, work in, or visit our community" – 2018

7.10.1 Community Profile

The Town of Hudson is located in south-central Weld County approximately 30 miles northeast of downtown Denver. Located at the intersection of Interstate 76 and State Highway 52, Hudson is surrounded by farms and other agricultural and energy-related industries. The Burlington Northern Santa Fe railway is nearby and a recently operational BNSF Logistics Center is located in northern Hudson, occupying 436 acres.



The table below summarizes development information of the Town of Hudson. Current information for specific characteristics of the population is only available from the US Census Bureau for municipalities with populations over 5,000 people.

Table 138. Town of Hudson Demographics

Hudson	Colorado	
1,891	5,758,736	Population, 2019
-20.1%	14.5%	Population, % change April 1, 2010 to July 1, 2019
2.9	2.56	Persons Per Household, 2019

Note: Recent data is unavailable from the US Census Bureau for some categories, based on the size of the municipality. Source: US Census Bureau

7.10.2 Risk and Vulnerability Assessment

Table 139 summarizes the results of the RF ranking exercise performed by the Town of Hudson. The results represent the relative risk of different hazards across the municipality from the perspective of local stakeholders and subject matter experts. Note the final RF Ranking values in this table include the weighting factors detailed in the Risk Assessment chapter of this Plan.

Table 139. Risk Factor Results for Hudson

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	RF Ranking
Agricultural Hazards	2	1	2	1	4	1.8
Cyber Hazards	3	3	1	4	2	2.6
Drought	3	1	3	1	4	2.3
Earthquake	2	2	4	4	1	2.5
Extreme Temps.	3	1	4	1	4	2.5
Flood	1	1	2	2	3	1.5
Hazmat Release	3	3	3	4	2	3.0
Land Subsidence	2	1	1	1	4	1.6
Prairie Fire	2	3	3	3	3	2.7
Public Health Hazards	3	2	3	1	3	2.5
Severe Storms	4	2	4	1	3	3.0
Tornado & Wind	2	3	3	4	2	2.7

The conclusions drawn from the qualitative assessment are organized into three categories shown in the following table and provide a summary of hazard risk for Hudson as a whole - based on High, Moderate, or Low risk designations. This process helped frame ongoing planning discussions around local and regional hazard risks and assisted with the development of the Plan's updated mitigation strategy.

Table 140. Hazard Risk Conclusions for Hudson

HIGH RISK (2.5 or higher)	**Cyber Hazards, Earthquake, Extreme Temperatures, Hazmat Release, Prairie Fire, Public Health Hazards, Severe Storms, Tornado & Straight-Line Wind**
MODERATE RISK (2.0 – 2.4)	**Drought**
LOW RISK (1.9 or lower)	**Agricultural Hazards, Flood, Land Subsidence**

Since the 2016 Plan, the Town has increased the assessed risk from drought from Low to Moderate.

The Town has also increased the assessed risk from earthquake from Low to High. Risk from extreme temperature, public health hazards, and prairie fire are all now considered High (previously Moderate). Besides the newly added hazards of agricultural hazards and cyber hazards, all other risk rankings remain the same.

The following sections highlight the Town of Hudson's High Risk hazards and include any specific content relevant to the Town. They are intended to supplement information included in each hazard profile in the main body of this Plan.

7.10.2.1 Cyber Hazards

For any municipality, vulnerability to cyber hazards does not vary from that of the County as a whole. While there are no documented cyber events impacting Hudson, the threat of this hazard is continually increasing. There are no previous events to document specific to the Town of Hudson. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.10.2.2 Earthquake

Vulnerability to earthquake is not noticeably different from the rest of the County. The Town of Hudson's more densely developed areas experience the greatest risk, in addition to any structures not constructed to meet recent building codes. There are no previous events to document specific to Hudson. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.10.2.3 Extreme Temperatures

Vulnerability to extreme temperatures is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to these hazards due to potential crop and livestock losses. Additionally, individuals at a higher risk to extreme temperatures include those with mobility issues, independent living difficulty, the elderly, low-income families, outdoor laborers, and those experiencing homelessness. Data for these demographics is collected at census tract level, however snapshot data for populations that can fluctuate drastically, such as the number of outdoor laborers and those experiencing homelessness is not included. These are still considerable populations in the County and the Town of Hudson and local efforts to quantify these populations periodically can help with mitigation planning.

The data for high risk populations has been analyzed by Colorado Department of Public Health and Environment (CDPHE) and has been used to create Community Inclusions maps. These maps can be zoomed into specific census tracts for municipalities and communities, illustrating the population variances. Refer to Chapter 4 for examples of these maps for Weld County.

There are no previous events to document specific to the Town of Hudson. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.10.2.4 Hazmat Release

Vulnerability to hazmat release is increased for the Town of Hudson, mainly due to the location of a CDOT hazardous materials route through the community. Additionally, railroads span across Hudson which present their own increased risk for hazmat release. As is true for the entire County, the presence of any businesses that store hazardous materials also increases the risk for these types of events.

Based on data supplied by the Pipeline and Hazardous Materials Safety Administration's (PHMSA) Incident Reports Database there has been one event within Hudson between 1991 and 2019. This was a railway transport event and was caused by a loose closure or component.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.10.2.5 Prairie Fire

Vulnerability to prairie fire is increased for Hudson, where 54.8% of address points (362) are located within the wildland urban interface (WUI). This is a larger percentage of structures at risk, as compared to 49.6 percent of Countywide addresses located in the WUI. Future occurrences are expected to mirror that of the County. There are no previous events to document specific to Hudson. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.10.2.6 Public Health Hazards

Vulnerability to public health hazards is not expected to be noticeably different from the rest of the County. Individuals at a higher risk to this hazard include the aging adult population, those with a chronic illness, such as diabetes, asthma, coronary heart disease, and those who are obese or overweight. Other populations at risk include children, those in poverty and those with a disability. This data is collected at census tract level by the Centers for Disease Control (CDC) and is unavailable at a municipality level. The data by census tract can be found in the Colorado Department of Health and Environment Open Data database here.

Future occurrences are expected to mirror that of the County. There are no previous events to document specific to Hudson. Refer to Chapter 5 – Risk Assessment of this Plan for additional details, including a summary of the higher risk population demographics for Weld County and the State.

7.10.2.7 Severe Storm (including Hail, Lightning, & Winter Storm)

Vulnerability to severe storm, which includes hail, lightning, and winter storm, is not noticeably different from the rest of the County. The Town of Hudson 's more densely developed areas experience the greatest risk, in addition to potential greater losses to the agriculture sector. Any structures not constructed to meet recent building codes experience the greatest risk from structural damages.

According to the NOAA's Storm Events Database, between 2015 and 2020, the Town of Hudson has had six severe storm events. Four of these events resulted in reports of hail, which ranged in size from 1 inch to 2 inches. None of these events resulted in reported damage to property or crops and no injuries or deaths.

Two events were reported as thunderstorm winds with magnitudes of 60 mph and 63 mph. There was no reported damage to property or crops and no injuries or deaths. No other events for severe storm, specific to Hudson, were recorded over this time period.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.10.2.8 Tornado & Straight-Line Wind

Vulnerability to tornado & straight-line wind is not noticeably different from the rest of the County. Hudson's more densely developed areas experience the greatest risk, in addition to any structures not constructed to meet recent building codes.

According to the NOAA's Storm Events Database, between 2015 and 2020, there was one (1) report of an EF0 tornado in Hudson. The event did not cause damage to property or crops and no injuries or deaths.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.10.3 Capabilities Assessment

The capability assessment examines the ability of the Town of Hudson to implement and manage the comprehensive mitigation strategy laid out in this Plan. The strengths, weaknesses, and resources of the community are identified here as a means for evaluating and maintaining effective and appropriate management of the Town's hazard mitigation program.

Planning and regulatory capabilities are powerful tools for implementing hazard mitigation. The Town currently utilizes or has implemented many of these capabilities shown in Table 141. It is important for all municipalities to regularly review each of these tools, to identify opportunities for further risk reduction efforts.

Table 141. Planning & Regulatory Capabilities

Mitigation Capability	Utilized?	Comments
Comprehensive, Master, or General Plan	Yes	2035 Comprehensive Plan, passed March 2018
Capital Improvement Program or Plan (CIP)	No	Currently in progress
Floodplain Management Plan	No	
Stormwater Program / Plan	No	
Community Wildfire Protection Plan (CWPP)	No	
Erosion / Sediment Control Program	Yes	Adopted by reference in engineering standards
Economic Development Plan	No	
Other:	Yes	Passed January 2020
Building Codes (Year)	Yes	IBC, IRC 2018
Site Plan Review Requirements	Yes	All except single-family residential
Other:	No	
Zoning Ordinance (Land Use)	Yes	
Subdivision Ordinance	Yes	
National Flood Insurance Program (NFIP) Participant	Yes	Adopted by reference in engineering standards
Flood Insurance Study / Flood Insurance Rate Map / DFIRM	Yes	Adopted by reference in engineering standards
Floodplain Ordinance	Yes	Regulated through engineering standards
Elevation Certificates for Floodplain Development	Yes	
Community Rating System (CRS) Participant	No	
Open Space / Conservation Program	No	

Mitigation Capability	Utilized?	Comments
Growth Management Ordinance	Yes	
Stormwater Ordinance	Yes	Regulated through engineering standards
Other Hazard Ordinance (steep slope, wildfire, snow loads, etc.)	No	
Other:	No	

Available resources including staff, municipal groups, and technology are all vital for a community to be able to implement hazard mitigation. Hudson is fortunate to have most all of these capabilities identified in Table 142.

Table 142. Administrative & Technical Capabilities

Mitigation Capability	Utilized?	Comments
Planning Commission	Yes	
Mitigation Planning Committee	No	
Maintenance Programs (tree trimming, clearing drainage, etc.)	Yes	As needed
Emergency Manager	Yes	Assistant to the Town Manager
Building Official	Yes	Contract with SAFEbuilt
Floodplain Administrator	Yes	Guy Patterson
Community Planner	Yes	
Transportation Planner	Yes	Same as Community Planner
Civil Engineer	Yes	Contract with Northern Engineering
GIS Capability	Yes	
Resiliency Planner	No	
Other:	No	
Warning Systems / Services (flood)	No	Minimal floodplain issues
Warning Systems / Services (other / multi hazard)	Yes	Tornado sirens (Weld County)
Grant Writing / Management	Yes	Multiple Staff
Other:	No	

The ability of a community to implement a comprehensive mitigation strategy is largely dependent on available funding. These related municipal capabilities are outlined in Table 143 and show that Hudson utilizes a broad range of financial tools that can support mitigation activities.

Table 143. Financial Capabilities

Mitigation Capability	Utilized?	Comments
Levy for Specific Purposes with Voter Approval	Yes	"Property Tax Special Revenue Fund"
Utilities Fees	Yes	
System Development / Impact Development Fee	Yes	Park, Facilities, Street Impact Funds (low $ amount)
General Obligation Bonds to Incur Debt	Yes	

Mitigation Capability	Utilized?	Comments
Special Tax Bonds to Incur Debt	Yes	
Open Space / Conservation Fund	Yes	
Stormwater Utility Fees	No	
Capital Improvement Project Funding	Yes	
Community Development Block Grants (CDBG)	Yes	
Withheld spending in hazard-prone areas	No	
Other:	No	

Education and outreach are important capabilities that allow a community to continue the conversation with their public regarding hazard risk and opportunities to mitigate. Table 144 shows that Hudson could benefit by expanding upon these capabilities.

Table 144. Education & Outreach Capabilities

Mitigation Capability	Utilized?	Comments
Public Hazard Education / Outreach Program	No	
Local Citizen Groups That Communicate Hazard Risks	No	
Firewise	No	
NOAA StormReady Program	No	
Other:	No	

7.10.4 Mitigation Actions

The new mitigation actions identified by the Town during the Plan update are included in Table 145Table 73. Two actions from the 2016 Plan have been carried over into the Town's updated mitigation strategy.

Table 145. 2021 Mitigation Actions

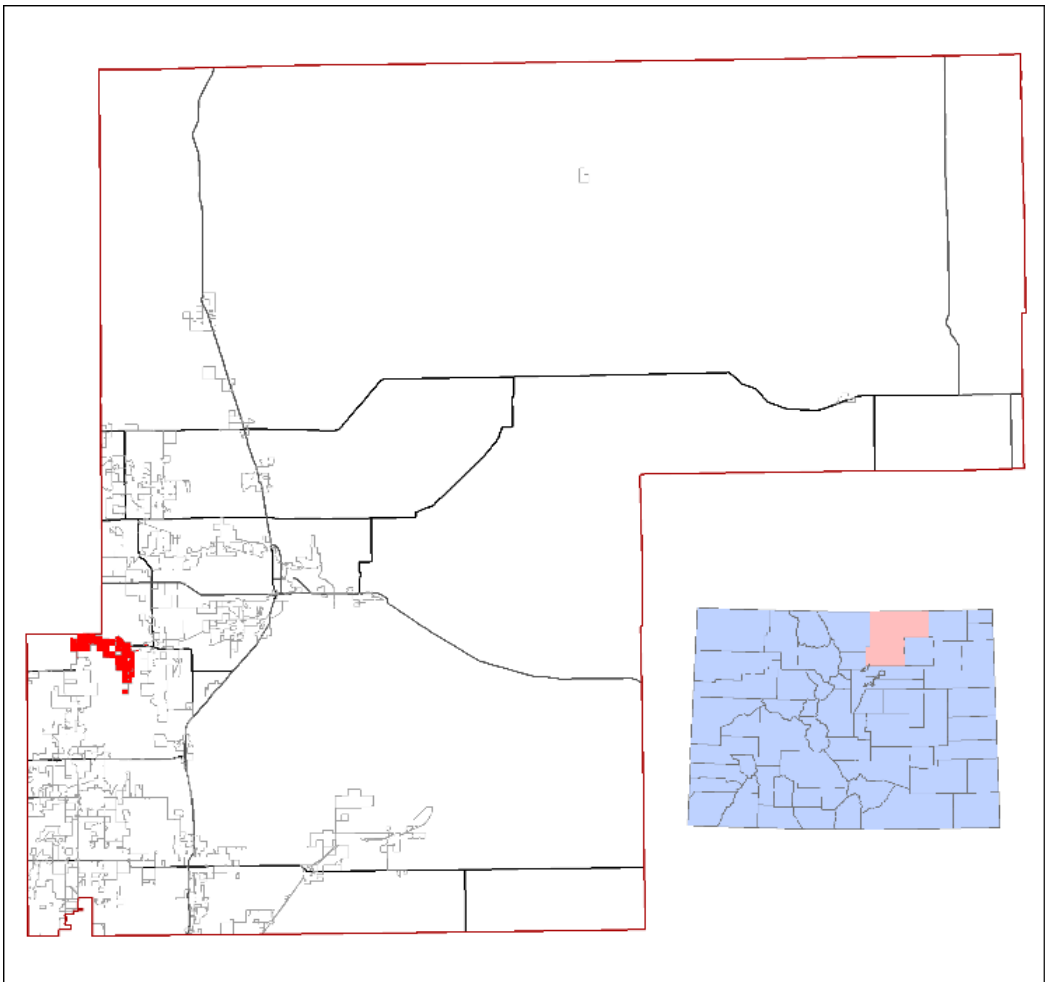
ID	Organization	Action
2021-59	1-Hudson	Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning
2021-60	2-Hudson	Repeater System
2021-61	3-Hudson	Updates Comprehensive Plan / Identify Mitigation actions

7.11 Town of Johnstown

The 2020 Town of Johnstown Comprehensive Plan states the community mission as *"enhancing the quality of life of our residents, businesses, and visitors through community-focused leadership."* Along with this mission the vision statement of "*connecting community with opportunity*" shows the commitment to community-driven growth and development.

7.11.1 Community Profile

The Town of Johnstown falls in both Larimer and Weld Counties. Greeley is approximately ten miles to the east-northeast and Loveland is approximately nine miles to the northwest. With a location adjacent to Interstate 25 and a Great Western Railroad interchange, the Town has a unique advantage for transporting goods and services across the region.



The table below summarizes key demographic characteristics of Johnstown.

Table 146. Town of Johnstown Demographics

Johnstown	Colorado	
18,198	5,758,736	Population, 2019
54.1%	14.5%	Population, % change April 1, 2010 to July 1, 2019
9.2%	5.8%	% Population under 5 years, 2019

Johnstown	Colorado	
25.7%	21.9%	% Population under 19 years, 2019
12.9%	14.6%	% Population 65 years and over, 2019
88.5%	64.9%	Homeownership Rate, 2019
2.87	2.56	Persons Per Household, 2019
$90,240	$68,811	Median Household Income, 2014- 2018
2.9%	9.3%	Persons below poverty level, %, 2014- 2018
4.7%	7.3%	% Population under 65 years, with a disability 2014-2018
13.7%	17%	Language other than English spoken at home, % age 5+, 2014- 2018

Source: US Census Bureau

7.11.2 Risk and Vulnerability Assessment

The Town of Johnstown is situated in both Larimer and Weld Counties. For the purpose of this plan, spatially analyzed hazard risks have been assessed for the areas of the city that lie specifically within Weld County.

Table 147 summarizes the results of the RF ranking exercise performed by the Town of Johnstown. The results represent the relative risk of different hazards across the municipality from the perspective of local stakeholders and subject matter experts. Note the final RF Ranking values in this table include the weighting factors detailed in the Risk Assessment chapter of this Plan.

Table 147. Risk Factor Results for Johnstown

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	RF Ranking
Agricultural Hazards	3	1	2	1	4	2.1
Cyber Hazards	3	1	2	4	4	2.4
Drought	2	1	4	1	4	2.2
Earthquake	1	1	3	4	1	1.7
Extreme Temps.	2	1	4	1	4	2.2
Flood	3	2	1	2	3	2.2
Hazmat Release	3	1	1	4	1	1.9
Land Subsidence	4	1	1	4	4	2.5
Prairie Fire	3	1	1	4	2	2.0
Public Health Hazards	2	3	4	1	4	2.8
Severe Storms	3	1	4	2	2	2.4
Tornado & Wind	4	1	2	4	1	2.4

The conclusions drawn from the qualitative assessment are organized into three categories shown in the following table and provide a summary of hazard risk for Johnstown as a whole - based on High, Moderate, or Low risk designations. This process helped frame ongoing planning discussions around local and regional hazard risks and assisted with the development of the Plan's updated mitigation strategy.

Table 148. Hazard Risk Conclusions for Johnstown

HIGH RISK (2.5 or higher)	**Land Subsidence, Public Health Hazards**
MODERATE RISK (2.0 – 2.4)	**Agricultural Hazards, Cyber Hazards, Drought, Extreme Temperatures, Flood, Prairie Fire, Severe Storms, Tornado & Straight-Line Wind**
LOW RISK (1.9 or lower)	**Earthquake, Hazmat Release**

The following sections highlight the Town of Johnstown's High Risk hazards and include any specific content relevant to the Town. They are intended to supplement information included in each hazard profile in the main body of this Plan.

7.11.2.1 Land Subsidence

Johnstown's vulnerability to land subsidence is not noticeably different from the rest of the County. Although undermined areas have not been identified within the Town's borders, there are multiple identified areas within ten miles of Johnstown that had historic mining activities. There are no previous events to document specific to Johnstown. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.11.2.2 Public Health Hazards

Vulnerability to public health hazards is not expected to be noticeably different from the rest of the County. Individuals at a higher risk to this hazard include the aging adult population, those with a chronic illness, such as diabetes, asthma, coronary heart disease, and those who are obese or overweight. Other populations at risk include children, those in poverty and those with a disability. This data is collected at census tract level by the Centers for Disease Control (CDC) and is unavailable at a municipality level. The data by census tract can be found in the Colorado Department of Health and Environment Open Data database here.

Future occurrences are expected to mirror that of the County. There are no previous events to document specific to Johnstown. Refer to Chapter 5 – Risk Assessment of this Plan for additional details, including a summary of the higher risk population demographics for Weld County and the State.

7.11.3 Capabilities Assessment

The capability assessment examines the ability of the Town of Johnstown to implement and manage the comprehensive mitigation strategy laid out in this Plan. The strengths, weaknesses, and resources of the community are identified here as a means for evaluating and maintaining effective and appropriate management of the Town's hazard mitigation program.

Planning and regulatory capabilities are powerful tools for implementing hazard mitigation. The Town currently utilizes or has implemented many of these capabilities shown in Table 149. It is important for all municipalities to regularly review each of these tools, to identify opportunities for further risk reduction efforts.

Table 149. Planning & Regulatory Capabilities

Mitigation Capability	Utilized?	Comments
Comprehensive, Master, or General Plan	Yes	

Mitigation Capability	Utilized?	Comments
Capital Improvement Program or Plan (CIP)	Yes	
Floodplain Management Plan	No	
Stormwater Program / Plan	No	
Community Wildfire Protection Plan (CWPP)	No	
Erosion / Sediment Control Program	Yes	Require grading and ECP prior to site work
Economic Development Plan	Yes	
Other:	No	
Building Codes (Year)	Yes	2018
Site Plan Review Requirements	Yes	
Other:	No	
Zoning Ordinance (Land Use)	Yes	
Subdivision Ordinance	Yes	
National Flood Insurance Program (NFIP) Participant	Yes	
Flood Insurance Study / Flood Insurance Rate Map / DFIRM	Yes	
Floodplain Ordinance	Yes	
Elevation Certificates for Floodplain Development	Yes	Not in FEMA certificate
Community Rating System (CRS) Participant	No	Under consideration for 2021
Open Space / Conservation Program	No	
Growth Management Ordinance	Yes	
Stormwater Ordinance	Yes	
Other Hazard Ordinance (steep slope, wildfire, snow loads, etc.)	Yes	
Other:	No	

Available resources including staff, municipal groups, and technology are all vital for a community to be able to implement hazard mitigation. Johnstown is fortunate to have most all of these capabilities identified in Table 150.

Table 150. Administrative & Technical Capabilities

Mitigation Capability	Utilized?	Comments
Planning Commission	Yes	
Mitigation Planning Committee	No	
Maintenance Programs (tree trimming, clearing drainage, etc.)	Yes	
Emergency Manager	Yes	
Building Official	Yes	
Floodplain Administrator	Yes	

Mitigation Capability	Utilized?	Comments
Community Planner	Yes	
Transportation Planner	Yes	
Civil Engineer	Yes	
GIS Capability	Yes	
Resiliency Planner	No	
Other:	No	
Warning Systems / Services (flood)	No	
Warning Systems / Services (other / multi hazard)	Yes	
Grant Writing / Management	Yes	
Other:	No	

The ability of a community to implement a comprehensive mitigation strategy is largely dependent on available funding. These related municipal capabilities are outlined in Table 151 and show that Johnstown utilizes a range of financial tools that can support mitigation activities.

Table 151. Financial Capabilities

Mitigation Capability	Utilized?	Comments
Levy for Specific Purposes with Voter Approval	No	
Utilities Fees	Yes	
System Development / Impact Development Fee	Yes	
General Obligation Bonds to Incur Debt	No	
Special Tax Bonds to Incur Debt	No	
Open Space / Conservation Fund	No	
Stormwater Utility Fees	Yes	
Capital Improvement Project Funding	Yes	
Community Development Block Grants (CDBG)	No	
Withheld spending in hazard-prone areas	No	
Other:	No	

Education and outreach are important capabilities that allow a community to continue the conversation with their public regarding hazard risk and opportunities to mitigate. Table 152 shows that Johnstown could benefit by expanding upon these capabilities.

Table 152. Education & Outreach Capabilities

Mitigation Capability	Utilized?	Comments
Public Hazard Education / Outreach Program	No	
Local Citizen Groups That Communicate Hazard Risks	No	
Firewise	No	
NOAA StormReady Program	No	
Other:	No	

7.11.4 Mitigation Actions

The mitigation actions identified by the Town during the Plan update are included in Table 153.

Table 153. 2021 Mitigation Actions

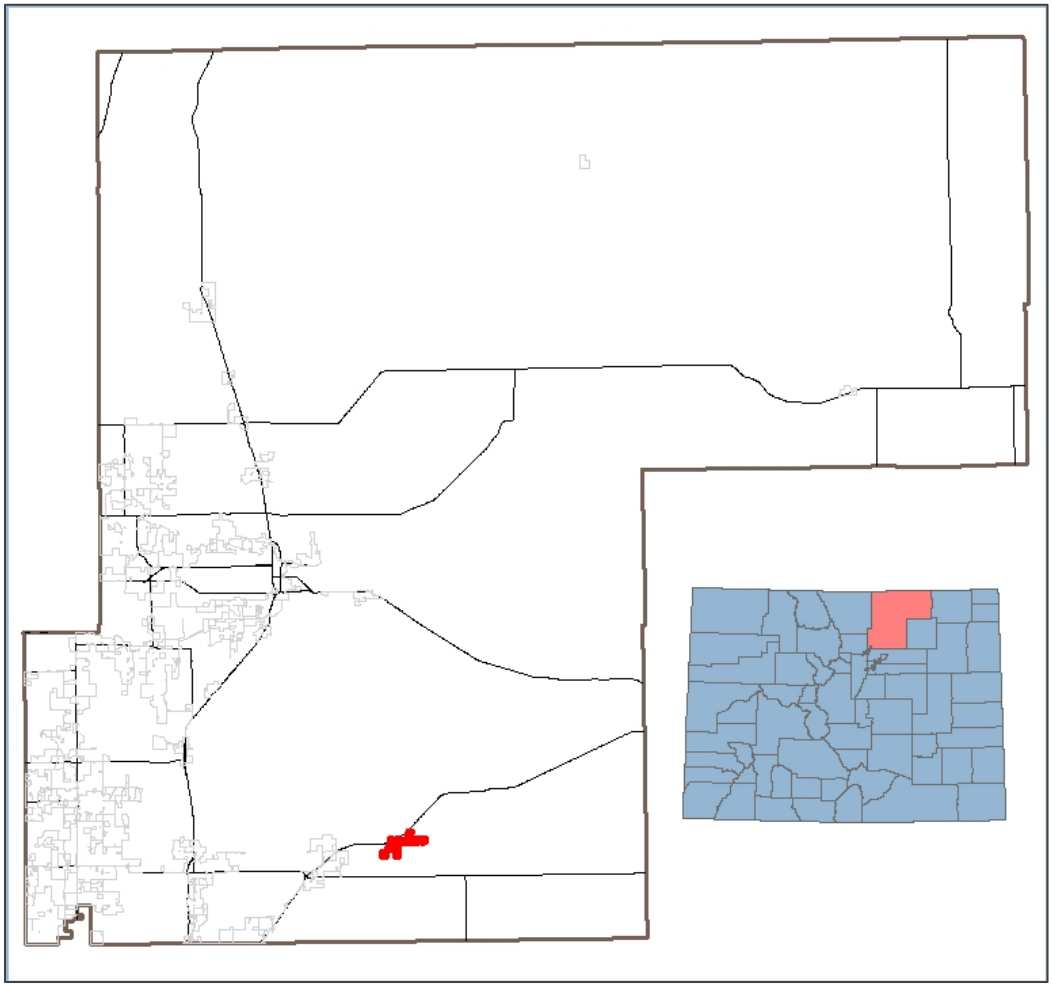
ID	Organization	Action
2021-62	1-Johnstown	Resiliency Study
2021-63	2-Johnstown	Drainage Improvements Old Town
2021-64	3-Johnstown	Install Emergency Generator
2021-65	4-Johnstown	Community Preparedness Education
2021-66	5-Johnstown	Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning

7.12 Town of Keenesburg

The motto of Keenesburg is "Home of 500 Happy People and a Few Soreheads." While the Town has grown to a population of over 1,200, the importance of positive progression of the community is at the forefront of the Town's character. Pride in the community's involvement and roots in agriculture have guided the development of this municipality.

7.12.1 Community Profile

The Town of Keenesburg is located in Southeast Weld County, approximately 25 miles southeast of the County Seat of Greeley. Keenesburg is located along the I-76 corridor and approximately 35 miles northeast of Denver. The Town has a total area of 0.6 square miles and is part of the agricultural community.



The table below summarizes development information of the Town of Keenesburg. Current information for specific characteristics of the population is only available from the US Census Bureau for municipalities with populations over 5,000 people.

Table 154. Town of Keenesburg Demographics

Keenesburg	Colorado	
1,237	5,758,736	Population, 2019

Keenesburg	Colorado	
8.7%	14.5%	Population, % change April 1, 2010 to July 1, 2019
2.56	2.56	Persons Per Household, 2019

Note: Recent data is unavailable from the US Census Bureau for some categories, based on the size of the municipality. Source: US Census Bureau

7.12.2 Risk and Vulnerability Assessment

Table 155 summarizes the results of the RF ranking exercise performed by the Town of Keenesburg. The results represent the relative risk of different hazards across the municipality from the perspective of local stakeholders and subject matter experts. Note the final RF Ranking values in this table include the weighting factors detailed in the Risk Assessment chapter of this Plan.

Table 155. Risk Factor Results for Keenesburg

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	RF Ranking
Agricultural Hazards	3	2	3	1	4	2.6
Cyber Hazards	3	2	2	4	2	2.5
Drought	4	3	3	1	4	3.2
Earthquake	1	3	3	4	1	2.3
Extreme Temps.	3	3	3	2	3	2.9
Flood	2	3	3	3	2	2.6
Hazmat Release	3	4	3	4	3	3.4
Land Subsidence	1	1	1	4	1	1.3
Prairie Fire	2	2	2	4	1	2.1
Public Health Hazards	4	4	4	1	4	3.7
Severe Storms	4	3	4	2	1	3.2
Tornado & Wind	3	3	3	4	1	2.9

The conclusions drawn from the qualitative assessment are organized into three categories shown in the following table and provide a summary of hazard risk for Keenesburg as a whole - based on High, Moderate, or Low risk designations. This process helped frame ongoing planning discussions around local and regional hazard risks and assisted with the development of the Plan's updated mitigation strategy.

Table 156. Hazard Risk Conclusions for Keenesburg

HIGH RISK (2.5 or higher)	**Agricultural Hazards, Cyber Hazards, Drought, Extreme Temperatures, Flood, Hazmat Release, Public Health Hazards, Severe Storms, Tornado & Straight-Line Wind**
MODERATE RISK (2.0 – 2.4)	**Earthquake, Prairie Fire**
LOW RISK (1.9 or lower)	**Land Subsidence**

Since the 2016 Plan, the Town has increased the assessed risk from drought and flood to High Risk (both formerly Moderate). The Town has also increased the assessed risk from extreme temperatures,

hazmat release, public health hazards, and prairie fire to High Risk (all formerly Low). Besides the newly added hazards of agricultural hazards and cyber hazards, all other risk rankings remain the same.

The following sections highlight the Town of Keenesburg's High Risk hazards and include any specific content relevant to the Town. They are intended to supplement information included in each hazard profile in the main body of this Plan.

7.12.2.1 Agricultural Hazards (including Disease & Pests)

Vulnerability to agricultural hazards is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to these hazards. There are no previous events to document specific to the Town of Keenesburg. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.12.2.2 Cyber Hazards

For any municipality, vulnerability to cyber hazards does not vary from that of the County as a whole. While there are no documented cyber events impacting the Town of Keenesburg, the threat of this hazard is continually increasing. There are no previous events to document specific to Keenesburg. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.12.2.3 Drought

The community vulnerability to drought is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to this hazard. There are no previous events to document specific to the Town of Keenesburg. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.12.2.4 Extreme Temperatures

The Town of Keenesburg's vulnerability to extreme temperatures is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to these hazards due to potential crop and livestock losses. Additionally, individuals at a higher risk to extreme temperatures include those with mobility issues, independent living difficulty, the elderly, low-income families, outdoor laborers, and those experiencing homelessness. Data for these demographics is collected at census tract level, however snapshot data for populations that can fluctuate drastically, such as the number of outdoor laborers and those experiencing homelessness is not included. These are still considerable populations in the County and the Town of Keenesburg and local efforts to quantify these populations periodically can help with mitigation planning.

The data for high risk populations has been analyzed by Colorado Department of Public Health and Environment (CDPHE) and has been used to create Community Inclusions maps. These maps can be zoomed into specific census tracts for municipalities and communities, illustrating the population variances. Refer to Chapter 4 for examples of these maps for Weld County.

There are no previous events to document specific to the Town of Keenesburg. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.12.2.5 Flood (including Dam & Levee Failure)

Flood is a very localized hazard and vulnerability is unique for each municipality. On 6/16/2018 a flash flood impacted Keenesburg, resulting in $10,000 in property damages. Numerous roads were closed and damaged due to the heavy rain.

The Town of Keenesburg's overall vulnerability to flood is not noticeably different from the rest of the County. Keenesburg has 1 address point located in the Special Flood Hazard Area (SFHA). This equates to 1.7% of all address points for the Town, as compared to 1.6% of Countywide addresses located in the SFHA.

Flood events can also occur as a result of dam or levee failure. In these cases, flood waters may not follow the typical floodplains mapped as the SFHA.

The Town of Keenesburg's overall vulnerability to flooding in dam inundation areas is significantly different from the rest of the County, as Keenesburg has no address points located in these dam inundation areas. This is compared to 1.0% of Countywide addresses located in these areas.

Additionally, the Town is the first jurisdiction downstream from two dams. Both have a hazard classification of Low. Additional information pertaining to dams can be referenced at the State's Dam Safety website: https://dwr.state.co.us/Tools/DamSafety/Dams .

The Town's overall vulnerability to flooding in areas protected by known levees is substantially different from the rest of the County. Keenesburg has no address points located in these within levee protected areas, compared to 1.6% of Countywide addresses located in these areas.

It is important to note that this analysis is only as good as best available data allows. Current floodplains, dam inundation areas, and areas protected by levees may not currently map all hazard areas. Additionally, mapped hazard areas may be dated and in need of updated mapping and analysis.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.12.2.6 Hazmat Release

Vulnerability to hazmat release is increased for the Town of Keenesburg, mainly due to the location of a CDOT hazardous materials route through the community. Additionally, railroads span across Keenesburg which present their own increased risk for hazmat release. As is true for the entire County, the presence of any businesses that store hazardous materials also increases the risk for these types of events.

Based on data supplied by the Pipeline and Hazardous Materials Safety Administration's (PHMSA) Incident Reports Database, eight events occurred within Keenesburg between 1991 and 2019. One was a rollover accident, while the rest were due to improper transport preparation and loose or defective components.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.12.2.7 Public Health Hazards

Vulnerability to public health hazards is not expected to be noticeably different from the rest of the County. Individuals at a higher risk to this hazard include the aging adult population, those with a chronic illness, such as diabetes, asthma, coronary heart disease, and those who are obese or

overweight. Other populations at risk include children, those in poverty and those with a disability. This data is collected at census tract level by the Centers for Disease Control (CDC) and is unavailable at a municipality level. The data by census tract can be found in the Colorado Department of Health and Environment Open Data database here.

Future occurrences are expected to mirror that of the County. There are no previous events to document specific to Keenesburg. Refer to Chapter 5 – Risk Assessment of this Plan for additional details, including a summary of the higher risk population demographics for Weld County and the State.

7.12.2.8 Severe Storm (including Hail, Lightning, & Winter Storm)

Vulnerability to severe storm, which includes hail, lightning, and winter storm, is not noticeably different from the rest of the County. The Town of Keenesburg's more densely developed areas experience the greatest risk, in addition to potential greater losses to the agriculture sector. Any structures not constructed to meet recent building codes experience the greatest risk from structural damages.

According to the NOAA's Storm Events Database, between 2015 and 2020, the Town of Keenesburg has had 8 severe storm events. Four (4) of these events resulted in reports of hail, which ranged in size from 1 inch to 1.5 inches. None of these events resulted in reported damage to property or crops and no injuries or deaths.

Four (4) events were reported as thunderstorm winds with magnitudes of 50 mph and 61 mph. There was no reported damage to property or crops and no injuries or deaths. No other events for severe storm, specific to Keenesburg, were recorded over this time period.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.12.2.9 Tornado & Straight-Line Wind

Vulnerability to tornado & straight-line wind is not noticeably different from the rest of the County. The Town of Keenesburg's more densely developed areas experience the greatest risk, in addition to any structures not constructed to meet recent building codes.

According to the NOAA's Storm Events Database, between 2015 and 2020, there was one (1) report of an EF0 tornado in Keenesburg. The event did not cause damage to property or crops and no injuries or deaths.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.12.3 Capabilities Assessment

The capability assessment examines the ability of the Keenesburg to implement and manage the comprehensive mitigation strategy laid out in this Plan. The strengths, weaknesses, and resources of the community are identified here as a means for evaluating and maintaining effective and appropriate management of the Town's hazard mitigation program.

Planning and regulatory capabilities are powerful tools for implementing hazard mitigation. The Town currently utilizes or has implemented many of these capabilities shown in Table 157. It is important for all municipalities to regularly review each of these tools, to identify opportunities for further risk reduction efforts.

Table 157. Planning & Regulatory Capabilities

Mitigation Capability	Utilized?	Comments
Comprehensive, Master, or General Plan	Yes	Comprehensive Plan, update in 2021
Capital Improvement Program or Plan (CIP)	Yes	
Floodplain Management Plan	No	
Stormwater Program / Plan	In Progress	In development- planning stages
Community Wildfire Protection Plan (CWPP)	No	
Erosion / Sediment Control Program	No	Erosion control, Construction permits
Economic Development Plan	No	City Council informal group
Other:		
Building Codes	Yes	Updated 2018- New update in process
Site Plan Review Requirements	Yes	Municipal Code
Other:		
Zoning Ordinance (Land Use)	Yes	Municipal Code / Adopted Standards
Subdivision Ordinance	Yes	Municipal Code
National Flood Insurance Program (NFIP) Participant	Yes	
Flood Insurance Study / Flood Insurance Rate Map / DFIRM	Yes	
Floodplain Ordinance	Yes	
Elevation Certificates for Floodplain Development	No	
Community Rating System (CRS) Participant	No	
Open Space / Conservation Program	No	
Growth Management Ordinance	No	
Stormwater Ordinance	No	
Other Hazard Ordinance (steep slope, wildfire, snow loads, etc.)	No	
Other:	No	

Available resources including staff, municipal groups, and technology are all vital for a community to be able to implement hazard mitigation. Keenesburg is fortunate to have many of these capabilities identified in Table 158 and are currently increasing these abilities.

Table 158. Administrative & Technical Capabilities

Mitigation Capability	Utilized?	Comments
Planning Commission	Yes	
Mitigation Planning Committee	No	

Mitigation Capability	Utilized?	Comments
Maintenance Programs (tree trimming, clearing drainage, etc.)	Yes	Easement, cleaned and cleared, tree trimming in progress, Tree USA town in future
Emergency Manager	Yes	Fire Chief SE Weld FPD
Building Official	Yes	Contract Charles Abbott & Assoc, Troy Dicker
Floodplain Administrator	Yes	Mark Grey
Community Planner	Yes	Contract, Todd Hodges
Transportation Planner	In progress	2021- transportation plan-hiring position
Civil Engineer	Yes	Kent Bruxvoort
GIS Capability	In progress	goal for 2021
Resiliency Planner	No	
Other:	No	
Warning Systems / Services (flood)	Yes	Emergency Siren-All Hazards
Warning Systems / Services (other / multi hazard)	Yes	Emergency Siren, CodeRed, IPAWS
Grant Writing / Management	Yes	Debra Chumley
Other:	No	

The ability of a community to implement a comprehensive mitigation strategy is largely dependent on available funding. These related municipal capabilities are outlined in Table 159 and show that Keenesburg utilizes a broad range of financial tools that can support mitigation activities.

Table 159. Financial Capabilities

Mitigation Capability	Utilized?	Comments
Levy for Specific Purposes with Voter Approval	No	
Utilities Fees	Yes	Water, Sewer
System Development / Impact Development Fee	Yes	
General Obligation Bonds to Incur Debt	Yes	Sales Tax Revenue Bond
Special Tax Bonds to Incur Debt	No	
Open Space / Conservation Fund	Yes	
Stormwater Utility Fees	No	
Capital Improvement Project Funding	Yes	Capital Improvement Fund
Community Development Block Grants (CDBG)	Yes	Participating with Weld County
Withheld spending in hazard-prone areas	No	
Other:	No	

Education and outreach are important capabilities that allow a community to continue the conversation with their public regarding hazard risk and opportunities to mitigate. Table 160 shows that Keenesburg does leverage some of these capabilities and would benefit by expanding upon these efforts.

Table 160. Education & Outreach Capabilities

Mitigation Capability	Utilized?	Comments
Public Hazard Education / Outreach Program	No	
Local Citizen Groups That Communicate Hazard Risks	No	
Firewise	No	
NOAA StormReady Program	Yes	SE Weld Fire Protection District
Other:	No	

7.12.4 Mitigation Actions

The mitigation actions identified by the Town during the Plan update are included in Table 161Table 73. Three actions from the 2016 Plan have been carried over into the Town's updated mitigation strategy.

Table 161. 2021 Mitigation Actions

ID	Organization	Action
2021-67	1-Keenesburg	Floodplain Training
2021-68	2-Keenesburg	Notify Travelling Public about Shelter Locations
2021-69	3-Keenesburg	Tornado Warning System Public Education
2021-103	4-Keenesburg	Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning

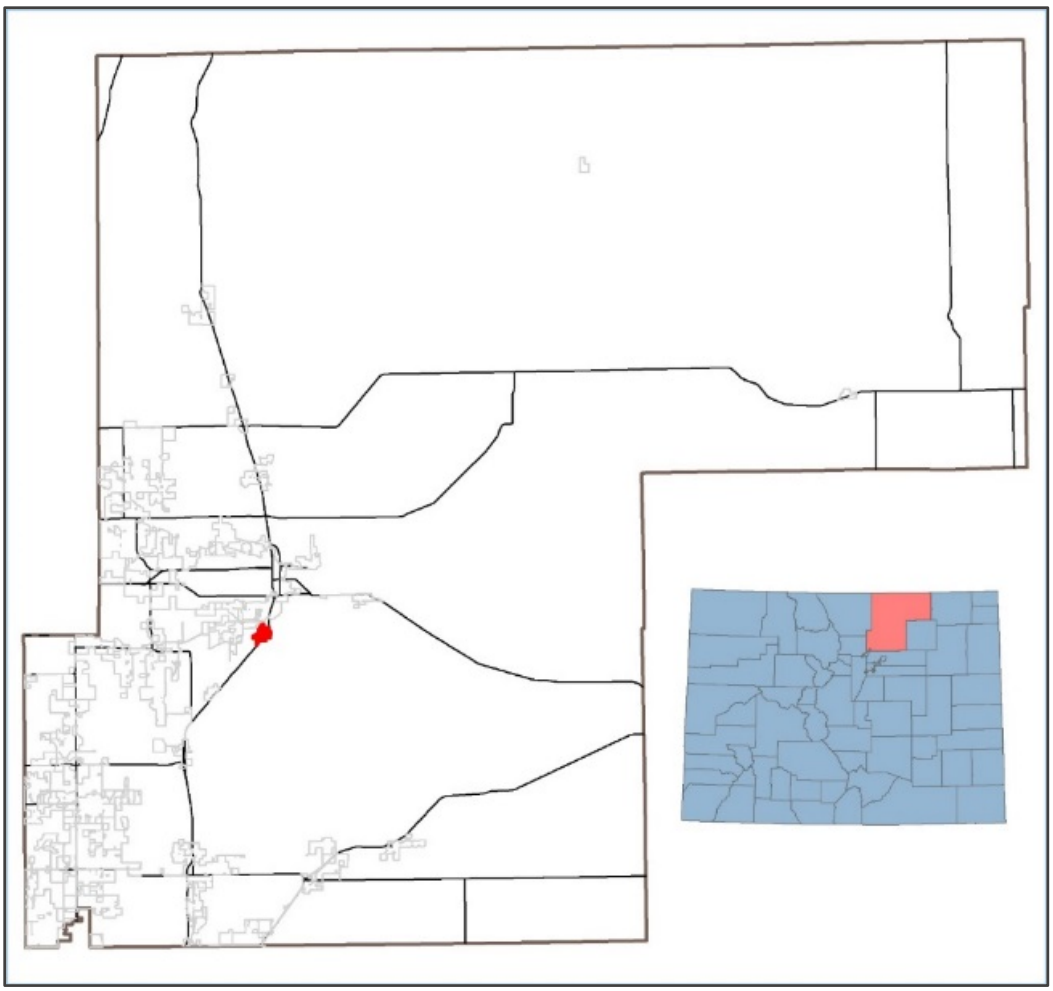
7.13 Town of LaSalle

The LaSalle 2018 Comprehensive Plan identified guiding principles to inform decisions for the present and future of the community. These are based on the community's core values and are used to guide decisions, prioritize allocation of resources and preserve the unique qualities that define LaSalle. These Guiding Principles are:

- Preserve LaSalle's Small-Town Character.
- Ensure growth pays its own way and contributes to the community as a whole.
- Continue to maintain and upgrade infrastructure and community facilities.
- Foster economic vitality and resilience by supporting existing local businesses and attracting new businesses.
- Approach decisions in the spirit of cooperation and work together to find solutions that are beneficial to the community.
- Form and nurture partnerships with other communities and agencies to help strengthen LaSalle and enhance community services.
- Respect and protect the environment.
- Preserve and enhance opportunities and services to support and attract families.
- Be resilient economically and environmentally.
- Continue to acknowledge and support the local agricultural community and responsible development of mineral resources within the LaSalle Planning Area.

7.13.1 Community Profile

LaSalle is located approximately 7 miles south of Greeley. The Town is bisected by U.S Highway 85 and houses a switchyard for Union Pacific Railway. The Town has a total area of 0.7 square miles and is an agricultural community, although recent growth has started to diversify the economy.



The table below summarizes development information of the Town of LaSalle. Current information for specific characteristics of the population is only available from the US Census Bureau for municipalities with populations over 5,000 people.

Table 162. Town of LaSalle Demographics

LaSalle	Colorado	
2,337	5,758,736	Population, 2019
18.9%	14.5%	Population, % change April 1, 2010 to July 1, 2019
2.8	2.56	Persons Per Household, 2019

Note: Recent data is unavailable from the US Census Bureau for some categories, based on the size of the municipality. Source: US Census Bureau

7.13.2 Risk and Vulnerability Assessment

Table 163 summarizes the results of the RF ranking exercise performed by the Town of LaSalle. The results represent the relative risk of different hazards across the municipality from the perspective of local stakeholders and subject matter experts. Note the final RF Ranking values in this table include the weighting factors detailed in the Risk Assessment chapter of this Plan.

Table 163. Risk Factor Results for LaSalle

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	RF Ranking
Agricultural Hazards	2	2	2	1	2	1.9
Cyber Hazards	2	1	4	4	2	2.3
Drought	4	3	4	1	4	3.4
Earthquake	1	1	1	1	1	1.0
Extreme Temps.	2	2	3	1	2	2.1
Flood	3	3	3	4	4	3.2
Hazmat Release	3	3	4	4	2	3.2
Land Subsidence	1	1	1	1	1	1.0
Prairie Fire	2	1	1	4	1	1.6
Public Health Hazards	4	4	4	2	4	3.8
Severe Storms	4	3	4	2	3	3.4
Tornado & Wind	3	3	3	4	1	2.9

The conclusions drawn from the qualitative assessment are organized into three categories shown in the following table and provide a summary of hazard risk for LaSalle as a whole - based on High, Moderate, or Low risk designations. This process helped frame ongoing planning discussions around local and regional hazard risks and assisted with the development of the Plan's updated mitigation strategy.

Table 164. Hazard Risk Conclusions for LaSalle

HIGH RISK (2.5 or higher)	**Drought, Flood, Hazmat Release, Public Health Hazards, Severe Storms, Tornado & Straight-Line Wind**
MODERATE RISK (2.0 – 2.4)	**Cyber Hazards, Extreme Temperatures**
LOW RISK (1.9 or lower)	**Agricultural Hazards, Earthquake, Land Subsidence, Prairie Fire**

Since the 2016 Plan, the Town has decreased the assessed risk from earthquake to Low Risk (formerly Moderate) and from extreme temperatures to Moderate Risk (formerly High). LaSalle increased its risk assessment for flood to be High Risk (formerly Moderate). Besides the newly added hazards of agricultural hazards and cyber hazards, all other risk rankings remain the same.

The following sections highlight the Town of LaSalle's High Risk hazards and include any specific content relevant to the Town. They are intended to supplement information included in each hazard profile in the main body of this Plan.

7.13.2.1 Drought

The community vulnerability to drought is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to this hazard. There are no previous events to document specific to LaSalle. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.13.2.2 Flood (including Dam & Levee Failure)

Flood is a very localized hazard and vulnerability is unique for each municipality. There are no previous events to document specific to LaSalle.

The Town of LaSalle's overall vulnerability to flood is considerably less than that of the rest of the County. LaSalle has no address points located in the Special Flood Hazard Area (SFHA), compared to the 1.6% of Countywide addresses that are located in the SFHA.

However, flood events can occur as a result of dam or levee failure. In these cases, flood waters may not follow the typical floodplains mapped as the SFHA.

Overall vulnerability to flooding in dam inundation areas is increased considerably for the Town of LaSalle, where 81.4% of address points (751) are located within these dam inundation areas. This is a significantly larger percentage of structures at risk, as compared to 1.0% of Countywide addresses located in these areas.

Additionally, the Town is the first jurisdiction downstream from eight dams. One has a hazard classification of Significant and currently has an Emergency Action Plan (EAP). None are classified as High. Additional information pertaining to dams can be referenced at the State's Dam Safety website: https://dwr.state.co.us/Tools/DamSafety/Dams .

The Town's overall vulnerability to flooding in areas protected by known levees is substantially different from the rest of the County. LaSalle has no address points located within levee protected areas. This is compared to 1.6% of Countywide addresses located in these areas.

It is important to note that this analysis is only as good as best available data allows. Current floodplains, dam inundation areas, and areas protected by levees may not currently map all hazard areas. Additionally, mapped hazard areas may be dated and in need of updated mapping and analysis.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.13.2.3 Hazmat Release

Vulnerability to hazmat release is increased for the Town of LaSalle, mainly due to the location of a CDOT hazardous materials route through the community. Additionally, railroads span across LaSalle which present their own increased risk for hazmat release. As is true for the entire County, the presence of any businesses that store hazardous materials also increases the risk for these types of events.

Based on data supplied by the Pipeline and Hazardous Materials Safety Administration's (PHMSA) Incident Reports Database there have been six events that have occurred within the Town of LaSalle between 1991 and 2019. One of these was the derailment and rollover of a train car. The rest were due to overfilling and improper preparation for transport. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.13.2.4 Public Health Hazards

Vulnerability to public health hazards is not expected to be noticeably different from the rest of the County. Individuals at a higher risk to this hazard include the aging adult population, those with a chronic illness, such as diabetes, asthma, coronary heart disease, and those who are obese or overweight. Other populations at risk include children, those in poverty and those with a disability. This data is collected at census tract level by the Centers for Disease Control (CDC) and is unavailable at a

municipality level. The data by census tract can be found in the Colorado Department of Health and Environment Open Data database here.

Future occurrences are expected to mirror that of the County. There are no previous events to document specific to the Town of LaSalle. Refer to Chapter 5 – Risk Assessment of this Plan for additional details, including a summary of the higher risk population demographics for Weld County and the State.

7.13.2.5 Severe Storm (including Hail, Lightning, & Winter Storm)

Vulnerability to severe storm, which includes hail, lightning, and winter storm, is not noticeably different from the rest of the County. LaSalle's more densely developed areas experience the greatest risk, in addition to potential greater losses to the agriculture sector. Any structures not constructed to meet recent building codes experience the greatest risk from structural damages.

According to the NOAA's Storm Events Database, between 2015 and 2020, the Town of LaSalle has had four severe storm events. All of these events resulted in reports of hail, which ranged in size from .75 inch to 1 inch. None of these events resulted in reported damage to property or crops and no injuries or deaths.

No other events for severe storm, specific to LaSalle, were recorded over this time period.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.13.2.6 Tornado & Straight-Line Wind

Vulnerability to tornado & straight-line wind is not noticeably different from the rest of the County. LaSalle's more densely developed areas experience the greatest risk, in addition to any structures not constructed to meet recent building codes.

Between 2015 and 2020, there were no reports of occurrences specific to LaSalle. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.13.3 Capabilities Assessment

The capability assessment examines the ability of the Town of LaSalle to implement and manage the comprehensive mitigation strategy laid out in this Plan. The strengths, weaknesses, and resources of the community are identified here as a means for evaluating and maintaining effective and appropriate management of the Town's hazard mitigation program.

Planning and regulatory capabilities are powerful tools for implementing hazard mitigation. The Town currently utilizes or has implemented most of these capabilities shown in Table 165. It is important for all municipalities to regularly review each of these tools, to identify opportunities for further risk reduction efforts.

Table 165. Planning & Regulatory Capabilities

Mitigation Capability	Utilized?	Comments
Comprehensive, Master, or General Plan	Yes	
Capital Improvement Program or Plan (CIP)	Yes	Reviewed annually

Mitigation Capability	Utilized?	Comments
Floodplain Management Plan		County Plan
Stormwater Program / Plan	Yes	MS4-
Community Wildfire Protection Plan (CWPP)	No	
Erosion / Sediment Control Program	Yes	
Economic Development Plan	Yes	
Other:		
Building Codes (Year)	Yes	2003 IBC
Site Plan Review Requirements	Yes	
Other:	No	
Zoning Ordinance (Land Use)	Yes	
Subdivision Ordinance	Yes	
National Flood Insurance Program (NFIP) Participant	Yes	
Flood Insurance Study / Flood Insurance Rate Map / DFIRM	Yes	
Floodplain Ordinance	Yes	
Elevation Certificates for Floodplain Development	Yes	FEMA
Community Rating System (CRS) Participant	No	
Open Space / Conservation Program	Yes	
Growth Management Ordinance	No	
Stormwater Ordinance	Yes	
Other Hazard Ordinance (steep slope, wildfire, snow loads, etc.)	Yes	Building Code
Other:	No	

Available resources including staff, municipal groups, and technology are all vital for a community to be able to implement hazard mitigation. LaSalle is fortunate to have most all of these capabilities identified in Table 166.

Table 166. Administrative & Technical Capabilities

Mitigation Capability	Utilized?	Comments
Planning Commission	Yes	
Mitigation Planning Committee	Yes	Staff
Maintenance Programs (tree trimming, clearing drainage, etc.)	Yes	
Emergency Manager	Yes	Carl Harvey
Building Official	Yes	Procode
Floodplain Administrator	Yes	Carl Harvey
Community Planner	Yes	
Transportation Planner	Yes	Staff

Mitigation Capability	Utilized?	Comments
Civil Engineer	Yes	Contracted
GIS Capability	Yes	County
Resiliency Planner	No	
Other:	No	
Warning Systems / Services (flood)	Yes	CodeRed, IPAWS
Warning Systems / Services (other / multi hazard)	Yes	CodeRed, IPAWS
Grant Writing / Management	Yes	
Other:	No	

The ability of a community to implement a comprehensive mitigation strategy is largely dependent on available funding. These related municipal capabilities are outlined in Table 167 and show that LaSalle utilizes a broad range of financial tools that can support mitigation activities.

Table 167. Financial Capabilities

Mitigation Capability	Utilized?	Comments
Levy for Specific Purposes with Voter Approval	No	Clerk
Utilities Fees	Yes	Water, Sewer, Trash, Stormwater
System Development / Impact Development Fee	Yes	
General Obligation Bonds to Incur Debt	No	
Special Tax Bonds to Incur Debt	No	
Open Space / Conservation Fund	No	
Stormwater Utility Fees	Yes	
Capital Improvement Project Funding	Yes	Annual Budgeted
Community Development Block Grants (CDBG)	Yes	County
Withheld spending in hazard-prone areas	No	
Other:	Yes	DOLA

Education and outreach are important capabilities that allow a community to continue the conversation with their public regarding hazard risk and opportunities to mitigate. Table 168 shows that LaSalle could benefit by expanding upon these capabilities.

Table 168. Education & Outreach Capabilities

Mitigation Capability	Utilized?	Comments
Public Hazard Education / Outreach Program	No	Occasional events, no formal program
Local Citizen Groups That Communicate Hazard Risks	No	

Mitigation Capability	Utilized?	Comments
Firewise	No	
NOAA StormReady Program	No	
Other:	No	

7.13.4 Mitigation Actions

The new mitigation action identified by the Town during the Plan update is included in Table 169. Two actions from the 2016 Plan have been carried over into the Town's updated mitigation strategy.

Table 169. 2021 Mitigation Actions

ID	Organization	Action
2021-70	1-LaSalle	Community Preparedness Education
2021-71	2-LaSalle	Develop Upkeep Schedule for Emergency Power Systems
2021-104	3-LaSalle	Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning

7.14 Town of Mead

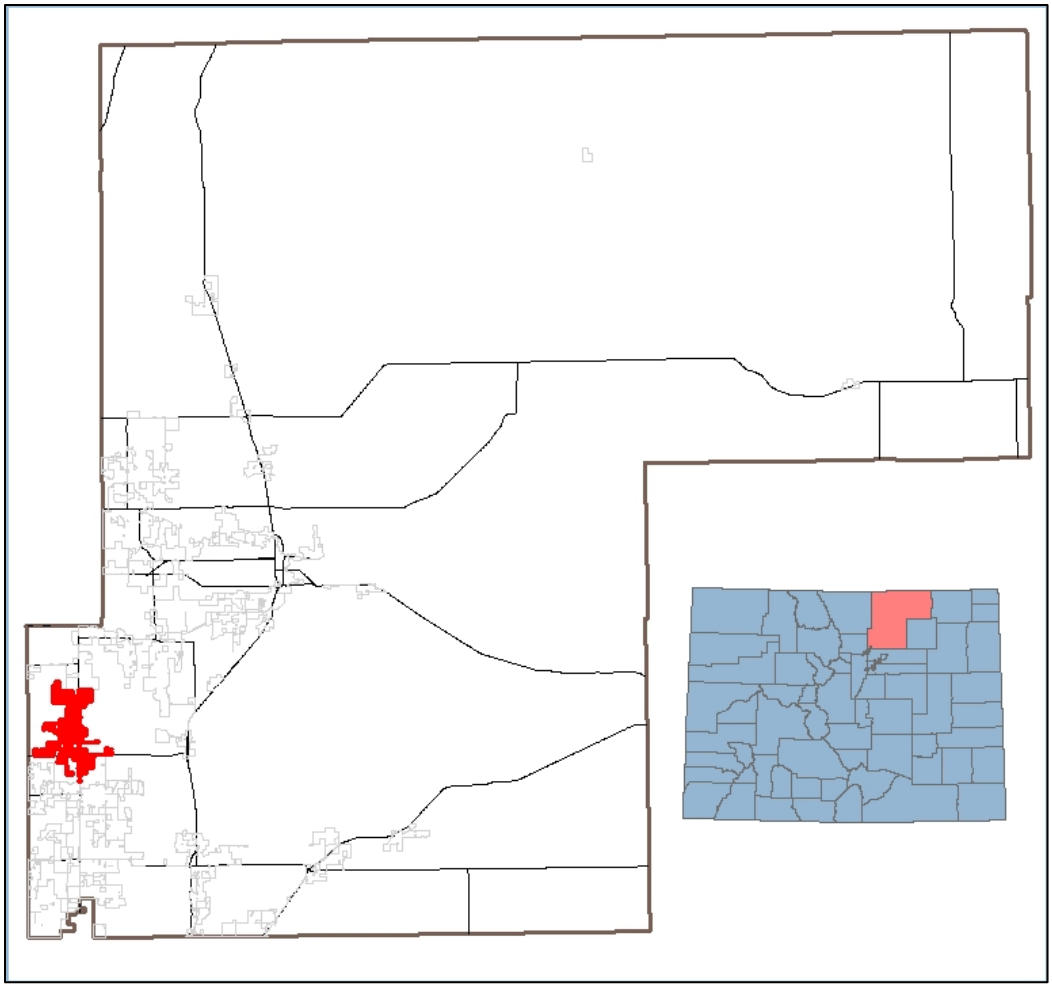
In the 2018 Comprehensive Plan for the Town of Mead, a shared community plan was developed through stakeholder input. The major themes of this plan guide the direction and decisions of community development.

The major themes are:

- A small-town community character
- Diverse economy
- Friendly neighborhoods
- Strong connectivity
- Dynamic parks, recreation and open space
- An expansive natural and agrarian setting
- Thoughtful community planning, facilities and services

7.14.1 Community Profile

The Town of Mead is located on the western edge of Weld County. The town's total area is 4.4 square miles, although the Town is included in the larger planning area spanning almost 50 square miles. Mead is bisected by both Interstate 25 and Highway 66. Highway 66 corridor is the southern scenic gateway into Rocky Mountain National Park and more than 80,000 people drive through the Town limits each day.



The table below summarizes development information of the Town of Mead. Current information for specific characteristics of the population is only available from the US Census Bureau for municipalities with populations over 5,000 people.

Table 170. Town of Mead Demographics

Mead	Colorado	
4,677	5,758,736	Population, 2019
36.1%	14.5%	Population, % change April 1, 2010 to July 1, 2019
3.03	2.56	Persons Per Household, 2019

Note: Recent data is unavailable from the US Census Bureau for some categories, based on the size of the municipality. Source: US Census Bureau

7.14.2 Risk and Vulnerability Assessment

Table 171 summarizes the results of the RF ranking exercise performed by the Town of Mead. The results represent the relative risk of different hazards across the municipality from the perspective of local stakeholders and subject matter experts. Note the final RF Ranking values in this table include the weighting factors detailed in the Risk Assessment chapter of this Plan.

Table 171. Risk Factor Results for Mead

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	RF Ranking
Agricultural Hazards	3	2	3	1	4	2.6
Cyber Hazards	3	3	3	4	4	3.2
Drought	3	2	3	1	4	2.6
Earthquake	1	3	3	4	2	2.4
Extreme Temps.	3	3	3	2	3	2.9
Flood	3	3	3	4	4	3.2
Hazmat Release	3	3	3	4	2	3.0
Land Subsidence	1	1	1	4	1	1.3
Prairie Fire	3	1	2	4	1	2.1
Public Health Hazards	4	4	4	1	4	3.7
Severe Storms	4	3	4	2	3	3.4
Tornado & Wind	3	3	3	4	1	2.9

The conclusions drawn from the qualitative assessment are organized into three categories shown in the following table and provide a summary of hazard risk for Mead as a whole - based on High, Moderate, or Low risk designations. This process helped frame ongoing planning discussions around local and regional hazard risks and assisted with the development of the Plan's updated mitigation strategy.

Table 172. Hazard Risk Conclusions for Mead

HIGH RISK (2.5 or higher)	**Agricultural Hazards, Cyber Hazards, Drought, Extreme Temperatures, Flood, Hazmat Release, Public Health Hazards, Severe Storms, Tornado & Straight-Line Wind**
MODERATE RISK (2.0 – 2.4)	**Earthquake, Prairie Fire**
LOW RISK (1.9 or lower)	**Land Subsidence**

Since the 2016 Plan, the Town has increased the assessed risk from drought to High Risk (formerly Low) and from earthquake and prairie fire to Moderate Risk (formerly Low). Mead increased its risk assessment for extreme temperatures, flood, and hazmat release to be High Risk (all formerly Moderate). Public health hazards, previously a Low Risk, are now considered High. Besides the newly added hazards of agricultural hazards and cyber hazards, all other risk rankings remain the same.

The following sections highlight the Town of Mead's High Risk hazards and include any specific content relevant to the Town. They are intended to supplement information included in each hazard profile in the main body of this Plan.

7.14.2.1 Agricultural Hazards (including Disease & Pests)

Vulnerability to agricultural hazards is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to these hazards. There are no previous events to document specific to the Town of Mead. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.14.2.2 Cyber Hazards

For any municipality, vulnerability to cyber hazards does not vary from that of the County as a whole. While there are no documented cyber events impacting Mead, the threat of this hazard is continually increasing. There are no previous events to document specific to the Town of Mead. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.14.2.3 Drought

The community vulnerability to drought is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to this hazard. There are no previous events to document specific to the Town of Mead. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.14.2.4 Extreme Temperatures

The Town of Mead's vulnerability to extreme temperatures is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to these hazards due to potential crop and livestock losses. Additionally, individuals at a higher risk to extreme temperatures include those with mobility issues, independent living difficulty, the elderly, low-income families, outdoor laborers, and those experiencing homelessness. Data for these demographics is collected at census tract level, however snapshot data for populations that can fluctuate drastically, such as the number of outdoor laborers and those experiencing homelessness is not included. These are still considerable populations in the County and the Town of Mead and local efforts to quantify these populations periodically can help with mitigation planning.

The data for high risk populations has been analyzed by Colorado Department of Public Health and Environment (CDPHE) and has been used to create Community Inclusions maps. These maps can be zoomed into specific census tracts for municipalities and communities, illustrating the population variances. Refer to Chapter 4 for examples of these maps for Weld County.

There are no previous events to document specific to the Town of Mead. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.14.2.5 Flood (including Dam & Levee Failure)

Flood is a very localized hazard and vulnerability is unique for each municipality. There are no previous events to document specific to Mead.

The Town of Mead's overall vulnerability to flood is noticeably different from the rest of the County. Mead has 12 address points located in the Special Flood Hazard Area (SFHA). This equates to 0.5% of all address points for the Town, as compared to 1.6% of Countywide addresses located in the SFHA.

Flood events can also occur as a result of dam or levee failure. In these cases, flood waters may not follow the typical floodplains mapped as the SFHA.

The Town of Mead's overall vulnerability to flooding in dam inundation areas is significantly lower than the rest of the County. Mead has one address point located in these dam inundation areas. This equates to 0.04% of all address points for the Town, as compared to 1.0% of Countywide addresses located in these areas.

Additionally, the Town is the first jurisdiction downstream from two dams. Both have a hazard classification of Low. Additional information pertaining to dams can be referenced at the State's Dam Safety website: https://dwr.state.co.us/Tools/DamSafety/Dams .

The Town's overall vulnerability to flooding in areas protected by known levees is substantially different from the rest of the County. Mead has no address points located in these levee protected areas. This is compared to 1.6% of Countywide addresses located in these areas.

It is important to note that this analysis is only as good as best available data allows. Current floodplains, dam inundation areas, and areas protected by levees may not currently map all hazard areas. Additionally, mapped hazard areas may be dated and in need of updated mapping and analysis.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.14.2.6 Hazmat Release

Vulnerability to hazmat release is increased for the Town of Mead, mainly due to the location of a CDOT hazardous materials route through the community. Additionally, railroads span across Mead which present their own increased risk for hazmat release. As is true for the entire County, the presence of any businesses that store hazardous materials also increases the risk for these types of events.

Based on data supplied by the Pipeline and Hazardous Materials Safety Administration's (PHMSA) Incident Reports Database there have been six events within Mead between 1991 and 2019. These events were due to overfilling and improper preparation for transport. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.14.2.7 Public Health Hazards

Vulnerability to public health hazards is not expected to be noticeably different from the rest of the County. Individuals at a higher risk to this hazard include the aging adult population, those with a chronic illness, such as diabetes, asthma, coronary heart disease, and those who are obese or overweight. Other populations at risk include children, those in poverty and those with a disability. This data is collected at census tract level by the Centers for Disease Control (CDC) and is unavailable at a municipality level. The data by census tract can be found in the Colorado Department of Health and Environment Open Data database here.

Future occurrences are expected to mirror that of the County. There are no previous events to document specific to Mead. Refer to Chapter 5 – Risk Assessment of this Plan for additional details, including a summary of the higher risk population demographics for Weld County and the State.

7.14.2.8 Severe Storms (including Hail, Lightning, & Winter Storm)

Vulnerability to severe storm, which includes hail, lightning, and winter storm, is not noticeably different from the rest of the County. The Town of Mead's more densely developed areas experience the greatest risk, in addition to potential greater losses to the agriculture sector. Any structures not constructed to meet recent building codes experience the greatest risk from structural damages.

According to the NOAA's Storm Events Database, between 2015 and 2020, the Town of Mead has had seven severe storm events. All of these events resulted in reports of hail, which ranged in size from .88 inch to 1.25 inches. None of these events resulted in reported damage to property or crops and no injuries or deaths.

No other events for severe storm, specific to Mead, were recorded over this time period.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.14.2.9 Tornado & Straight-Line Wind

Vulnerability to tornado & straight-line wind is not noticeably different from the rest of the County. Mead's more densely developed areas experience the greatest risk, in addition to any structures not constructed to meet recent building codes.

Between 2015 and 2020, there were no reports of occurrences specific to Mead. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.14.3 Capabilities Assessment

The capability assessment examines the ability of the Town of Mead to implement and manage the comprehensive mitigation strategy laid out in this Plan. The strengths, weaknesses, and resources of the community are identified here as a means for evaluating and maintaining effective and appropriate management of the Town's hazard mitigation program.

Planning and regulatory capabilities are powerful tools for implementing hazard mitigation. The Town currently utilizes or has implemented most of these capabilities shown in Table 173. It is important for all municipalities to regularly review each of these tools, to identify opportunities for further risk reduction efforts.

Table 173. Planning & Regulatory Capabilities

Mitigation Capability	Utilized?	Comments
Comprehensive, Master, or General Plan	Yes	
Capital Improvement Program or Plan (CIP)	No	Informal
Floodplain Management Plan	No	
Stormwater Program / Plan	Yes	
Community Wildfire Protection Plan (CWPP)	No	
Erosion / Sediment Control Program	Yes	
Economic Development Plan	No	
Other:	No	
Building Codes (Year)	Yes	2018
Site Plan Review Requirements	Yes	
Other:	No	
Zoning Ordinance (Land Use)	Yes	
Subdivision Ordinance	Yes	
National Flood Insurance Program (NFIP) Participant	Yes	
Flood Insurance Study / Flood Insurance Rate Map / DFIRM	Yes	
Floodplain Ordinance	Yes	

Mitigation Capability	Utilized?	Comments
Elevation Certificates for Floodplain Development	Yes	
Community Rating System (CRS) Participant	No	
Open Space / Conservation Program	Yes	
Growth Management Ordinance	Yes	
Stormwater Ordinance	Yes	Master Plan
Other Hazard Ordinance (steep slope, wildfire, snow loads, etc.)	No	
Other:	No	

Available resources including staff, municipal groups, and technology are all vital for a community to be able to implement hazard mitigation. Mead is fortunate to have most all of these capabilities identified in Table 174.

Table 174. Administrative & Technical Capabilities

Mitigation Capability	Utilized?	Comments
Planning Commission	Yes	
Mitigation Planning Committee	No	
Maintenance Programs (tree trimming, clearing drainage, etc.)	Yes	
Emergency Manager	No	
Building Official	Yes	
Floodplain Administrator	Yes	Town Engineer
Community Planner	Yes	In-house Staff
Transportation Planner	Yes	Contract Staff
Civil Engineer	Yes	In-house/Contract Staff
GIS Capability	Yes	In-house/Contract Staff
Resiliency Planner	No	
Other:	No	
Warning Systems / Services (flood)	Yes	Currently identified systems: Weld County dispatch; CodeRed; social media
Warning Systems / Services (other / multi hazard)	Yes	Currently identified systems: Weld County dispatch; CodeRed; social media
Grant Writing / Management	Yes	In-house Staff
Other:	No	

The ability of a community to implement a comprehensive mitigation strategy is largely dependent on available funding. These related municipal capabilities are outlined in Table 175 and show that Mead utilizes a broad range of financial tools that can support mitigation activities.

Table 175. Financial Capabilities

Mitigation Capability	Utilized?	Comments
Levy for Specific Purposes with Voter Approval	No	General Mill Levy 11.522, but no specific purpose mill levy
Utilities Fees	Yes	Sewer PIF
System Development / Impact Development Fee	Yes	
General Obligation Bonds to Incur Debt	No	
Special Tax Bonds to Incur Debt	No	
Open Space / Conservation Fund	Yes	Impact Fees
Stormwater Utility Fees	Yes	Impact Fees
Capital Improvement Project Funding	Yes	Impact Fees
Community Development Block Grants (CDBG)	Yes	IGA with Weld County for CDBG
Withheld spending in hazard-prone areas	No	
Other:	No	

Education and outreach are important capabilities that allow a community to continue the conversation with their public regarding hazard risk and opportunities to mitigate. Table 176 shows that Mead could benefit by expanding upon these capabilities.

Table 176. Education & Outreach Capabilities

Mitigation Capability	Utilized?	Comments
Public Hazard Education / Outreach Program	No	
Local Citizen Groups That Communicate Hazard Risks	No	
Firewise	No	
NOAA StormReady Program	No	
Other:	No	

7.14.4 Mitigation Actions

The new mitigation actions identified by the Town during the Plan update are included in Table 177. Two actions from the 2016 Plan have been carried over into the Town's updated mitigation strategy.

Table 177. 2021 Mitigation Actions

ID	Organization	Action
2021-72	1-Mead	Policy Group Training for Elected Officials
2021-73	2-Mead	Update Policies and Plans with Mitigation Principles -North Creek Flood Plain Analysis

ID	Organization	Action
2021-74	3-Mead	Update Policies and Plans with Mitigation Principles - Emergency Operations Plan
2021-75	4-Mead	Update Facilities- Public Works facility – Design & Construction
2021-76	5-Mead	Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning

7.15 Town of Milliken

Based on the Town of Milliken 2015 Comprehensive Plan update, the Town's vision is *"founded on the premise that the vitality and future growth of the Town and the quality of life of its residents are dependent upon the balancing of multiple contributing factors."*

These contributing factors were used to create guiding principles, which serve as a framework for organizing planning and recommended actions for implementation in the community.

The Town's guiding principles are as follows:

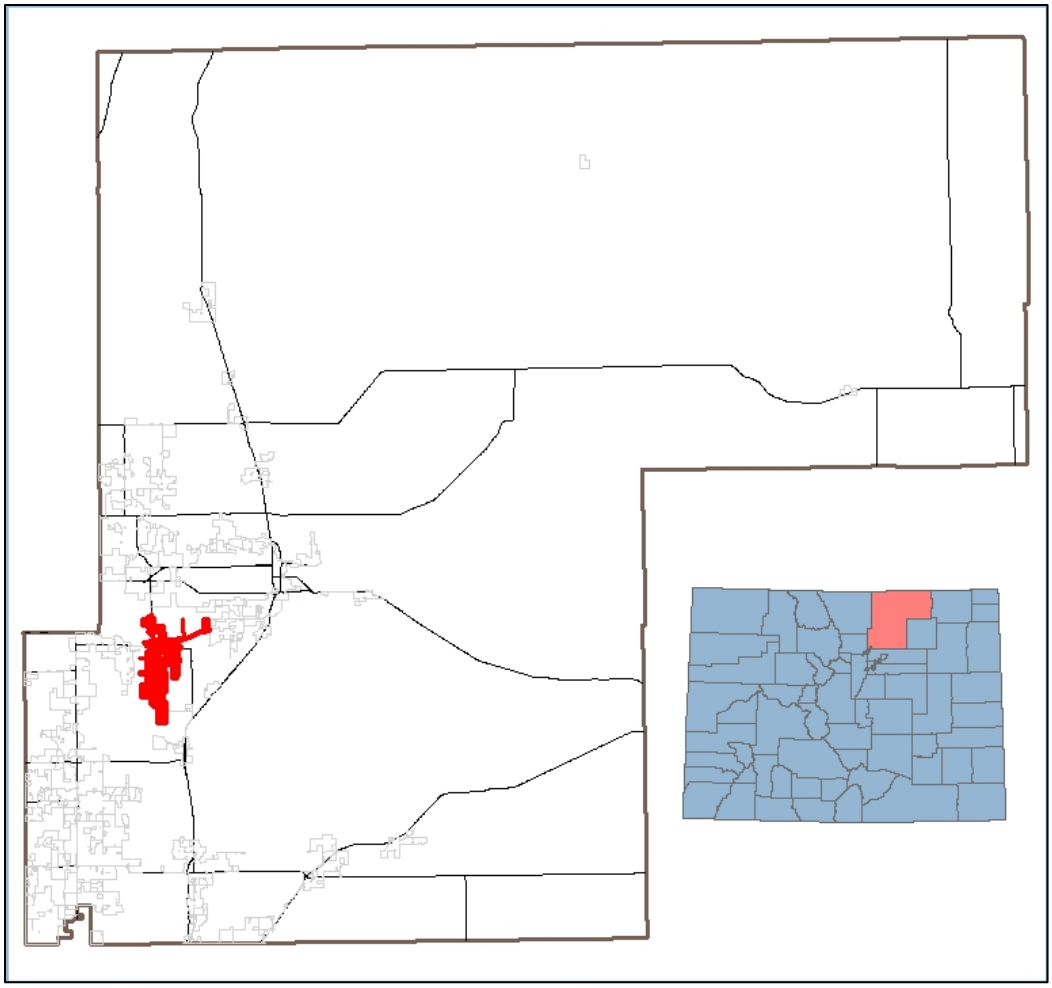
- A strong, diversified economic base
- A vibrant downtown that functions as the heart of the community
- A complete and highly accessible system of parks, open space, trails, and recreational opportunities
- A distinct community identity that reflects Milliken's cultural, archaeological, historical, and agricultural resources
- A fiscally sustainable pattern of development
- A diverse mix of housing types to meet the needs of residents of all ages, incomes, and abilities
- A safe and disaster resilient community

The Town recently conducted its own *Town of Milliken Risk Assessment – Planning for Hazards Implementation Project (November 2018)*. Readers are encouraged to reference this document in addition to the content contained in this updated HMP.

7.15.1 Community Profile

Milliken is approximately 5.7 square miles with no large bodies of water. The Town is primarily a farming community and sits six miles east of Interstate 25 in the western part of Weld County between the Town of Mead and the City of Greeley.

Agricultural uses make up a large portion of the overall land use mix in the Town. Much of Milliken's planning area is part of a single Planned Unit Development (PUD)—the Centennial Master Plan—that is being developed incrementally over time. Some portions of the original PUD have been rezoned from industrial to multifamily residential use.



The table below summarizes key demographic and development related characteristics of the Town of Milliken.

Table 178. Town of Milliken Demographics

Milliken	Colorado	
8,164	5,758,736	Population, 2019
45.4%	14.5%	Population, % change April 1, 2010 to July 1, 2019
4.9%	5.8%	% Population under 5 years, 2019
28.6%	21.9%	% Population under 19 years, 2019
8.3%	14.6%	% Population 65 years and over, 2019
87.8%	64.9%	Homeownership Rate, 2019
2.79	2.56	Persons Per Household, 2019
$72,101	$68,811	Median Household Income, 2014- 2018
5.6%	9.3%	Persons below poverty level, %, 2014- 2018
5.2%	7.3%	% Population under 65 years, with a disability 2014-2018
11.7%	17%	Language other than English spoken at home, % age 5+, 2014- 2018

Source: US Census Bureau

7.15.2 Risk and Vulnerability Assessment

Table 179 summarizes the results of the RF ranking exercise performed by the Town of Milliken. The results represent the relative risk of different hazards across the municipality from the perspective of local stakeholders and subject matter experts. Note the final RF Ranking values in this table include the weighting factors detailed in the Risk Assessment chapter of this Plan.

Table 179. Risk Factor Results for Milliken

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	RF Ranking
Agricultural Hazards	2	2	2	1	2	1.9
Cyber Hazards	1	2	4	4	3	2.4
Drought	4	3	4	1	4	3.4
Earthquake	1	1	1	1	1	1.0
Extreme Temps.	2	2	3	1	2	2.1
Flood	4	4	2	4	4	3.6
Hazmat Release	3	3	2	4	2	2.8
Land Subsidence	1	1	1	1	1	1.0
Prairie Fire	3	1	2	4	1	2.1
Public Health Hazards	2	1	2	1	4	1.8
Severe Storms	3	2	2	4	1	2.4
Tornado & Wind	2	2	2	4	4	2.4

The conclusions drawn from the qualitative assessment are organized into three categories shown in the following table and provide a summary of hazard risk for Milliken as a whole - based on High, Moderate, or Low risk designations. This process helped frame ongoing planning discussions around local and regional hazard risks and assisted with the development of the Plan's updated mitigation strategy.

Table 180. Hazard Risk Conclusions for Milliken

HIGH RISK (2.5 or higher)	**Drought, Flood, Hazmat Release**
MODERATE RISK (2.0 – 2.4)	**Cyber Hazards, Extreme Temperatures, Prairie Fire, Severe Storms, Tornado & Straight-Line Wind**
LOW RISK (1.9 or lower)	**Agricultural Hazards, Earthquake, Land Subsidence, Public Health Hazards**

Since the 2016 Plan, the Town has increased the assessed risk from drought and hazmat release to High Risk (both formerly Moderate). Milliken decreased its risk assessment for land subsidence to be Low Risk (formerly Moderate). The Town also reduced assessed risk for prairie fire, severe storm, and tornado & straight-line wind to be Moderate (all previously High). Public health hazards, previously a Low Risk, are now considered High. Besides the newly added hazards of agricultural hazards and cyber hazards, all other risk rankings remain the same.

The following sections highlight the Town of Milliken's High Risk hazards and include any specific content relevant to the Town. They are intended to supplement information included in each hazard profile in the main body of this Plan.

7.15.2.1 Drought

The community vulnerability to drought is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to this hazard. There are no previous events to document specific to the Town of Milliken. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.15.2.2 Flood (including Dam & Levee Failure)

Flood is a very localized hazard and vulnerability is unique for each municipality. There are no previous events to document specific to Milliken.

The Town of Milliken's overall vulnerability to flood is significantly different from the rest of the County. Milliken has 1 address points located in the Special Flood Hazard Area (SFHA). This equates to 0.03% of all address points for the Town, as compared to 1.6% of Countywide addresses located in the SFHA.

Flood events can also occur as a result of dam or levee failure. In these cases, flood waters may not follow the typical floodplains mapped as the SFHA.

The Town of Milliken's overall vulnerability to flooding in dam inundation areas is not noticeably different from the rest of the County. Milliken has 22 address points located in these dam inundation areas. This equates to 0.6% of all address points for the Town, as compared to 1.0% of Countywide addresses located in these areas.

Additionally, the Town is the first jurisdiction downstream from six dams. Three of these have a hazard classification of Significant or High, but only two currently have Emergency Action Plans (EAPs). Additional information pertaining to dams can be referenced at the State's Dam Safety website: https://dwr.state.co.us/Tools/DamSafety/Dams .

The Town's overall vulnerability to flooding in areas protected by known levees is substantially different from the rest of the County. Milliken has no address points located in these levee protected areas. This is compared to 1.6% of Countywide addresses located in these areas.

It is important to note that this analysis is only as good as best available data allows. Current floodplains, dam inundation areas, and areas protected by levees may not currently map all hazard areas. Additionally, mapped hazard areas may be dated and in need of updated mapping and analysis.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.15.2.3 Hazmat Release

Vulnerability to hazmat release is increased, mainly due to railroads spanning across the Town of Milliken which present their own increased risk for hazmat release. As is true for the entire County, the presence of any businesses that store hazardous materials also increases the risk for these types of events.

Based on data supplied by the Pipeline and Hazardous Materials Safety Administration's (PHMSA) Incident Reports Database, seven events that have occurred within Milliken between 1991 and 2019. These events were due to overfilling and spillage caused by improper transport preparation. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.15.3 Capabilities Assessment

The capability assessment examines the ability of the Town of Milliken to implement and manage the comprehensive mitigation strategy laid out in this Plan. The strengths, weaknesses, and resources of the community are identified here as a means for evaluating and maintaining effective and appropriate management of the Town's hazard mitigation program.

Planning and regulatory capabilities are powerful tools for implementing hazard mitigation. The Town currently utilizes or has implemented many of these capabilities shown in Table 181. It is important for all municipalities to regularly review each of these tools, to identify opportunities for further risk reduction efforts.

Table 181. Planning & Regulatory Capabilities

Mitigation Capability	Utilized?	Comments
Comprehensive, Master, or General Plan	Yes	
Capital Improvement Program or Plan (CIP)	Yes	
Floodplain Management Plan	Yes	
Stormwater Program / Plan	Yes	
Community Wildfire Protection Plan (CWPP)	No	
Erosion / Sediment Control Program	No	
Economic Development Plan	No	
Other:	No	
Building Codes (Year)	Yes	2018
Site Plan Review Requirements	Yes	
Other:	No	
Zoning Ordinance (Land Use)	Yes	
Subdivision Ordinance	Yes	
National Flood Insurance Program (NFIP) Participant	Yes	
Flood Insurance Study / Flood Insurance Rate Map / DFIRM	Yes	
Floodplain Ordinance	Yes	
Elevation Certificates for Floodplain Development	Yes	
Community Rating System (CRS) Participant	No	
Open Space / Conservation Program	Yes	
Growth Management Ordinance	No	
Stormwater Ordinance	No	
Other Hazard Ordinance (steep slope, wildfire, snow loads, etc.)	No	
Other:	No	

Available resources including staff, municipal groups, and technology are all vital for a community to be able to implement hazard mitigation. Milliken is fortunate to have most all of these capabilities identified in Table 182.

Table 182. Administrative & Technical Capabilities

Mitigation Capability	Utilized?	Comments
Planning Commission	Yes	
Mitigation Planning Committee	No	
Maintenance Programs (tree trimming, clearing drainage, etc.)	Yes	
Emergency Manager	Yes	
Building Official	Yes	3rd Party BO - ProCode
Floodplain Administrator	Yes	
Community Planner	Yes	
Transportation Planner	No	
Civil Engineer	Yes	3rd Party Engineer
GIS Capability	No	Priority for the 2021 Budget
Resiliency Planner	No	
Other:	No	
Warning Systems / Services (flood)	No	
Warning Systems / Services (other / multi hazard)	Yes	Tornado Sirens
Grant Writing / Management	Yes	Existing Staff
Other:	No	

The ability of a community to implement a comprehensive mitigation strategy is largely dependent on available funding. These related municipal capabilities are outlined in Table 183 and show that Milliken utilizes a broad range of financial tools that can support mitigation activities.

Table 183. Financial Capabilities

Mitigation Capability	Utilized?	Comments
Levy for Specific Purposes with Voter Approval	Yes	
Utilities Fees	Yes	
System Development / Impact Development Fee	Yes	
General Obligation Bonds to Incur Debt	Yes	
Special Tax Bonds to Incur Debt	Yes	
Open Space / Conservation Fund	Yes	
Stormwater Utility Fees	Yes	
Capital Improvement Project Funding	Yes	

Mitigation Capability	Utilized?	Comments
Community Development Block Grants (CDBG)	Yes	
Withheld spending in hazard-prone areas	No	
Other:	No	

Education and outreach are important capabilities that allow a community to continue the conversation with their public regarding hazard risk and opportunities to mitigate. Table 184 shows that Milliken could benefit by expanding upon these capabilities.

Table 184. Education & Outreach Capabilities

Mitigation Capability	Utilized?	Comments
Public Hazard Education / Outreach Program	No	
Local Citizen Groups That Communicate Hazard Risks	No	
Firewise	No	
NOAA StormReady Program	No	
Other:	No	

7.15.4 Mitigation Actions

The new mitigation action identified by the Town during the Plan update is included in Table 185. Three actions from the 2016 Plan have been carried over into the Town's updated mitigation strategy.

Table 185. 2021 Mitigation Actions

ID	Organization	Action
2021-77	1-Milliken	Convert acquired land and property in the floodplain to Open Space
2021-78	2-Milliken	Procurement and Installation of Tornado Sirens
2021-79	3-Milliken	Storm Water Improvements Throughout Milliken
2021-80	4-Milliken	Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning

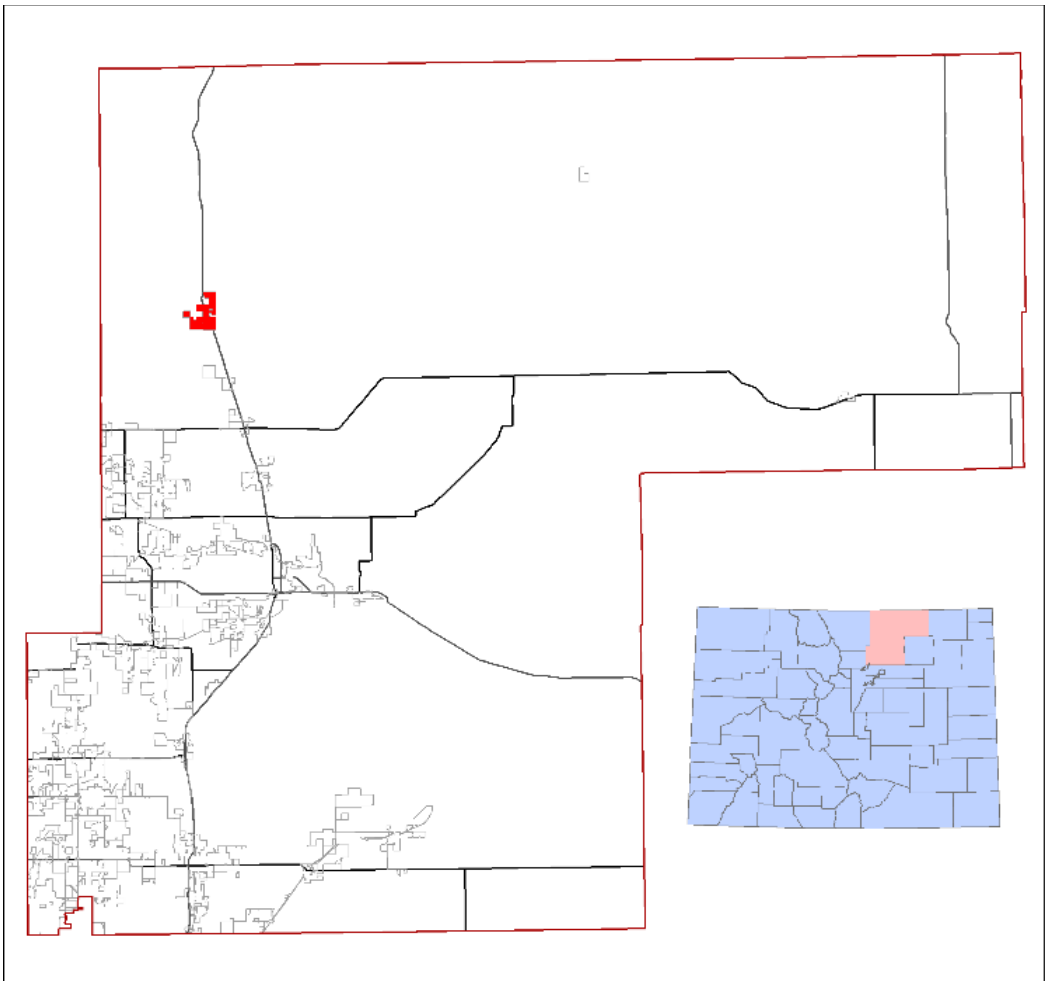
7.16 Town of Nunn

"Nunn will be a community where people and the environment come first; a place where our small-town charm and community spirit are celebrated and our history and peaceful quality of life are treasured. Our community will strive to provide exceptional services and housing, jobs, shopping and recreational opportunities for everyone."

-Town of Nunn Comprehensive Plan 2009

7.16.1 Community Profile

The Town of Nunn has a total area of 1.8 square miles, all of which is land, according to the United States Census Bureau. The growth and development of Nunn is driven by community members, especially their priorities and goals for the Town. The Town has utilized surveys, community events and workshops for important input from residents. One community event was a "Planning Fiesta" where feedback and discussion were critical to evaluating plans. An important workshop was with the local high school to ask students about their vision for a more dynamic Town of Nunn. The pride of community members in the Town is evident in their careful consideration of the future progress of Nunn.



The table below summarizes development information of the Town of Nunn. Current information for specific characteristics of the population is only available from the US Census Bureau for municipalities with populations over 5,000 people.

Table 186. Town of Nunn Demographics

Nunn	Colorado	
468	5,758,736	Population, 2019
12.2%	14.5%	Population, % change April 1, 2010 to July 1, 2019
2.5	2.56	Persons Per Household, 2019

Note: Recent data is unavailable from the US Census Bureau for some categories, based on the size of the municipality. Source: US Census Bureau

7.16.2 Risk and Vulnerability Assessment

Table 187 summarizes the results of the RF ranking exercise performed by the Town of Nunn. The results represent the relative risk of different hazards across the municipality from the perspective of local stakeholders and subject matter experts. Note the final RF Ranking values in this table include the weighting factors detailed in the Risk Assessment chapter of this Plan.

Table 187. Risk Factor Results for Nunn

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	RF Ranking
Agricultural Hazards	1.5	2	2	2.5	4	2.1
Cyber Hazards	2	1.5	2	4	3.5	2.2
Drought	3	1	3	1	4	2.3
Earthquake	1	2.5	2	4	1	2.0
Extreme Temps.	3	1	2.5	3	2	2.2
Flood	1	1	2	4	3	1.7
Hazmat Release	1.5	2	4	4	2	2.5
Land Subsidence	1	1	1.5	4	2.5	1.6
Prairie Fire	2.5	1.5	1.5	4	1.5	2.1
Public Health Hazards	3.5	2	2.5	1	4	2.7
Severe Storms	3.5	2.5	3	1.5	2	2.8
Tornado & Wind	2.5	2.5	2	3	1	2.3

The conclusions drawn from the qualitative assessment are organized into three categories shown in the following table and provide a summary of hazard risk for Nunn as a whole - based on High, Moderate, or Low risk designations. This process helped frame ongoing planning discussions around local and regional hazard risks and assisted with the development of the Plan's updated mitigation strategy.

Table 188. Hazard Risk Conclusions for Nunn

HIGH RISK (2.5 or higher)	**Hazmat Release, Public Health Hazards, Severe Storms**
MODERATE RISK (2.0 – 2.4)	**Agricultural Hazards, Cyber Hazards, Drought, Earthquake, Extreme Temperatures, Prairie Fire, Tornado & Straight-Line Wind**
LOW RISK (1.9 or lower)	**Flood, Land Subsidence**

The following sections highlight the Town of Nunn's High Risk hazards and include any specific content relevant to the Town. They are intended to supplement information included in each hazard profile in the main body of this Plan.

7.16.2.1 Hazmat Release

Vulnerability to hazmat release is increased for the Town of Nunn, mainly due to the location of a CDOT hazardous materials route through the community. Additionally, railroads span across Nunn which present their own increased risk for hazmat release. As is true for the entire County, the presence of any businesses that store hazardous materials also increases the risk for these types of events.

There have been no events in the Town of Nunn, between 1991 and 2019, based on data supplied by the Pipeline and Hazardous Materials Safety Administration's (PHMSA) Incident Reports Database.

Future occurrences can be expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.16.2.2 Public Health Hazards

Vulnerability to public health hazards is not expected to be noticeably different from the rest of the County. Individuals at a higher risk to this hazard include the aging adult population, those with a chronic illness, such as diabetes, asthma, coronary heart disease, and those who are obese or overweight. Other populations at risk include children, those in poverty and those with a disability. This data is collected at census tract level by the Centers for Disease Control (CDC) and is unavailable at a municipality level. The data by census tract can be found in the Colorado Department of Health and Environment Open Data database here.

Future occurrences are expected to mirror that of the County. There are no previous events to document specific to Nunn. Refer to Chapter 5 – Risk Assessment of this Plan for additional details, including a summary of the higher risk population demographics for Weld County and the State.

7.16.2.3 Severe Storms (including Hail, Lightning, & Winter Storm)

Vulnerability to severe storm, which includes hail, lightning, and winter storm, is not noticeably different from the rest of the County. The Town of Nunn's more densely developed areas experience the greatest risk, in addition to potential greater losses to the agriculture sector. Any structures not constructed to meet recent building codes experience the greatest risk from structural damages.

According to the NOAA's Storm Events Database, between 2015 and 2020, the Town of Nunn has had nine severe storm events. Seven of these events resulted in reports of hail, which ranged in size from 1.25 inches to 1.75 inches. None of these events resulted in reported damage to property or crops and no injuries or deaths.

Two events were reported as thunderstorm winds with magnitudes of 56 mph and 58 mph. There was no reported damage to property or crops and no injuries or deaths. No other events for severe storm, specific to Nunn, were recorded over this time period.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.16.3 Capabilities Assessment

The capability assessment examines the ability of the Town of Nunn to implement and manage the comprehensive mitigation strategy laid out in this Plan. The strengths, weaknesses, and resources of the

community are identified here as a means for evaluating and maintaining effective and appropriate management of the Town's hazard mitigation program.

Planning and regulatory capabilities are powerful tools for implementing hazard mitigation. The Town currently utilizes or has implemented many of these capabilities shown in Table 189. It is important for all municipalities to regularly review each of these tools, to identify opportunities for further risk reduction efforts.

Table 189. Planning & Regulatory Capabilities

Mitigation Capability	Utilized?	Comments
Comprehensive, Master, or General Plan	Yes	
Capital Improvement Program or Plan (CIP)	Yes	Annually by department
Floodplain Management Plan	No	Participating in statewide planning
Stormwater Program / Plan	Yes	FEMA Floodplain plan
Community Wildfire Protection Plan (CWPP)	No	
Erosion / Sediment Control Program	No	Permitted through the state, 1 acre per min
Economic Development Plan	No	Refer to Upstate Colorado
Other:	No	
Building Codes (Year)	Yes	SAFEbuilt, adopted by Ord. IRC 2018
Site Plan Review Requirements	Yes	Website-fliers for building
Other:	No	
Zoning Ordinance (Land Use)	Yes	
Subdivision Ordinance	Yes	
National Flood Insurance Program (NFIP) Participant	Yes	
Flood Insurance Study / Flood Insurance Rate Map / DFIRM	Yes	4-5 years
Floodplain Ordinance	Yes	
Elevation Certificates for Floodplain Development	Yes	SAFEbuilt, adopted by Ord. IRC 2018
Community Rating System (CRS) Participant	No	
Open Space / Conservation Program	Yes	Part of conservation/CO lottery/Open Space
Growth Management Ordinance	No	
Stormwater Ordinance	No	
Other Hazard Ordinance (steep slope, wildfire, snow loads, etc.)	Yes	Snow loads, included in building codes
Other:	No	

Available resources including staff, municipal groups, and technology are all vital for a community to be able to implement hazard mitigation. Nunn is fortunate to have many of these capabilities identified in Table 190.

Table 190. Administrative & Technical Capabilities

Mitigation Capability	Utilized?	Comments
Planning Commission	No	Town Board
Mitigation Planning Committee	No	Informal Town Board
Maintenance Programs (tree trimming, clearing drainage, etc.)	Yes	
Emergency Manager	Yes	Sue Frederickson
Building Official	Yes	SAFEbuilt
Floodplain Administrator	Yes	
Community Planner	No	Town Board
Transportation Planner	Yes	Refer to CDOT/Town Board
Civil Engineer	Yes	Contract Northern engineering
GIS Capability	No	Weld County
Resiliency Planner	No	Town Board
Other:	No	
Warning Systems / Services (flood)	Yes	Siren, FD initiated or county
Warning Systems / Services (other / multi hazard)	Yes	Code Red, IPAWS
Grant Writing / Management	Yes	Contracted per grant/grant writer
Other:	No	

The ability of a community to implement a comprehensive mitigation strategy is largely dependent on available funding. These related municipal capabilities are outlined in Table 191 and show that Nunn utilizes a broad range of financial tools that can support mitigation activities.

Table 191. Financial Capabilities

Mitigation Capability	Utilized?	Comments
Levy for Specific Purposes with Voter Approval	Yes	Yes, Mill Levy
Utilities Fees	Yes	Water, trash
System Development / Impact Development Fee	Yes	
General Obligation Bonds to Incur Debt	No	
Special Tax Bonds to Incur Debt	No	
Open Space / Conservation Fund	Yes	Conservation Funds
Stormwater Utility Fees	No	Possible in the future
Capital Improvement Project Funding	Yes	Annual budgeting
Community Development Block Grants (CDBG)	No	Possible in the future
Withheld spending in hazard-prone areas	No	

Mitigation Capability	Utilized?	Comments
Other:	No	

Education and outreach are important capabilities that allow a community to continue the conversation with their public regarding hazard risk and opportunities to mitigate. Table 192 shows that Nunn does leverage some of these capabilities and is currently working on expanding these efforts.

Table 192. Education & Outreach Capabilities

Mitigation Capability	Utilized?	Comments
Public Hazard Education / Outreach Program	Yes	Town board, Fire Dept, Police Dept
Local Citizen Groups That Communicate Hazard Risks	No	Nunn Facebook page
Firewise	Yes	Fire department
NOAA StormReady Program	Yes	Town board, Fire Dept, Police Dept
Other:	No	

7.16.4 Mitigation Actions

The mitigation actions identified by the Town during the Plan update are included in Table 193.

Table 193. 2021 Mitigation Actions

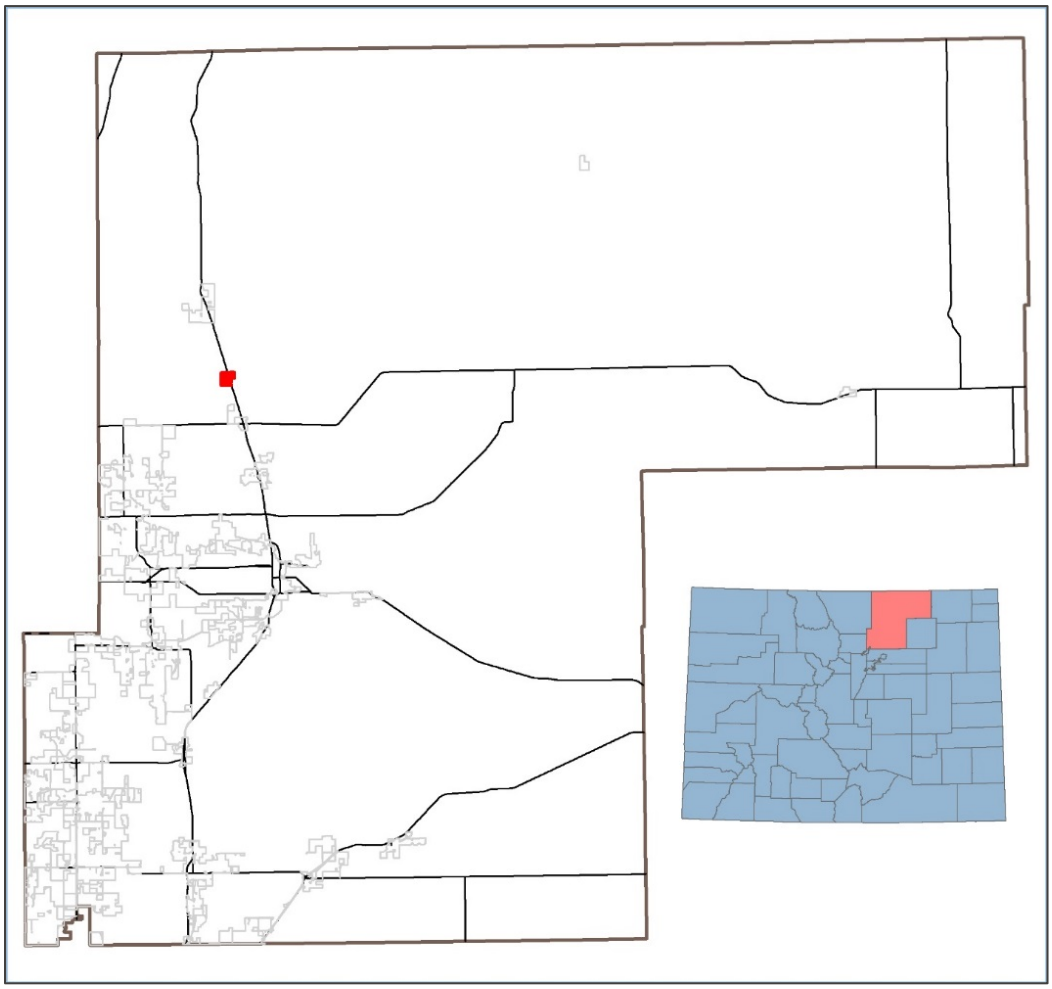
ID	Organization	Action
2021-81	1-Nunn	Master Drainage Plan
2021-82	2-Nunn	Tornado Shelter to be ADA Compliant
2021-83	3-Nunn	Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning

7.17 Town of Pierce

The Town is a rural agricultural community located on the Colorado Eastern Plains along U.S. Highway 85, north of Greeley. The Town has a total area of 0.7 square miles, including 1.0 sq. mi. annexed in 2018 where a natural gas processing facility has been constructed. The Town shares a police and fire department with the Town of Ault.

7.17.1 Community Profile

The Town of Pierce was a key railroad stop at the time of founding and became a local shipping point for cattle, sheep, potatoes, beans, and sugar beets. The Town has grown more rapidly than much of the region, however it is still one of the smallest municipalities adopting this plan.



The table below summarizes development information of the Town of Pierce. Current information for specific characteristics of the population is only available from the US Census Bureau for municipalities with populations over 5,000 people.

Table 194. Town of Pierce Demographics

Pierce	Colorado	
1,153	5,758,736	Population, 2019
37.9%	14.5%	Population, % change April 1, 2010 to July 1, 2019

Pierce	Colorado	
2.68	2.56	Persons Per Household, 2019

Note: Recent data is unavailable from the US Census Bureau for some categories, based on the size of the municipality. Source: US Census Bureau

7.17.2 Risk and Vulnerability Assessment

Table 195 summarizes the results of the RF ranking exercise performed by the Town of Pierce. The results represent the relative risk of different hazards across the municipality from the perspective of local stakeholders and subject matter experts. Note the final RF Ranking values in this table include the weighting factors detailed in the Risk Assessment chapter of this Plan.

Table 195. Risk Factor Results for Pierce

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	RF Ranking
Agricultural Hazards	2	1	2	1	4	1.8
Cyber Hazards	2	1	3	4	3	2.2
Drought	3	2	4	1	4	2.8
Earthquake	2	1	3	4	1	2.0
Extreme Temps.	4	2	4	2	3	3.1
Flood	2	2	3	2	2	2.2
Hazmat Release	3	2	4	4	3	3.0
Land Subsidence	1	1	2	1	3	1.4
Prairie Fire	1	1	1	4	1	1.3
Public Health Hazards	2	2	1	3	4	2.1
Severe Storms	4	2	4	2	2	3.0
Tornado & Wind	4	2	4	1	2	2.9

The conclusions drawn from the qualitative assessment are organized into three categories shown in the following table and provide a summary of hazard risk for Pierce as a whole - based on High, Moderate, or Low risk designations. This process helped frame ongoing planning discussions around local and regional hazard risks and assisted with the development of the Plan's updated mitigation strategy.

Table 196. Hazard Risk Conclusions for Pierce

HIGH RISK (2.5 or higher)	**Drought, Extreme Temperatures, Hazmat Release, Severe Storms, Tornado & Straight-Line Wind**
MODERATE RISK (2.0 – 2.4)	**Cyber Hazards, Earthquake, Flood, Public Health Hazards**
LOW RISK (1.9 or lower)	**Agricultural Hazards, Land Subsidence, Prairie Fire**

Since the 2016 Plan, the Town has increased the assessed risk from drought, extreme temperatures, and hazmat release to High Risk (all were formerly Low). It also increased the risk from severe storm and tornado & straight-line wind to High (both were previously moderate). Pierce increased its risk assessment for earthquake, flood, and public health hazards to be Moderate Risk (all were formerly Low). Besides the newly added hazards of agricultural hazards and cyber hazards, all other risk rankings remain the same.

The following sections highlight the Town of Pierce's High Risk hazards and include any specific content relevant to the Town. They are intended to supplement information included in each hazard profile in the main body of this Plan.

7.17.2.1 Drought

The community vulnerability to drought is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to this hazard. There are no previous events to document specific to the Town of Pierce. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.17.2.2 Extreme Temperatures

Vulnerability to extreme temperatures is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to these hazards due to potential crop and livestock losses. Additionally, individuals at a higher risk to extreme temperatures include those with mobility issues, independent living difficulty, the elderly, low-income families, outdoor laborers, and those experiencing homelessness. Data for these demographics is collected at census tract level, however snapshot data for populations that can fluctuate drastically, such as the number of outdoor laborers and those experiencing homelessness is not included. These are still considerable populations in the County and the Town of Pierce and local efforts to quantify these populations periodically can help with mitigation planning.

The data for high risk populations has been analyzed by Colorado Department of Public Health and Environment (CDPHE) and has been used to create Community Inclusions maps. These maps can be zoomed into specific census tracts for municipalities and communities, illustrating the population variances. Refer to Chapter 4 for examples of these maps for Weld County.

There are no previous events to document specific to the Town of Pierce. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.17.2.3 Hazmat Release

Vulnerability to hazmat release is increased for the Town of Pierce, mainly due to the location of a CDOT hazardous materials route through the community. Additionally, railroads span across Pierce which present their own increased risk for hazmat release. As is true for the entire County, the presence of any businesses that store hazardous materials also increases the risk for these types of events.

There have been no events in the Town of Pierce, between 1991 and 2019, based on data supplied by the Pipeline and Hazardous Materials Safety Administration's (PHMSA) Incident Reports Database.

Future occurrences can be expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.17.2.4 Severe Storms (including Hail, Lightning, & Winter Storm)

Vulnerability to severe storm, which includes hail, lightning, and winter storm, is not noticeably different from the rest of the County. The Town of Pierce's more densely developed areas experience the greatest risk, in addition to potential greater losses to the agriculture sector. Any structures not constructed to meet recent building codes experience the greatest risk from structural damages.

According to the NOAA's Storm Events Database, between 2015 and 2020, the Town of Pierce has had four severe storm events.

Three of these events resulted in reports of hail, which ranged in size from 1.5 inches to 2.5 inches. These events resulted in damages to property and crops, but no injuries or deaths.

One event was reported as thunderstorm winds with magnitudes of 52 mph. There was no reported damage to property or crops and no injuries or deaths. No other events for severe storm, specific to Pierce, were recorded over this time period.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.17.2.5 Tornado & Straight-Line Wind

Vulnerability to tornado & straight-line wind is not noticeably different from the rest of the County. Pierce's more densely developed areas experience the greatest risk, in addition to any structures not constructed to meet recent building codes.

Between 2015 and 2020, there were no reports of occurrences specific to Pierce. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.17.3 Capabilities Assessment

The capability assessment examines the ability of the Town of Pierce to implement and manage the comprehensive mitigation strategy laid out in this Plan. The strengths, weaknesses, and resources of the community are identified here as a means for evaluating and maintaining effective and appropriate management of the Town's hazard mitigation program.

Planning and regulatory capabilities are powerful tools for implementing hazard mitigation. The Town currently utilizes or has implemented some of these capabilities shown in Table 197. It is important for all municipalities to regularly review each of these tools, to identify opportunities for further risk reduction efforts.

Table 197. Planning & Regulatory Capabilities

Mitigation Capability	Utilized?	Comments
Comprehensive, Master, or General Plan	Yes	Master Plan
Capital Improvement Program or Plan (CIP)	No	
Floodplain Management Plan	Yes	Contract Northern CO Engineering
Stormwater Program / Plan	No	
Community Wildfire Protection Plan (CWPP)	No	Fire Protection District-Adam Ferrel
Erosion / Sediment Control Program	No	
Economic Development Plan	No	
Other:	No	
Building Codes (Year)	Yes	2018 updates
Site Plan Review Requirements	Yes	
Other:	No	

Mitigation Capability	Utilized?	Comments
Zoning Ordinance (Land Use)	Yes	
Subdivision Ordinance	Yes	
National Flood Insurance Program (NFIP) Participant	Yes	
Flood Insurance Study / Flood Insurance Rate Map / DFIRM	Yes	On the rated map
Floodplain Ordinance	Yes	
Elevation Certificates for Floodplain Development	Yes	
Community Rating System (CRS) Participant	No	
Open Space / Conservation Program	Yes	
Growth Management Ordinance	No	
Stormwater Ordinance	No	
Other Hazard Ordinance (steep slope, wildfire, snow loads, etc.)	No	
Other:	No	

Available resources including staff, municipal groups, and technology are all vital for a community to be able to implement hazard mitigation. Pierce has some of these capabilities identified in Table 198.

Table 198. Administrative & Technical Capabilities

Mitigation Capability	Utilized?	Comments
Planning Commission	Yes	Citizen appointed committee
Mitigation Planning Committee	No	
Maintenance Programs (tree trimming, clearing drainage, etc.)	Yes	For municipal properties
Emergency Manager	No	
Building Official	Yes	Contract SAFEbuilt/Planning Commissioner
Floodplain Administrator	Yes	Contract Northern CO Engineering
Community Planner	No	Contract as needed
Transportation Planner	No	
Civil Engineer	Yes	Contract Northern CO Engineering
GIS Capability	No	
Resiliency Planner	No	
Other:	No	
Warning Systems / Services (flood)	Yes	Audible Siren System, Ault/Pierce FD
Warning Systems / Services (other / multi hazard)	Yes	CodeRed, IPAWS
Grant Writing / Management	No	
Other:	No	

The ability of a community to implement a comprehensive mitigation strategy is largely dependent on available funding. These related municipal capabilities are outlined in Table 199 and show that Pierce utilizes a broad range of financial tools that can support mitigation activities.

Table 199. Financial Capabilities

Mitigation Capability	Utilized?	Comments
Levy for Specific Purposes with Voter Approval	No	
Utilities Fees	Yes	Water, Sewer
System Development / Impact Development Fee	Yes	
General Obligation Bonds to Incur Debt	No	
Special Tax Bonds to Incur Debt	No	
Open Space / Conservation Fund	Yes	1 currently
Stormwater Utility Fees	No	
Capital Improvement Project Funding	No	
Community Development Block Grants (CDBG)	No	
Withheld spending in hazard-prone areas	No	
Other:	No	

Education and outreach are important capabilities that allow a community to continue the conversation with their public regarding hazard risk and opportunities to mitigate. Table 200 shows that Pierce does leverage some of these capabilities and is currently working on expanding these efforts.

Table 200. Education & Outreach Capabilities

Mitigation Capability	Utilized?	Comments
Public Hazard Education / Outreach Program	No	
Local Citizen Groups That Communicate Hazard Risks	Yes	Informal Facebook page -residents of Pierce
Firewise	No	
NOAA StormReady Program	No	Possibly in the future.
Other:	Yes	School Education-Community Risk Reduction

7.17.4 Mitigation Actions

The new mitigation actions identified by the Town during the Plan update are included in Table 201. Two actions from the 2016 Plan have been carried over into the Town's updated mitigation strategy.

Table 201. 2021 Mitigation Actions

ID	Organization	Action
2021-84	1-Pierce	Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning
2021-85	2-Pierce	County Road 90 Improvements
2021-86	3-Pierce	Community Preparedness Education
2021-87	4-Pierce	Drainage County Rd 88 / Hwy 85

7.18 Town of Platteville

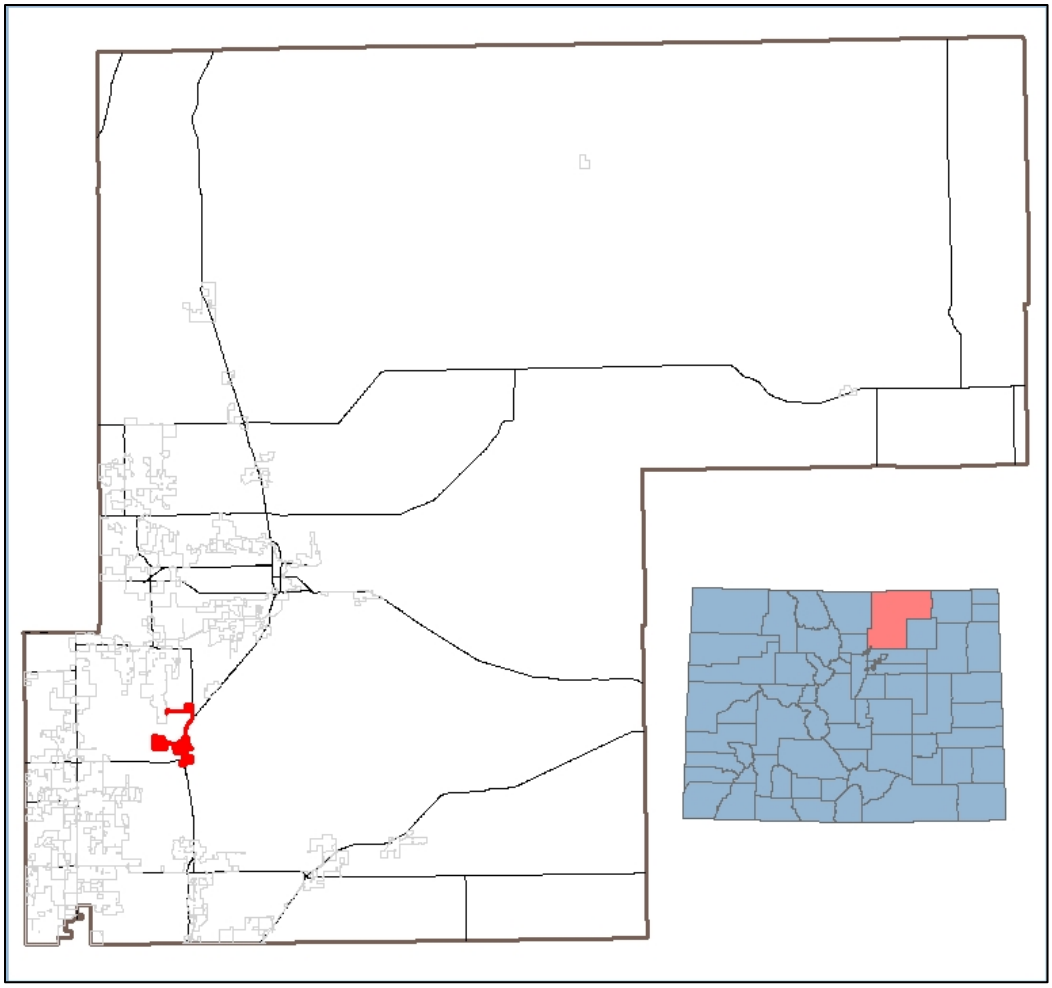
"We are committed to growing and being innovative, collaborative and creative with a full appreciation of our location and heritage which include agriculture and energy production support services."
— Town of Platteville Comprehensive Plan (2017)

The Plan Guiding Principles include:

- Environment- Protect and enhance Platteville's natural environment and scenic beauty of the town and surrounding area, with particular emphasis on the South Platte River Corridor.
- Economic Development- Attract and retain a broad range of commercial and industrial businesses that provide local employment opportunities and meet the needs of residents.
- Growth Management- Retain the small town, rural character by guiding growth and new development, maintaining distinct community edges with abundant open lands.
- Transportation- Provide an efficient, safe and connected transportation system.
- Community Vision- Committed to growing and being innovative, collaborative and creative.
- Services and Infrastructure- Provide public services and infrastructure in a cost-effective manner that accommodates new growth while enhancing Platteville's quality of life.
- Community Character- Foster community pride and establish a strong sense of place by preserving cultural resources, enhancing Platteville's image and revitalizing its downtown core.
- Parks and Recreation- Provide a coordinated and continuous system of parks, trails, and recreation that serves the present and future needs of Platteville residents.

7.18.1 Community Profile

Platteville is one of the oldest communities in Weld County. It is located along the east bank of the South Platte River, at the intersection of US Highway 85 and Colorado Highway 66. Platteville is approximately 1.48 square miles in size and has an economy driven by agriculture and energy production.



The table below summarizes development information of the Town of Platteville. Current information for specific characteristics of the population is only available from the US Census Bureau for municipalities with populations over 5,000 people.

Table 202. Town of Platteville Demographics

Platteville	Colorado	
3,010	5,758,736	Population, 2019
20.7%	14.5%	Population, % change April 1, 2010 to July 1, 2019
2.88	2.56	Persons Per Household, 2019

Note: Recent data is unavailable from the US Census Bureau for some categories, based on the size of the municipality. Source: US Census Bureau

7.18.2 Risk and Vulnerability Assessment

Table 203 summarizes the results of the RF ranking exercise performed by the Town of Platteville. The results represent the relative risk of different hazards across the municipality from the perspective of local stakeholders and subject matter experts. Note the final RF Ranking values in this table include the weighting factors detailed in the Risk Assessment chapter of this Plan.

Table 203. Risk Factor Results for Platteville

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	RF Ranking
Agricultural Hazards	2	1	2	1	4	1.8
Cyber Hazards	2	1	2	4	3	2.0
Drought	3	1	1	1	4	1.9
Earthquake	1	2	4	4	1	2.2
Extreme Temps.	3	1	4	1	4	2.5
Flood	3	1	2	1	3	2.0
Hazmat Release	2	3	2	4	3	2.8
Land Subsidence	1	1	1	1	1	1.0
Prairie Fire	2	2	2	2	2	2.0
Public Health Hazards	2	1	2	1	3	1.8
Severe Storms	3	3	3	4	2	3.0
Tornado & Wind	3	3	3	4	2	3.0

The conclusions drawn from the qualitative assessment are organized into three categories shown in the following table and provide a summary of hazard risk for Platteville as a whole - based on High, Moderate, or Low risk designations. This process helped frame ongoing planning discussions around local and regional hazard risks and assisted with the development of the Plan's updated mitigation strategy.

Table 204. Hazard Risk Conclusions for Platteville

HIGH RISK (2.5 or higher)	**Extreme Temperatures, Hazmat Release, Severe Storms, Tornado & Straight-Line Wind**
MODERATE RISK (2.0 – 2.4)	**Cyber Hazards, Earthquake, Flood, Prairie Fire**
LOW RISK (1.9 or lower)	**Agricultural Hazards, Drought, Land Subsidence, Public Health Hazards**

Since the 2016 Plan, the Town has increased the assessed risk from earthquake to Moderate Risk (previously Low) and for extreme temperatures and hazmat to High Risk (formerly Moderate). Flood also increased from a Low to Moderate risk ranking. The risk to Public health hazards was modified to Low Risk (formerly Moderate). Besides the newly added hazards of agricultural hazards and cyber hazards, all other risk rankings remain the same.

The following sections highlight the Town of Platteville's High Risk hazards and include any specific content relevant to the Town. They are intended to supplement information included in each hazard profile in the main body of this Plan.

7.18.2.1 Extreme Temperatures

Vulnerability to extreme temperatures is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to these hazards due to potential crop and livestock losses. Additionally, individuals at a higher risk to extreme temperatures include those with mobility issues, independent living difficulty, the elderly, low-income families, outdoor laborers, and those experiencing homelessness. Data for these demographics is collected at census tract level, however snapshot data for populations that can fluctuate

drastically, such as the number of outdoor laborers and those experiencing homelessness is not included. These are still considerable populations in the County and the Town of Platteville and local efforts to quantify these populations periodically can help with mitigation planning.

The data for high risk populations has been analyzed by Colorado Department of Public Health and Environment (CDPHE) and has been used to create Community Inclusions maps. These maps can be zoomed into specific census tracts for municipalities and communities, illustrating the population variances. Refer to Chapter 4 for examples of these maps for Weld County.

There are no previous events to document specific to the Town of Platteville. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.18.2.2 Hazmat Release

Vulnerability to hazmat release is increased for the Town of Platteville, mainly due to the location of a CDOT hazardous materials route through the community. As is true for the entire County, the presence of any businesses that store hazardous materials also increases the risk for these types of events.

Based on data supplied by the Pipeline and Hazardous Materials Safety Administration's (PHMSA) Incident Reports Database there have been seven events within Platteville between 1991 and 2019. Two of these events were vehicular accidents. The rest were due to overfilling and spillage.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.18.2.3 Severe Storms (including Hail, Lightning, & Winter Storm)

Vulnerability to severe storm, which includes hail, lightning, and winter storm, is not noticeably different from the rest of the County. Platteville's more densely developed areas experience the greatest risk, in addition to potential greater losses to the agriculture sector. Any structures not constructed to meet recent building codes experience the greatest risk from structural damages.

According to the NOAA's Storm Events Database, between 2015 and 2020, the Town of Platteville has had five severe storm events. All of these events resulted in reports of hail, which ranged in size from 1 inch to 1.5 inches. None of these events resulted in reported damage to property or crops and no injuries or deaths.

No other events for severe storm, specific to Platteville, were recorded over this time period.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.18.2.4 Tornado & Straight-Line Wind

Vulnerability to tornado & straight-line wind is not noticeably different from the rest of the County. Platteville's more densely developed areas experience the greatest risk, in addition to any structures not constructed to meet recent building codes.

Between 2015 and 2020, there were no reports of occurrences specific to Platteville. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.18.3 Capabilities Assessment

The capability assessment examines the ability of the Town of Platteville to implement and manage the comprehensive mitigation strategy laid out in this Plan. The strengths, weaknesses, and resources of the community are identified here as a means for evaluating and maintaining effective and appropriate management of the Town's hazard mitigation program.

Planning and regulatory capabilities are powerful tools for implementing hazard mitigation. The Town currently utilizes or has implemented some of these capabilities shown in Table 205. It is important for all municipalities to regularly review each of these tools, to identify opportunities for further risk reduction efforts.

Table 205. Planning & Regulatory Capabilities

Mitigation Capability	Utilized?	Comments
Comprehensive, Master, or General Plan	Yes	Comp Plan updated in 2016
Capital Improvement Program or Plan (CIP)	Yes	
Floodplain Management Plan	No	
Stormwater Program / Plan	Yes	Adopted 2016
Community Wildfire Protection Plan (CWPP)	No	
Erosion / Sediment Control Program	No	
Economic Development Plan	Yes	Adopted 2020
Other:	No	
Building Codes (Year)	Yes	2018 IBC Adopted
Site Plan Review Requirements	Yes	
Other:	No	
Zoning Ordinance (Land Use)	Yes	
Subdivision Ordinance	Yes	
National Flood Insurance Program (NFIP) Participant	Yes	
Flood Insurance Study / Flood Insurance Rate Map / DFIRM	Yes	
Floodplain Ordinance	Yes	
Elevation Certificates for Floodplain Development	Yes	
Community Rating System (CRS) Participant	No	
Open Space / Conservation Program	No	
Growth Management Ordinance	No	
Stormwater Ordinance	No	
Other Hazard Ordinance (steep slope, wildfire, snow loads, etc.)	No	
Other:	No	

Available resources including staff, municipal groups, and technology are all vital for a community to be able to implement hazard mitigation. Platteville is fortunate to have many of these capabilities identified in Table 206.

Table 206. Administrative & Technical Capabilities

Mitigation Capability	Utilized?	Comments
Planning Commission	Yes	
Mitigation Planning Committee	No	
Maintenance Programs (tree trimming, clearing drainage, etc.)	Yes	
Emergency Manager	Yes	
Building Official	Yes	
Floodplain Administrator	Yes	
Community Planner	Yes	
Transportation Planner	No	Use Town Engineer for transportation planning
Civil Engineer	Yes	
GIS Capability	Yes	
Resiliency Planner	No	
Other:	No	
Warning Systems / Services (flood)	Yes	Warning sirens and emergency phone system
Warning Systems / Services (other / multi hazard)	Yes	Warning sirens and emergency phone system
Grant Writing / Management	Yes	
Other:	No	

The ability of a community to implement a comprehensive mitigation strategy is largely dependent on available funding. These related municipal capabilities are outlined in Table 207 and show that Platteville utilizes a number of financial tools that can support mitigation activities.

Table 207. Financial Capabilities

Mitigation Capability	Utilized?	Comments
Levy for Specific Purposes with Voter Approval	No	
Utilities Fees	Yes	Water & Sewer Enterprise Funds
System Development / Impact Development Fee	Yes	Update 2015
General Obligation Bonds to Incur Debt	No	
Special Tax Bonds to Incur Debt	No	
Open Space / Conservation Fund	Yes	Conservation Fund
Stormwater Utility Fees	No	Storm Drainage Impact Fees for new development
Capital Improvement Project Funding	Yes	

Mitigation Capability	Utilized?	Comments
Community Development Block Grants (CDBG)	Yes	
Withheld spending in hazard-prone areas	No	
Other:	No	

Education and outreach are important capabilities that allow a community to continue the conversation with their public regarding hazard risk and opportunities to mitigate. Table 208 shows that Platteville could benefit by expanding upon these capabilities.

Table 208. Education & Outreach Capabilities

Mitigation Capability	Utilized?	Comments
Public Hazard Education / Outreach Program	No	
Local Citizen Groups That Communicate Hazard Risks	No	
Firewise	No	
NOAA StormReady Program	No	
Other:	No	

7.18.4 Mitigation Actions

The new mitigation actions identified by the Town during the Plan update are included in Table 209. One action from the 2016 Plan has been carried over into the Town's updated mitigation strategy.

Table 209. 2021 Mitigation Actions

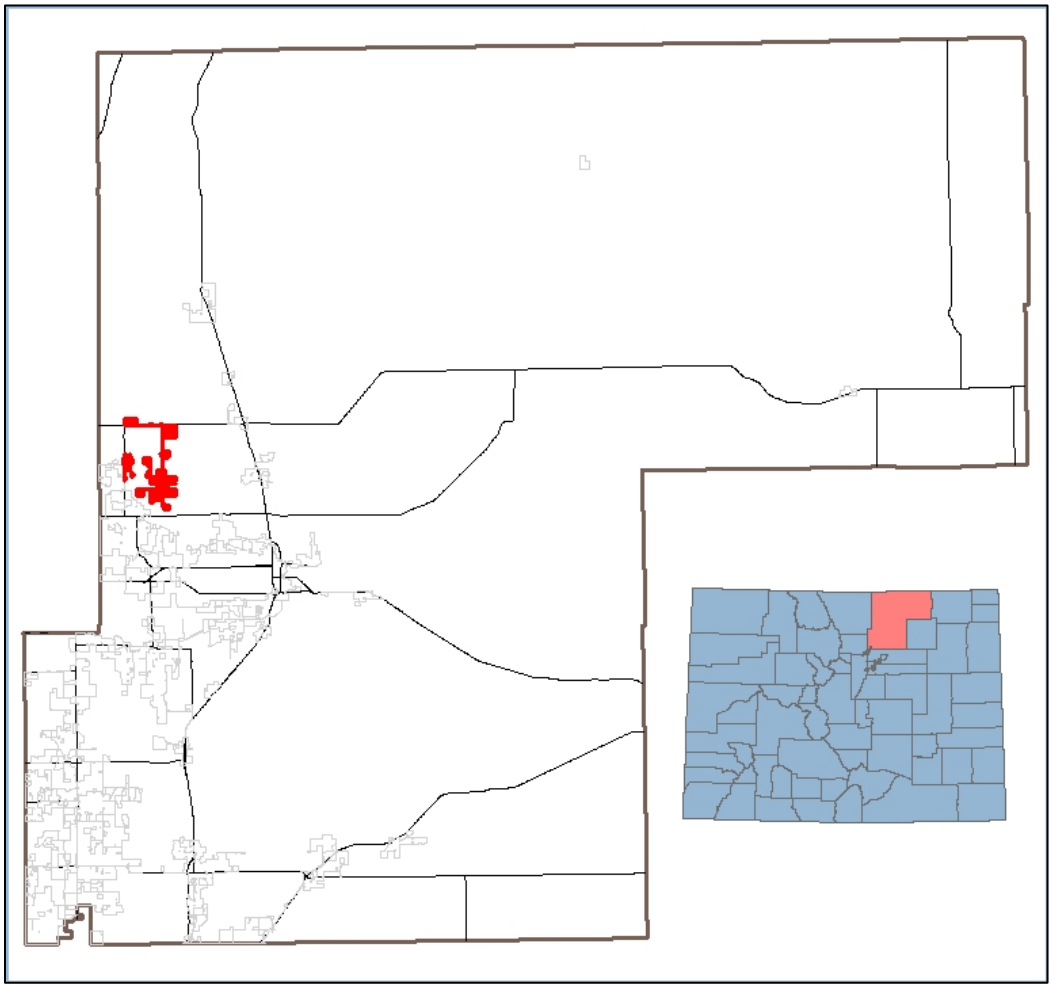
ID	Organization	Action
2021-88	1-Platteville	Comprehensive Plan Update and Training
2021-89	2-Platteville	Community Education of updated Early Warning System, Training and Utilization
2021-90	3-Platteville	Tornado Sirens - Maintenance and testing
2021-91	4-Platteville	Comprehensive EM Plan - Update and training
2021-92	5-Platteville	Community Impact Study -Vulnerable Populations-Shelter Capabilities Planning
2021-93	6-Platteville	Master Storm Drainage Plan

7.19 Town of Severance

The 2020 Severance Comprehensive Plan "*recognizes and respects private property rights while acknowledging the appropriate balance between these rights, the impact on health, safety, and welfare, for both existing and future residents of the Town, and the infrastructure requirements to adequately serve future development.*"

7.19.1 Community Profile

The Town of Severance is located approximately 10 miles east of Fort Collins, 7 miles north of Windsor and 10 miles northwest of Greeley. Severance has a total area of 2.1 square miles and was historically a rural farming community, which has evolved into a bedroom community. The construction of new residential communities, due to a doubling of the population in the last 10 years, has left the original agricultural community surrounded by modern construction.



The Windsor-Severance Fire Rescue (WSFR) provides fire, rescue, and hazmat services to the Towns of Windsor and Severance, as well as the rural areas surrounding them.

The table below summarizes key demographic and development related characteristics of the Town of Severance.

Table 210. Town of Severance Demographics

Severance	Colorado	
6,949	5,758,736	Population, 2019
104.3%	14.5%	Population, % change April 1, 2010 to July 1, 2019
10.8%	5.8%	% Population under 5 years, 2019
29.8%	21.9%	% Population under 19 years, 2019
9.5%	14.6%	% Population 65 years and over, 2019
95.2%	64.9%	Homeownership Rate, 2019
2.94	2.56	Persons Per Household, 2019
$99,375	$68,811	Median Household Income, 2014- 2018
2.4%	9.3%	Persons below poverty level, %, 2014- 2018
2.8%	7.3%	% Population under 65 years, with a disability 2014-2018
3.5%	17%	Language other than English spoken at home, % age 5+, 2014- 2018

Source: US Census Bureau

7.19.2 Risk and Vulnerability Assessment

Table 211 summarizes the results of the RF ranking exercise performed by the Town of Severance. The results represent the relative risk of different hazards across the municipality from the perspective of local stakeholders and subject matter experts. Note the final RF Ranking values in this table include the weighting factors detailed in the Risk Assessment chapter of this Plan.

Table 211. Risk Factor Results for Severance

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	RF Ranking
Agricultural Hazards	2	2	3	1	4	2.3
Cyber Hazards	3	3	3	2	3	2.9
Drought	3	2	3	1	4	2.6
Earthquake	2	1	2	3	1	1.7
Extreme Temps.	3	2	3	1	4	2.6
Flood	3	3	3	3	3	3.0
Hazmat Release	4	2	2	4	1	2.7
Land Subsidence	2	1	2	3	4	2.0
Prairie Fire	3	1	2	4	1	2.1
Public Health Hazards	4	3	3	1	4	3.2
Severe Storms	4	1	3	2	1	2.4
Tornado & Wind	2	3	2.5	3	1	2.4

The conclusions drawn from the qualitative assessment are organized into three categories shown in the following table and provide a summary of hazard risk for Severance as a whole - based on High, Moderate, or Low risk designations. This process helped frame ongoing planning discussions around local and regional hazard risks and assisted with the development of the Plan's updated mitigation strategy.

Table 212. Hazard Risk Conclusions for Severance

HIGH RISK (2.5 or higher)	**Cyber Hazards, Drought, Extreme Temperatures, Flood, Hazmat Release, Public Health Hazards**
MODERATE RISK (2.0 – 2.4)	**Agricultural Hazards, Land Subsidence, Prairie Fire, Severe Storms, Tornado & Straight-Line Wind**
LOW RISK (1.9 or lower)	**Earthquake**

Since the 2016 Plan, the Town has increased the assessed risk from flood, hazmat release, and public health hazards to High Risk (all were previously Low). The risk from land subsidence also was increased from Low to Moderate. Severance has decreased the assessed risk for both severe storms and tordano & straight-line winds, from High to Moderate. Besides the newly added hazards of agricultural hazards and cyber hazards, all other risk rankings remain the same.

The following sections highlight the Town of Severance's High Risk hazards and include any specific content relevant to the Town. They are intended to supplement information included in each hazard profile in the main body of this Plan.

7.19.2.1 Cyber Hazards

For any municipality, vulnerability to cyber hazards does not vary from that of the County as a whole. While there are no documented cyber events impacting the Town of Severance, the threat of this hazard is continually increasing. There are no previous events to document specific to Severance. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.19.2.2 Drought

The community vulnerability to drought is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to this hazard. There are no previous events to document specific to the Town of Severance. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.19.2.3 Extreme Temperatures

Vulnerability to extreme temperatures is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to these hazards due to potential crop and livestock losses. Additionally, individuals at a higher risk to extreme temperatures include those with mobility issues, independent living difficulty, the elderly, low-income families, outdoor laborers, and those experiencing homelessness. Data for these demographics is collected at census tract level, however snapshot data for populations that can fluctuate drastically, such as the number of outdoor laborers and those experiencing homelessness is not included. These are still considerable populations in the County and the Town of Severance and local efforts to quantify these populations periodically can help with mitigation planning.

The data for high risk populations has been analyzed by Colorado Department of Public Health and Environment (CDPHE) and has been used to create Community Inclusions maps. These maps can be zoomed into specific census tracts for municipalities and communities, illustrating the population variances. Refer to Chapter 4 for examples of these maps for Weld County.

There are no previous events to document specific to the Town of Severance. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.19.2.4 Flood (including Dam & Levee Failure)

Flood is a very localized hazard and vulnerability is unique for each municipality. According to the NOAA's Storm Events Database, there has been one flood event in Severance between 2015 and 2020. On 5/9/2015, a flood affected Severance when heavy rain produced flooding along already swollen creeks and streams in southwestern Weld County. This flood caused $15,000 in property damages and $5,000 in crop damages. There were no injuries or deaths.

The Town of Severance's overall vulnerability to flood is not noticeably different from the rest of the County. Severance has 47 address points located in the Special Flood Hazard Area (SFHA). This equates to 1.2% of all address points for the Town, as compared to 1.6% of Countywide addresses located in the SFHA.

Flood events can also occur as a result of dam or levee failure. In these cases, flood waters may not follow the typical floodplains mapped as the SFHA.

The Town of Severance's overall vulnerability to flooding in dam inundation areas considerably different from the rest of the County, as Severance has no address points located in these dam inundation areas. This is compared to 1.0% of Countywide addresses located in these areas.

Additionally, the Town is the first jurisdiction downstream from two dams. Both have a hazard classification of Significant or High and associated Emergency Action Plans (EAPs). Additional information pertaining to dams can be referenced at the State's Dam Safety website: https://dwr.state.co.us/Tools/DamSafety/Dams .

The Town's overall vulnerability to flooding in areas protected by known levees is significantly different from the rest of the County. Severance has no address points located within levee protected areas, compared to 1.6% of Countywide addresses located in these areas.

It is important to note that this analysis is only as good as best available data allows. Current floodplains, dam inundation areas, and areas protected by levees may not currently map all hazard areas. Additionally, mapped hazard areas may be dated and in need of updated mapping and analysis.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.19.2.5 Hazmat Release

Vulnerability to hazmat release is noticeably different from the rest of the County. There have been no events in the Town of Severance, between 1991 and 2019, based on data supplied by the Pipeline and Hazardous Materials Safety Administration's (PHMSA) Incident Reports Database.

The presence of any businesses that transport and store hazardous materials will increase the risk for these types of events.

Future occurrences can be expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.19.2.6 Public Health Hazards

Vulnerability to public health hazards is not expected to be noticeably different from the rest of the County. Individuals at a higher risk to this hazard include the aging adult population, those with a chronic illness, such as diabetes, asthma, coronary heart disease, and those who are obese or overweight. Other populations at risk include children, those in poverty and those with a disability. This data is collected at census tract level by the Centers for Disease Control (CDC) and is unavailable at a municipality level. The data by census tract can be found in the Colorado Department of Health and Environment Open Data database here.

Future occurrences are expected to mirror that of the County. There are no previous events to document specific to Severance. Refer to Chapter 5 – Risk Assessment of this Plan for additional details, including a summary of the higher risk population demographics for Weld County and the State.

7.19.3 Capabilities Assessment

The capability assessment examines the ability of the Town of Severance to implement and manage the comprehensive mitigation strategy laid out in this Plan. The strengths, weaknesses, and resources of the community are identified here as a means for evaluating and maintaining effective and appropriate management of the Town's hazard mitigation program.

Planning and regulatory capabilities are powerful tools for implementing hazard mitigation. The Town currently utilizes or has implemented a portion of these capabilities shown in Table 213. It is important for all municipalities to regularly review each of these tools, to identify opportunities for further risk reduction efforts.

Table 213. Planning & Regulatory Capabilities

Mitigation Capability	Utilized?	Comments
Comprehensive, Master, or General Plan	Yes	
Capital Improvement Program or Plan (CIP)	Yes	New for 2021 Budget
Floodplain Management Plan	No	
Stormwater Program / Plan	No	
Community Wildfire Protection Plan (CWPP)	No	
Erosion / Sediment Control Program	No	
Economic Development Plan	No	
Other:	No	
Building Codes (Year)	Yes	2018
Site Plan Review Requirements	Yes	
Other:	No	
Zoning Ordinance (Land Use)	Yes	
Subdivision Ordinance	Yes	
National Flood Insurance Program (NFIP) Participant	Yes	
Flood Insurance Study / Flood Insurance Rate Map / DFIRM	Yes	
Floodplain Ordinance	Yes	

Mitigation Capability	Utilized?	Comments
Elevation Certificates for Floodplain Development	Yes	
Community Rating System (CRS) Participant	No	
Open Space / Conservation Program	Yes	New Plan for 2021
Growth Management Ordinance	Yes	
Stormwater Ordinance	No	
Other Hazard Ordinance (steep slope, wildfire, snow loads, etc.)	No	
Other:	No	

Available resources including staff, municipal groups, and technology are all vital for a community to be able to implement hazard mitigation. Severance is fortunate to have many of these capabilities identified in Table 214.

Table 214. Administrative & Technical Capabilities

Mitigation Capability	Utilized?	Comments
Planning Commission	Yes	https://www.townofseverance.org/planning-commission
Mitigation Planning Committee	No	
Maintenance Programs (tree trimming, clearing drainage, etc.)	Yes	
Emergency Manager	Yes	Chief James Gerdeman
Building Official	Yes	Russ Weber, SAFEbuilt
Floodplain Administrator	Yes	Mike Ketterling, Northern Engineering
Community Planner	Yes	Mitch Nelson, Community Development Director
Transportation Planner	No	
Civil Engineer	Yes	Colorado Civil Group
GIS Capability	Yes	Mitch Nelson, Community Development Director
Resiliency Planner	No	
Other:	No	
Warning Systems / Services (flood)	No	
Warning Systems / Services (other / multi hazard)	Yes	Tornado Sirens
Grant Writing / Management	Yes	Mitch Nelson, Community Development Director
Other:	No	

The ability of a community to implement a comprehensive mitigation strategy is largely dependent on available funding. These related municipal capabilities are outlined in Table 215 and show that Severance utilizes a few financial tools that can support mitigation activities.

Table 215. Financial Capabilities

Mitigation Capability	Utilized?	Comments
Levy for Specific Purposes with Voter Approval	No	
Utilities Fees	Yes	
System Development / Impact Development Fee	Yes	
General Obligation Bonds to Incur Debt	No	
Special Tax Bonds to Incur Debt	No	
Open Space / Conservation Fund	Yes	
Stormwater Utility Fees	No	
Capital Improvement Project Funding	No	
Community Development Block Grants (CDBG)	No	
Withheld spending in hazard-prone areas	No	
Other:	No	

Education and outreach are important capabilities that allow a community to continue the conversation with their public regarding hazard risk and opportunities to mitigate. Table 216 shows that Severance could benefit by expanding upon these capabilities.

Table 216. Education & Outreach Capabilities

Mitigation Capability	Utilized?	Comments
Public Hazard Education / Outreach Program	No	
Local Citizen Groups That Communicate Hazard Risks	No	
Firewise	No	
NOAA StormReady Program	No	
Other:	No	

7.19.4 Mitigation Actions

The new mitigation actions identified by the Town during the Plan update are included in Table 217.

Table 217. 2021 Mitigation Actions

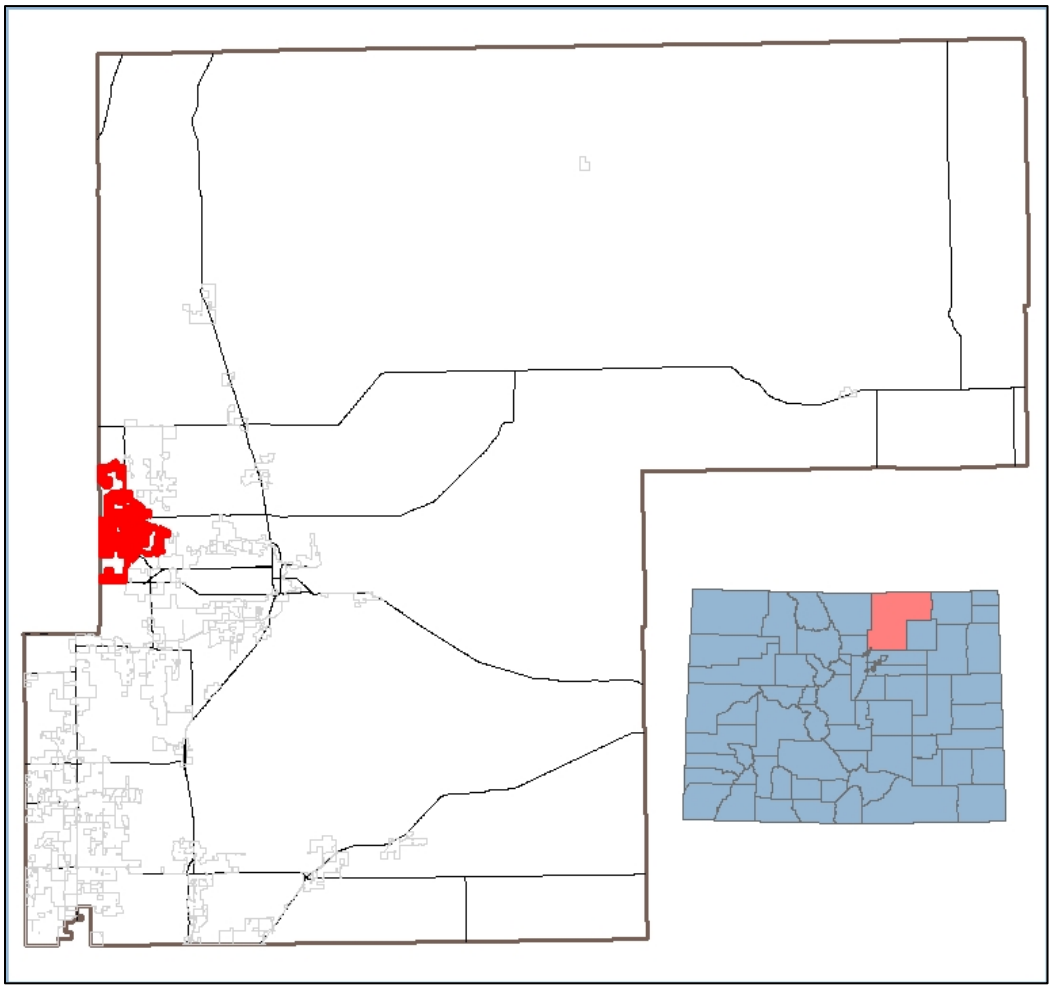
ID	Organization	Action
2021-94	1-Severence	Downtown Drainage and Street Improvements (Phase 2)
2021-95	2-Severence	Hidden Valley Parkway Crossing
2021-96	3-Severence	Harmony Regional Drainage Project

7.20 Town of Windsor

The 2016 Windsor Comprehensive Plan "*serves as a foundation for decision-making and a reference for Town officials, residents, and stakeholders as they consider development proposals, capital improvements, infrastructure investments, policy changes, and other actions in the decades to come.*"

7.20.1 Community Profile

The Town has a total area of 25.6 square miles of which 1.27 square miles of it is water. The Cache la Poudre River runs through the west and south sides of Town. It on the BNSF Railway and east of Interstate 25. It is approximately halfway between Fort Collins and Greeley and 15 miles northeast of Loveland.



The Windsor-Severance Fire Rescue (WSFR) provides fire, rescue, and hazmat services to the Towns of Windsor and Severance, as well as the rural areas surrounding them.

The table below summarizes key demographic and development related characteristics of the Town of Windsor.

Table 218. Town of Windsor Demographics

Windsor	Colorado	
30,477	5,758,736	Population, 2019

Windsor	Colorado	
63.4%	14.5%	Population, % change April 1, 2010 to July 1, 2019
7%	5.8%	% Population under 5 years, 2019
29.2%	21.9%	% Population under 19 years, 2019
14%	14.6%	% Population 65 years and over, 2019
82.4%	64.9%	Homeownership Rate, 2019
2.81	2.56	Persons Per Household, 2019
$96,710	$68,811	Median Household Income, 2014- 2018
4.3%	9.3%	Persons below poverty level, %, 2014- 2018
4.6%	7.3%	% Population under 65 years, with a disability 2014-2018
6.4%	17%	Language other than English spoken at home, % age 5+, 2014- 2018

Source: US Census Bureau

7.20.2 Risk and Vulnerability Assessment

The Town of Windsor is situated in both Larimer and Weld Counties. For the purpose of this plan, spatially analyzed hazard risks have been assessed for the areas of the city that lie specifically within Weld County.

Table 219 summarizes the results of the RF ranking exercise performed by the Town of Windsor. The results represent the relative risk of different hazards across the municipality from the perspective of local stakeholders and subject matter experts. Note the final RF Ranking values in this table include the weighting factors detailed in the Risk Assessment chapter of this Plan.

Table 219. Risk Factor Results for Windsor

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	RF Ranking
Agricultural Hazards	1	1	1	2	3	1.3
Cyber Hazards	2	4	4	4	4	3.4
Drought	4	3	4	1	3	3.3
Earthquake	1	2	2	4	2	1.9
Extreme Temps.	2	3	2	2	3	2.4
Flood	3	3	3	3	4	3.1
Hazmat Release	4	3	3	1	3	3.1
Land Subsidence	1	2	2	1	2	1.6
Prairie Fire	1	1	1	1	1	1.0
Public Health Hazards	4	4	4	3	4	3.9
Severe Storms	4	3	3	2	4	3.3
Tornado & Wind	2	2	2	2	4	2.2

The conclusions drawn from the qualitative assessment are organized into three categories shown in the following table and provide a summary of hazard risk for Windsor as a whole – based on High, Moderate, or Low risk designations. This process helped frame ongoing planning discussions around local and regional hazard risks and assisted with the development of the Plan's updated mitigation strategy.

Table 220. Hazard Risk Conclusions for Windsor

HIGH RISK (2.5 or higher)	**Cyber Hazards, Drought, Flood, Hazmat Release, Public Health Hazards, Severe Storms**
MODERATE RISK (2.0 – 2.4)	**Extreme Temperatures, Tornado & Straight-Line Wind**
LOW RISK (1.9 or lower)	**Agricultural Hazards, Earthquake, Land Subsidence, Prairie Fire**

Since the 2016 Plan, the Town has increased the assessed risk from drought to High Risk (previously Moderate). The Town also increased the assessed risk from flood, hazmat release, and public health hazards to High Risk (previously all were Low). Windsor has decreased the assessed risk for extreme temperatures, from High to Moderate and prairie fire from Moderate to Low. Besides the newly added hazards of agricultural hazards and cyber hazards, all other risk rankings remain the same.

The following sections highlight the Town of Severance's High Risk hazards and include any specific content relevant to the Town. They are intended to supplement information included in each hazard profile in the main body of this Plan.

7.20.2.1 Cyber Hazards

For any municipality, vulnerability to cyber hazards does not vary from that of the County as a whole. While there are no documented cyber events impacting the Town of Windsor, the threat of this hazard is continually increasing. There are no previous events to document specific to Windsor. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.20.2.2 Drought

The community vulnerability to drought is not noticeably different from the rest of the County. Those communities whose economies are more dependent on the agriculture industry do experience higher risk to this hazard. There are no previous events to document specific to Windsor. Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.20.2.3 Flood (including Dam & Levee Failure)

Flood is a very localized hazard and vulnerability is unique for each municipality. According to the NOAA's Storm Events Database, there have been two flood events in Windsor between 2015 and 2020. On 5/20/2015, a flood affected Windsor when the Cache La Poudre and South Platte River rose above flood stage producing a prolonged period of minor to moderate lowland flooding. Numerous county roads along the rivers were closed due to floodwaters. This flood caused $250,000 in property damages and $100,000 in crop damages. There were no injuries or deaths.

Another event on 6/2/2015, both the Cache La Poudre and South Platte Rivers crested over a foot above flood stage due to rainfall and snowmelt. This flood caused $25,000 in property damages and $50,000 in crop damages. There were no injuries or deaths.

The Town of Windsor spans both Larimer and Weld Counties and the information for vulnerability includes only those address points within Weld County.

Overall vulnerability to flood is increased for the Town of Windsor, where 2.2% of address points (287) are located within the Special Flood Hazard Area (SFHA). This is a larger percentage of structures at risk, as compared to 1.6% of Countywide addresses located in the SFHA.

Flood events can also occur as a result of dam or levee failure. In these cases, flood waters may not follow the typical floodplains mapped as the SFHA.

Overall vulnerability to flooding in dam inundation areas is increased for the Town of Windsor, where 68.0% of address points (8,818) are located within these dam inundation areas. This is a larger percentage of structures at risk, as compared to 1.0% of Countywide addresses located in these areas.

Additionally, the Town is the first jurisdiction downstream from fifteen dams. Six of these have a hazard classification of Significant or High and associated Emergency Action Plans (EAPs). Additional information pertaining to dams can be referenced at the State's Dam Safety website: https://dwr.state.co.us/Tools/DamSafety/Dams .

The Town's overall vulnerability to flooding in areas protected by known levees is significantly different from the rest of the County. Windsor has no address points located in these levee protected areas, compared to 1.6% of Countywide addresses located in these areas.

It is important to note that this analysis is only as good as best available data allows. Current floodplains, dam inundation areas, and areas protected by levees may not currently map all hazard areas. Additionally, mapped hazard areas may be dated and in need of updated mapping and analysis.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.20.2.4 Hazmat Release

Vulnerability to hazmat release is increased, mainly due to railroads spanning across the Town of Windsor which present their own increased risk for hazmat release. As is true for the entire County, the presence of any businesses that store hazardous materials also increases the risk for these types of events.

Based on data supplied by the Pipeline and Hazardous Materials Safety Administration's (PHMSA) Incident Reports Database there have been seven events that have occurred within Windsor between 1991 and 2019. These events were due to improper handling and preparation for transport.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.20.2.5 Public Health Hazards

Vulnerability to public health hazards is not expected to be noticeably different from the rest of the County. Individuals at a higher risk to this hazard include the aging adult population, those with a chronic illness, such as diabetes, asthma, coronary heart disease, and those who are obese or overweight. Other populations at risk include children, those in poverty and those with a disability. This data is collected at census tract level by the Centers for Disease Control (CDC) and is unavailable at a municipality level. The data by census tract can be found in the Colorado Department of Health and Environment Open Data database here.

Future occurrences are expected to mirror that of the County. There are no previous events to document specific to Windsor. Refer to Chapter 5 – Risk Assessment of this Plan for additional details, including a summary of the higher risk population demographics for Weld County and the State.

7.20.2.6 Severe Storms (including Hail, Lightning, & Winter Storm)

Vulnerability to severe storm, which includes hail, lightning, and winter storm, is not noticeably different from the rest of the County. The Town of Windsor's more densely developed areas experience the greatest risk. Any structures not constructed to meet recent building codes experience the greatest risk from structural damages.

According to the NOAA's Storm Events Database, between 2015 and 2020, the Town of Windsor has had ten severe storm events. All of these events resulted in reports of hail, which ranged in size from .88 inch to 2inches. None of these events resulted in damage to property or crops and no injuries or deaths.

No other events for severe storm, specific to Windsor, were recorded over this time period.

Future occurrences are expected to mirror that of the County. Refer to Chapter 5 – Risk Assessment of this Plan for additional details.

7.20.3 Capabilities Assessment

The capability assessment examines the ability of the Town of Windsor to implement and manage the comprehensive mitigation strategy laid out in this Plan. The strengths, weaknesses, and resources of the community are identified here as a means for evaluating and maintaining effective and appropriate management of the Town's hazard mitigation program.

Planning and regulatory capabilities are powerful tools for implementing hazard mitigation. The Town currently utilizes or has implemented many of these capabilities shown in Table 221. It is important for all municipalities to regularly review each of these tools, to identify opportunities for further risk reduction efforts.

Table 221. Planning & Regulatory Capabilities

Mitigation Capability	Utilized?	Comments
Comprehensive, Master, or General Plan	Yes	
Capital Improvement Program or Plan (CIP)	Yes	
Floodplain Management Plan	Yes	
Stormwater Program / Plan	Yes	
Community Wildfire Protection Plan (CWPP)	No	
Erosion / Sediment Control Program	No	
Economic Development Plan	Yes	
Other:	No	
Building Codes (Year)	Yes	2018
Site Plan Review Requirements	Yes	
Other:		
Zoning Ordinance (Land Use)	Yes	

Mitigation Capability	Utilized?	Comments
Subdivision Ordinance	Yes	
National Flood Insurance Program (NFIP) Participant	Yes	
Flood Insurance Study / Flood Insurance Rate Map / DFIRM	Yes	
Floodplain Ordinance	Yes	
Elevation Certificates for Floodplain Development	No	
Community Rating System (CRS) Participant	No	
Open Space / Conservation Program	No	
Growth Management Ordinance	Yes	
Stormwater Ordinance	Yes	
Other Hazard Ordinance (steep slope, wildfire, snow loads, etc.)	No	
Other:	No	

Available resources including staff, municipal groups, and technology are all vital for a community to be able to implement hazard mitigation. Windsor is fortunate to have a number of these capabilities identified in Table 222.

Table 222. Administrative & Technical Capabilities

Mitigation Capability	Utilized?	Comments
Planning Commission	Yes	
Mitigation Planning Committee	No	
Maintenance Programs (tree trimming, clearing drainage, etc.)	Yes	
Emergency Manager	Yes	Shared in house
Building Official	Yes	Contract with SAFEbuilt
Floodplain Administrator	Yes	Omar Herrera
Community Planner	Yes	Planning Department
Transportation Planner	Yes	Contract as needed
Civil Engineer	Yes	
GIS Capability	Yes	
Resiliency Planner	No	
Other:	No	
Warning Systems / Services (flood)	No	
Warning Systems / Services (other / multi hazard)	No	
Grant Writing / Management	No	Handled by department
Other:	No	

The ability of a community to implement a comprehensive mitigation strategy is largely dependent on available funding. These related municipal capabilities are outlined in Table 223 and show that Windsor utilizes a broad range of financial tools that can support mitigation activities.

Table 223. Financial Capabilities

Mitigation Capability	Utilized?	Comments
Levy for Specific Purposes with Voter Approval	Yes	
Utilities Fees	Yes	
System Development / Impact Development Fee	Yes	
General Obligation Bonds to Incur Debt	Yes	
Special Tax Bonds to Incur Debt	Yes	
Open Space / Conservation Fund	No	
Stormwater Utility Fees	Yes	
Capital Improvement Project Funding	Yes	
Community Development Block Grants (CDBG)	No	
Withheld spending in hazard-prone areas	No	
Other:	No	

Education and outreach are important capabilities that allow a community to continue the conversation with their public regarding hazard risk and opportunities to mitigate. Table 224 shows that Windsor could benefit by expanding upon these capabilities.

Table 224. Education & Outreach Capabilities

Mitigation Capability	Utilized?	Comments
Public Hazard Education / Outreach Program	No	
Local Citizen Groups That Communicate Hazard Risks	No	
Firewise	No	
NOAA StormReady Program	No	
Other:	No	

7.20.4 Mitigation Actions

The new mitigation actions identified by the Town during the Plan update are included in Table 225. Two actions from the 2016 Plan have been carried over into the Town's updated mitigation strategy.

Table 225. 2021 Mitigation Actions

ID	Organization	Action
2021-97	1-Windsor	Eastman Park Riverwalk Project

ID	Organization	Action
2021-98	2-Windsor	Acquire Emergency Power System Transfer Switches - Public Safety Complex
2021-99	3-Windsor	Flood Mitigation on CR 13

8 Appendix C: Earthquake Hazus Risk Report

Hazus: Earthquake Global Risk Report

Region Name WeldCO_Eq

Earthquake Scenario: Weld EQ 2,500yr Probabalistic 6.5

Print Date: July 17, 2020

Disclaimer:
This version of Hazus utilizes 2010 Census Data.
Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific earthquake. These results can be improved by using enhanced inventory, geotechnical, and observed ground motion data.

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Appendix A: County Listing for the Region

Appendix B: Regional Population and Building Value Data

General Description of the Region

Hazus-MH is a regional earthquake loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences. The primary purpose of Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The earthquake loss estimates provided in this report was based on a region that includes 1 county(ies) from the following state(s):

Colorado

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 4,015.73 square miles and contains 77 census tracts. There are over 89 thousand households in the region which has a total population of 252,825 people (2010 Census Bureau data). The distribution of population by Total Region and County is provided in Appendix B.

There are an estimated 90 thousand buildings in the region with a total building replacement value (excluding contents) of 23,758 (millions of dollars). Approximately 92.00 % of the buildings (and 82.00% of the building value) are associated with residential housing.

The replacement value of the transportation and utility lifeline systems is estimated to be 6,078 and 14,834 (millions of dollars) , respectively.

Building and Lifeline Inventory

Building Inventory

Hazus estimates that there are 90 thousand buildings in the region which have an aggregate total replacement value of 23,758 (millions of dollars) . Appendix B provides a general distribution of the building value by Total Region and County.

In terms of building construction types found in the region, wood frame construction makes up 66% of the building inventory. The remaining percentage is distributed between the other general building types.

Critical Facility Inventory

Hazus breaks critical facilities into two (2) groups: essential facilities and high potential loss facilities (HPL). Essential facilities include hospitals, medical clinics, schools, fire stations, police stations and emergency operations facilities. High potential loss facilities include dams, levees, military installations, nuclear power plants and hazardous material sites.

For essential facilities, there are 2 hospitals in the region with a total bed capacity of 300 beds. There are 111 schools, 45 fire stations, 22 police stations and 4 emergency operation facilities. With respect to high potential loss facilities (HPL), there are no dams identified within the inventory. The inventory also includes 60 hazardous material sites, no military installations and no nuclear power plants.

Transportation and Utility Lifeline Inventory

Within Hazus, the lifeline inventory is divided between transportation and utility lifeline systems. There are seven (7) transportation systems that include highways, railways, light rail, bus, ports, ferry and airports. There are six (6) utility systems that include potable water, wastewater, natural gas, crude & refined oil, electric power and communications. The lifeline inventory data are provided in Tables 1 and 2.

The total value of the lifeline inventory is over 20,912.00 (millions of dollars). This inventory includes over 507.04 miles of highways, 600 bridges, 17,796.69 miles of pipes.

Table 1: Transportation System Lifeline Inventory

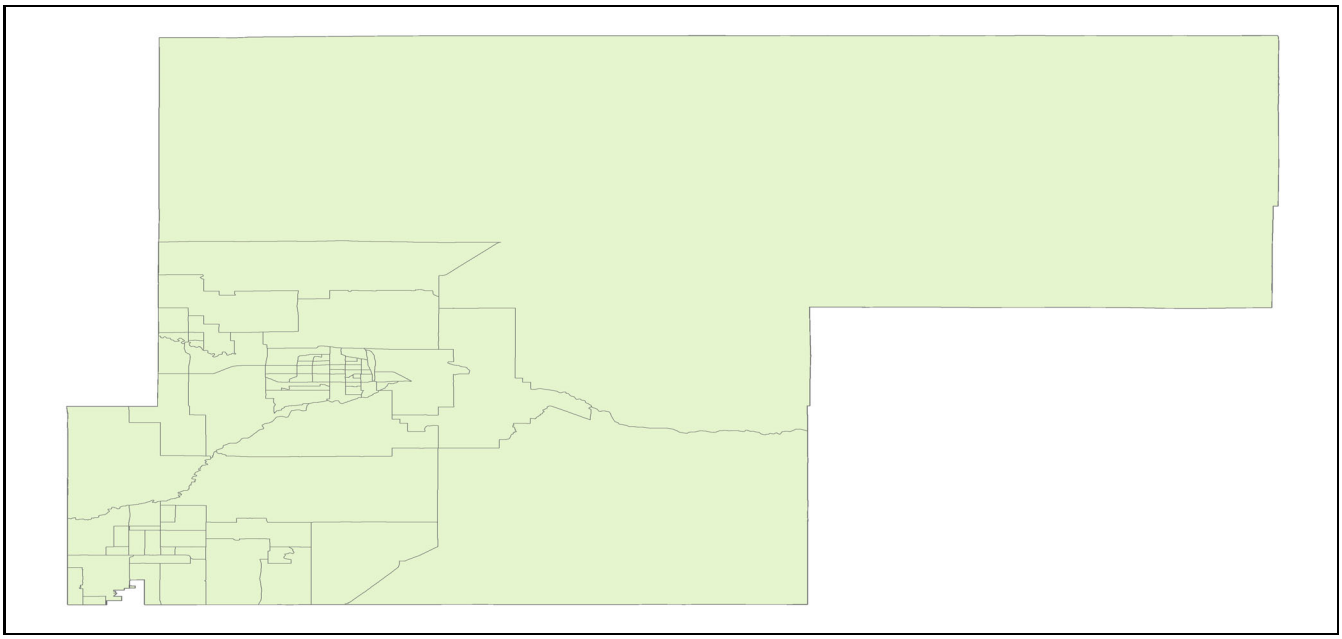
System	Component	# Locations/ # Segments	Replacement value (millions of dollars)
Highway	Bridges	600	753.3787
	Segments	131	4185.4655
	Tunnels	0	0.0000
		Subtotal	**4938.8442**
Railways	Bridges	95	418.9648
	Facilities	0	0.0000
	Segments	285	493.9823
	Tunnels	0	0.0000
		Subtotal	**912.9471**
Light Rail	Bridges	0	0.0000
	Facilities	0	0.0000
	Segments	0	0.0000
	Tunnels	0	0.0000
		Subtotal	**0.0000**
Bus	Facilities	2	2.8225
		Subtotal	**2.8225**
Ferry	Facilities	0	0.0000
		Subtotal	**0.0000**
Port	Facilities	0	0.0000
		Subtotal	**0.0000**
Airport	Facilities	3	26.6373
	Runways	6	197.0052
		Subtotal	**223.6425**
		Total	**6,078.30**

Table 2: Utility System Lifeline Inventory

System	Component	# Locations / Segments	Replacement value (millions of dollars)
Potable Water	Distribution Lines	NA	347.1444
	Facilities	0	0.0000
	Pipelines	0	0.0000
		Subtotal	**347.1444**
Waste Water	Distribution Lines	NA	208.2866
	Facilities	60	7567.8281
	Pipelines	0	0.0000
		Subtotal	**7776.1147**
Natural Gas	Distribution Lines	NA	138.8577
	Facilities	20	30.8710
	Pipelines	43	524.0924
		Subtotal	**693.8211**
Oil Systems	Facilities	0	0.0000
	Pipelines	0	0.0000
		Subtotal	**0.0000**
Electrical Power	Facilities	11	6016.3351
		Subtotal	**6016.3351**
Communication	Facilities	16	1.5520
		Subtotal	**1.5520**
		Total	**14,835.00**

Earthquake Scenario

Hazus uses the following set of information to define the earthquake parameters used for the earthquake loss estimate provided in this report.



Scenario Name	Weld EQ 2,500yr Probabalistic 6.5
Type of Earthquake	Probabilistic
Fault Name	NA
Historical Epicenter ID #	NA
Probabilistic Return Period	2,500.00
Longitude of Epicenter	NA
Latitude of Epicenter	NA
Earthquake Magnitude	6.50
Depth (km)	NA
Rupture Length (Km)	NA
Rupture Orientation (degrees)	NA
Attenuation Function	NA

Direct Earthquake Damage

Building Damage

Hazus estimates that about 2,867 buildings will be at least moderately damaged. This is over 3.00 % of the buildings in the region. There are an estimated 13 buildings that will be damaged beyond repair. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the Hazus technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 below summarizes the expected damage by general building type.

Damage Categories by General Occupancy Type

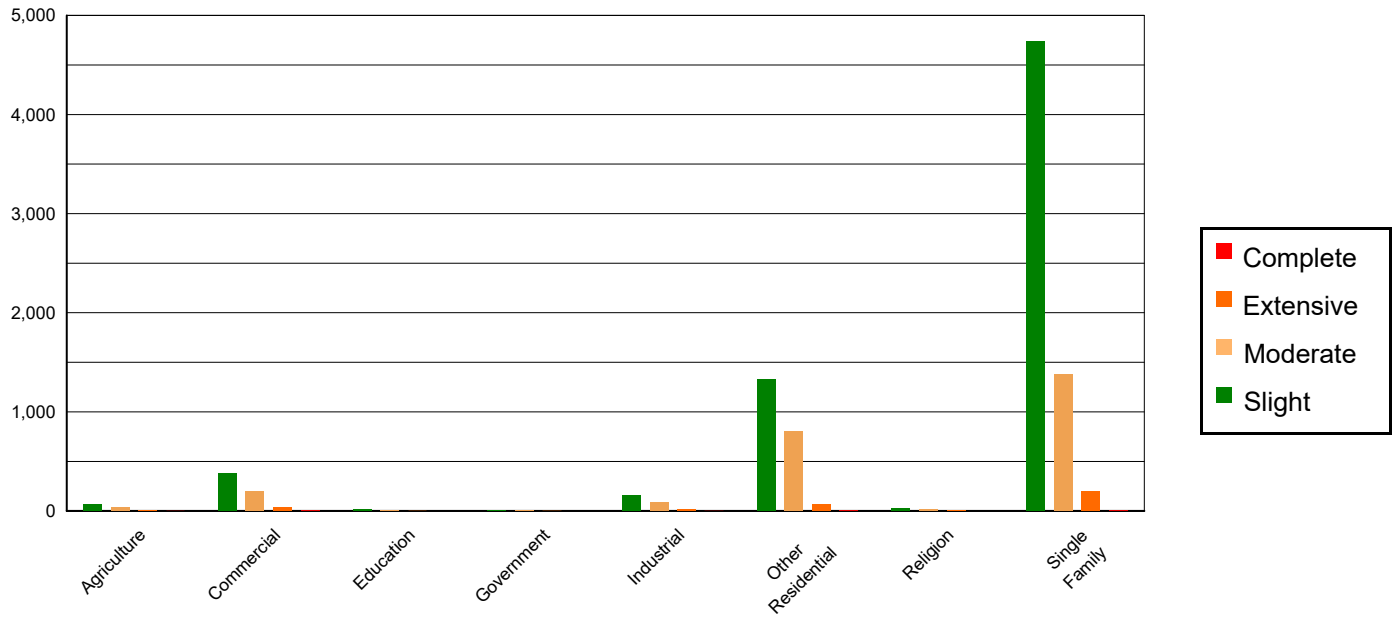


Table 3: Expected Building Damage by Occupancy

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	687.87	0.85	64.96	0.97	34.59	1.37	6.32	1.93	0.26	1.93
Commercial	3416.41	4.23	378.25	5.64	200.67	7.94	37.86	11.55	1.80	13.27
Education	129.41	0.16	11.73	0.17	5.90	0.23	0.92	0.28	0.04	0.33
Government	86.71	0.11	8.52	0.13	4.16	0.16	0.58	0.18	0.03	0.22
Industrial	1270.92	1.57	153.85	2.29	88.72	3.51	16.88	5.15	0.64	4.69
Other Residential	7702.04	9.54	1324.80	19.75	805.64	31.89	63.38	19.34	2.14	15.77
Religion	283.64	0.35	25.99	0.39	12.45	0.49	1.82	0.56	0.10	0.72
Single Family	67164.74	83.18	4739.68	70.66	1374.04	54.39	199.98	61.02	8.55	63.07
Total	**80,742**		**6,708**		**2,526**		**328**		**14**	

Table 4: Expected Building Damage by Building Type (All Design Levels)

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Wood	55227.73	68.40	3689.00	55.00	533.29	21.11	31.27	9.54	0.02	0.12
Steel	1260.54	1.56	143.82	2.14	92.43	3.66	14.69	4.48	0.78	5.72
Concrete	1030.28	1.28	116.24	1.73	52.08	2.06	5.56	1.70	0.14	1.06
Precast	1058.55	1.31	120.34	1.79	102.08	4.04	26.60	8.12	0.48	3.55
RM	14815.71	18.35	1052.24	15.69	735.24	29.10	131.80	40.21	0.63	4.65
URM	2060.26	2.55	414.49	6.18	245.59	9.72	60.58	18.48	9.62	70.94
MH	5288.65	6.55	1171.67	17.47	765.45	30.30	57.25	17.47	1.89	13.95
Total	**80,742**		**6,708**		**2,526**		**328**		**14**	

*Note:

RM Reinforced Masonry
URM Unreinforced Masonry
MH Manufactured Housing

Essential Facility Damage

Before the earthquake, the region had 300 hospital beds available for use. On the day of the earthquake, the model estimates that only 246 hospital beds (82.00%) are available for use by patients already in the hospital and those injured by the earthquake. After one week, 93.00% of the beds will be back in service. By 30 days, 99.00% will be operational.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate Damage > 50%	Complete Damage > 50%	With Functionality > 50% on day 1
Hospitals	2	0	0	2
Schools	111	0	0	111
EOCs	4	0	0	4
PoliceStations	22	0	0	22
FireStations	45	0	0	45

Transportation Lifeline Damage

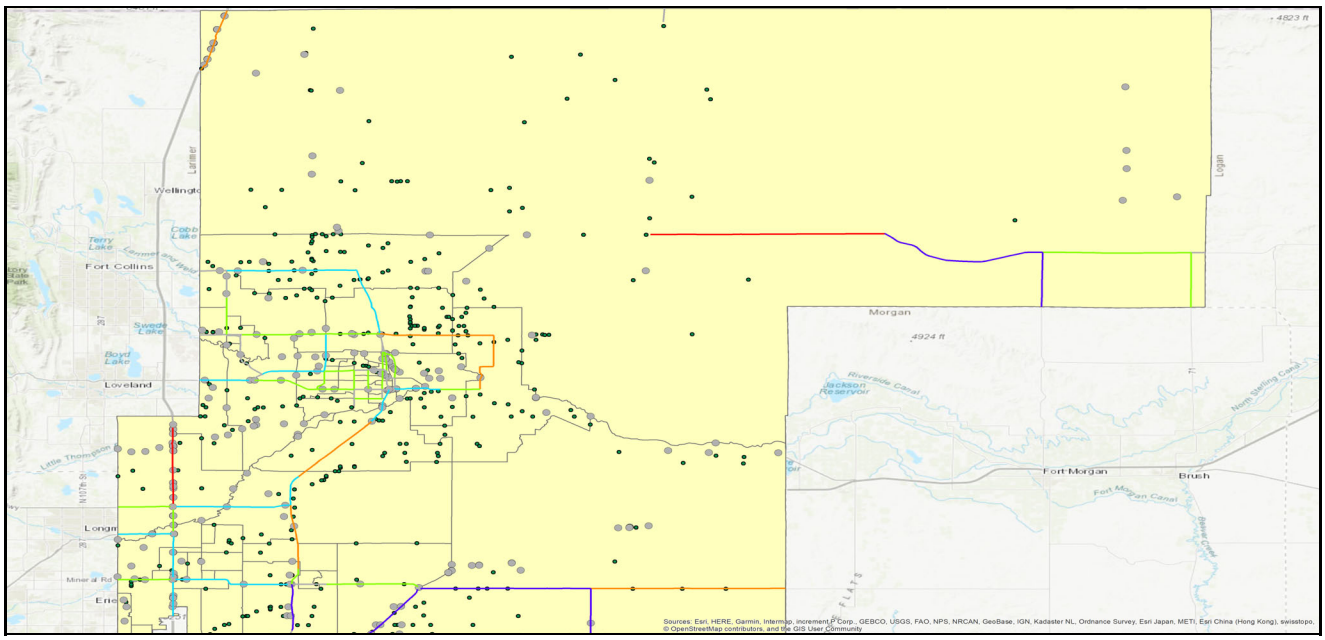


Table 6: Expected Damage to the Transportation Systems

System	Component	Locations/ Segments	Number of Locations			
			With at Least Mod. Damage	With Complete Damage	With Functionality > 50 %	
					After Day 1	After Day 7
Highway	Segments	131	0	0	131	131
	Bridges	600	0	0	600	600
	Tunnels	0	0	0	0	0
Railways	Segments	285	0	0	285	285
	Bridges	95	0	0	95	95
	Tunnels	0	0	0	0	0
	Facilities	0	0	0	0	0
Light Rail	Segments	0	0	0	0	0
	Bridges	0	0	0	0	0
	Tunnels	0	0	0	0	0
	Facilities	0	0	0	0	0
Bus	Facilities	2	0	0	2	2
Ferry	Facilities	0	0	0	0	0
Port	Facilities	0	0	0	0	0
Airport	Facilities	3	0	0	3	3
	Runways	6	0	0	6	6

Table 6 provides damage estimates for the transportation system.

Note: Roadway segments, railroad tracks and light rail tracks are assumed to be damaged by ground failure only. If ground failure maps are not provided, damage estimates to these components will not be computed.

Tables 7-9 provide information on the damage to the utility lifeline systems. Table 7 provides damage to the utility system facilities. Table 8 provides estimates on the number of leaks and breaks by the pipelines of the utility systems. For electric power and potable water, Hazus performs a simplified system performance analysis. Table 9 provides a summary of the system performance information.

Table 7 : Expected Utility System Facility Damage

System	# of Locations				
	Total #	With at Least Moderate Damage	With Complete Damage	with Functionality > 50 %	
				After Day 1	After Day 7
Potable Water	0	0	0	0	0
Waste Water	60	0	0	60	60
Natural Gas	20	0	0	20	20
Oil Systems	0	0	0	0	0
Electrical Power	11	0	0	11	11
Communication	16	0	0	16	16

Table 8 : Expected Utility System Pipeline Damage (Site Specific)

System	Total Pipelines Length (miles)	Number of Leaks	Number of Breaks
Potable Water	10,785	111	28
Waste Water	6,471	56	14
Natural Gas	541	0	0
Oil	0	0	0

Table 9: Expected Potable Water and Electric Power System Performance

	Total # of Households	Number of Households without Service				
		At Day 1	At Day 3	At Day 7	At Day 30	At Day 90
Potable Water	89,349	0	0	0	0	0
Electric Power		0	0	0	0	0

Induced Earthquake Damage

Fire Following Earthquake

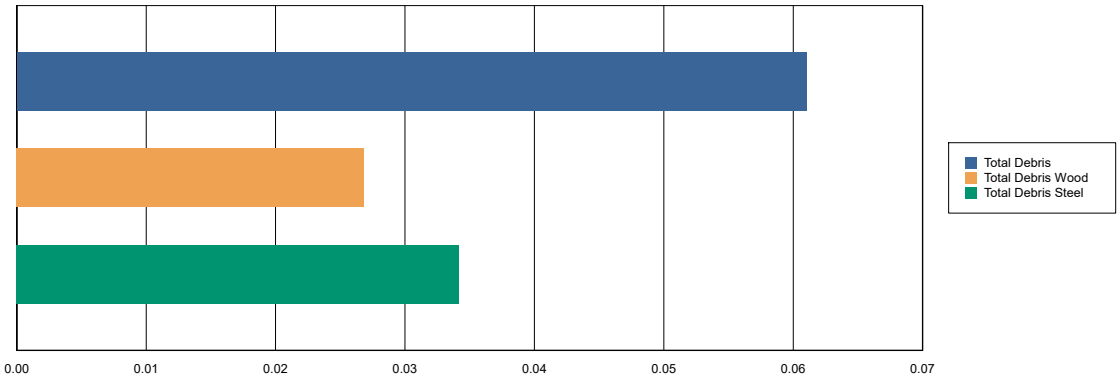
Fires often occur after an earthquake. Because of the number of fires and the lack of water to fight the fires, they can often burn out of control. Hazus uses a Monte Carlo simulation model to estimate the number of ignitions and the amount of burnt area. For this scenario, the model estimates that there will be 0 ignitions that will burn about 0.00 sq. mi 0.00 % of the region's total area.) The model also estimates that the fires will displace about 11 people and burn about 0 (millions of dollars) of building value.

Debris Generation

Hazus estimates the amount of debris that will be generated by the earthquake. The model breaks the debris into two general categories: a) Brick/Wood and b) Reinforced Concrete/Steel. This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 61,000 tons of debris will be generated. Of the total amount, Brick/Wood comprises 44.00% of the total, with the remainder being Reinforced Concrete/Steel. If the debris tonnage is converted to an estimated number of truckloads, it will require 2,440 truckloads (@25 tons/truck) to remove the debris generated by the earthquake.

Earthquake Debris (millions of tons)



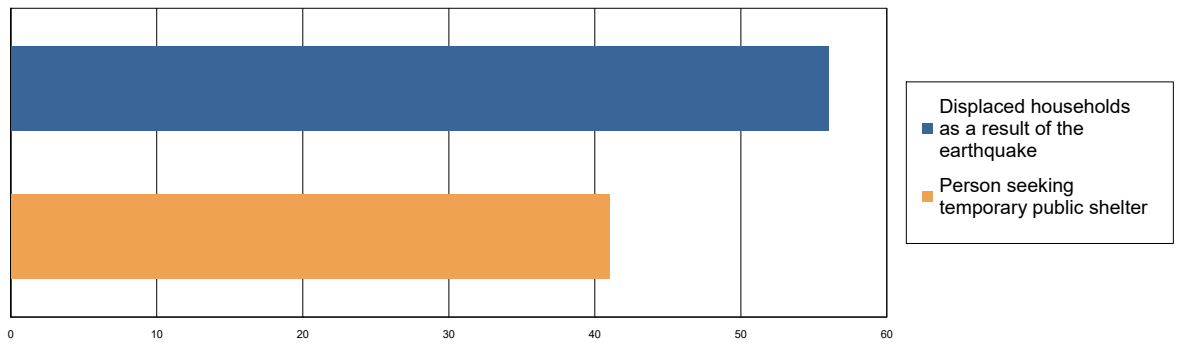
Brick/ Wood	Reinforced Concrete/Steel	Total Debris	Truck Load
0.03	0.03	0.06	2,440 (@25 tons/truck)

Social Impact

Shelter Requirement

Hazus estimates the number of households that are expected to be displaced from their homes due to the earthquake and the number of displaced people that will require accommodations in temporary public shelters. The model estimates 56 households to be displaced due to the earthquake. Of these, 41 people (out of a total population of 252,825) will seek temporary shelter in public shelters.

Displaced Households/ Persons Seeking Short Term Public Shelter



Displaced households as a result of the earthquake	Persons seeking temporary public shelter
56	41

Casualties

Hazus estimates the number of people that will be injured and killed by the earthquake. The casualties are broken down into four (4) severity levels that describe the extent of the injuries. The levels are described as follows;

- Severity Level 1: Injuries will require medical attention but hospitalization is not needed.
- Severity Level 2: Injuries will require hospitalization but are not considered life-threatening
- Severity Level 3: Injuries will require hospitalization and can become life threatening if not promptly treated.
- Severity Level 4: Victims are killed by the earthquake.

The casualty estimates are provided for three (3) times of day: 2:00 AM, 2:00 PM and 5:00 PM. These times represent the periods of the day that different sectors of the community are at their peak occupancy loads. The 2:00 AM estimate considers that the residential occupancy load is maximum, the 2:00 PM estimate considers that the educational, commercial and industrial sector loads are maximum and 5:00 PM represents peak commute time.

Table 10 provides a summary of the casualties estimated for this earthquake

Table 10: Casualty Estimates

		Level 1	Level 2	Level 3	Level 4
2 AM	Commercial	0.65	0.08	0.01	0.01
	Commuting	0.00	0.00	0.00	0.00
	Educational	0.00	0.00	0.00	0.00
	Hotels	0.00	0.00	0.00	0.00
	Industrial	0.96	0.12	0.01	0.01
	Other-Residential	9.80	1.00	0.03	0.05
	Single Family	25.13	2.80	0.19	0.36
	Total	**37**	**4**	**0**	**0**
2 PM	Commercial	36.97	4.82	0.35	0.67
	Commuting	0.00	0.00	0.00	0.00
	Educational	8.16	1.04	0.07	0.14
	Hotels	0.00	0.00	0.00	0.00
	Industrial	7.05	0.86	0.05	0.10
	Other-Residential	1.71	0.18	0.01	0.01
	Single Family	4.45	0.51	0.04	0.07
	Total	**58**	**7**	**1**	**1**
5 PM	Commercial	26.82	3.52	0.26	0.49
	Commuting	0.01	0.01	0.03	0.00
	Educational	0.69	0.08	0.01	0.01
	Hotels	0.00	0.00	0.00	0.00
	Industrial	4.41	0.54	0.03	0.06
	Other-Residential	3.56	0.37	0.01	0.02
	Single Family	9.68	1.12	0.08	0.15
	Total	**45**	**6**	**0**	**1**

Economic Loss

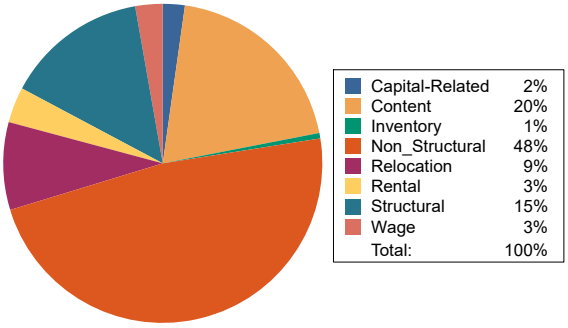
The total economic loss estimated for the earthquake is 591.16 (millions of dollars), which includes building and lifeline related losses based on the region's available inventory. The following three sections provide more detailed information about these losses.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the earthquake. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the earthquake.

The total building-related losses were 225.36 (millions of dollars); 17 % of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 67 % of the total loss. Table 11 below provides a summary of the losses associated with the building damage.

Earthquake Losses by Loss Type ($ millions)



Earthquake Losses by Occupancy Type ($ millions)

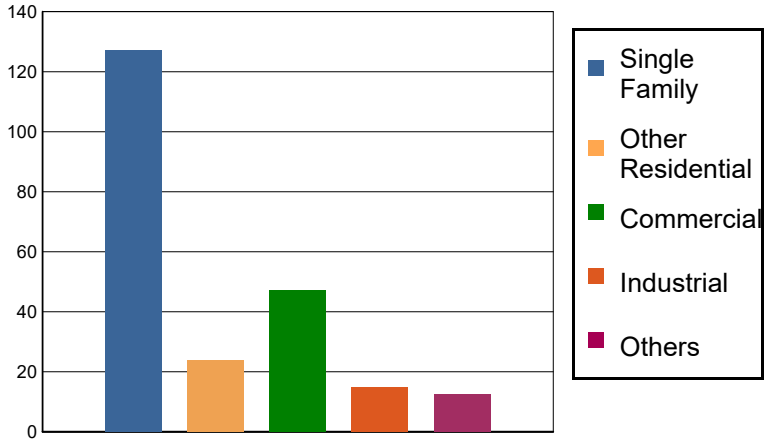


Table 11: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
Income Losses							
	Wage	0.0000	0.2607	5.2852	0.3232	0.3174	6.1865
	Capital-Related	0.0000	0.1108	4.4391	0.1968	0.0954	4.8421
	Rental	3.1903	1.1996	3.0274	0.1487	0.1182	7.6842
	Relocation	11.2207	1.8800	4.7551	0.8236	1.2949	19.9743
	Subtotal	**14.4110**	**3.4511**	**17.5068**	**1.4923**	**1.8259**	**38.6871**
Capital Stock Losses							
	Structural	18.7196	3.5174	5.9484	1.9111	2.7996	32.8961
	Non_Structural	68.5934	13.4523	14.6696	6.4049	4.5516	107.6718
	Content	25.4993	3.2462	8.8047	4.2255	3.0627	44.8384
	Inventory	0.0000	0.0000	0.2671	0.7912	0.2063	1.2646
	Subtotal	**112.8123**	**20.2159**	**29.6898**	**13.3327**	**10.6202**	**186.6709**
	Total	**127.22**	**23.67**	**47.20**	**14.83**	**12.45**	**225.36**

Transportation and Utility Lifeline Losses

For the transportation and utility lifeline systems, Hazus computes the direct repair cost for each component only. There are no losses computed by Hazus for business interruption due to lifeline outages. Tables 12 & 13 provide a detailed breakdown in the expected lifeline losses.

Table 12: Transportation System Economic Losses
(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Highway	Segments	4185.4655	0.0000	0.00
	Bridges	753.3787	0.4211	0.06
	Tunnels	0.0000	0.0000	0.00
	Subtotal	**4938.8442**	**0.4211**	
Railways	Segments	493.9823	0.0000	0.00
	Bridges	418.9648	0.0031	0.00
	Tunnels	0.0000	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Subtotal	**912.9471**	**0.0031**	
Light Rail	Segments	0.0000	0.0000	0.00
	Bridges	0.0000	0.0000	0.00
	Tunnels	0.0000	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Subtotal	**0.0000**	**0.0000**	
Bus	Facilities	2.8225	0.1657	5.87
	Subtotal	**2.8225**	**0.1657**	
Ferry	Facilities	0.0000	0.0000	0.00
	Subtotal	**0.0000**	**0.0000**	
Port	Facilities	0.0000	0.0000	0.00
	Subtotal	**0.0000**	**0.0000**	
Airport	Facilities	26.6373	1.9710	7.40
	Runways	197.0052	0.0000	0.00
	Subtotal	**223.6425**	**1.9710**	
	Total	**6,078.26**	**2.56**	

Table 13: Utility System Economic Losses

(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Potable Water	Pipelines	0.0000	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Distribution Line	347.1444	0.4994	0.14
	Subtotal	**347.1444**	**0.4994**	
Waste Water	Pipelines	0.0000	0.0000	0.00
	Facilities	7567.8281	219.4115	2.90
	Distribution Line	208.2866	0.2508	0.12
	Subtotal	**7776.1147**	**219.6623**	
Natural Gas	Pipelines	524.0924	0.0000	0.00
	Facilities	30.8710	0.5886	1.91
	Distribution Line	138.8577	0.0859	0.06
	Subtotal	**693.8211**	**0.6745**	
Oil Systems	Pipelines	0.0000	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Subtotal	**0.0000**	**0.0000**	
Electrical Power	Facilities	6016.3351	142.3586	2.37
	Subtotal	**6016.3351**	**142.3586**	
Communication	Facilities	1.5520	0.0415	2.67
	Subtotal	**1.5520**	**0.0415**	
	Total	**14,834.97**	**363.24**	

Appendix A: County Listing for the Region

Weld,CO

Appendix B: Regional Population and Building Value Data

State	County Name	Population	Building Value (millions of dollars)		
			Residential	Non-Residential	Total
Colorado					
	Weld	252,825	19,447	4,310	23,758
Total Region		**252,825**	**19,447**	**4,310**	**23,758**

9 Appendix D: Flood Hazus Risk Report

Hazus: Flood Global Risk Report

Region Name: WeldFL100

Flood Scenario: 100yr

Print Date: Thursday, July 30, 2020

Disclaimer:
This version of Hazus utilizes 2010 Census Data.
Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific Flood. These results can be improved by using enhanced inventory data and flood hazard information.

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General Description of the Region

Hazus is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- Colorado

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is approximately 4,017 square miles and contains 9,901 census blocks. The region contains over 89 thousand households and has a total population of 252,825 people (2010 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 90,317 buildings in the region with a total building replacement value (excluding contents) of 23,758 million dollars. Approximately 92.32% of the buildings (and 81.86% of the building value) are associated with residential housing.

Building Inventory

General Building Stock

Hazus estimates that there are 90,317 buildings in the region which have an aggregate total replacement value of 23,758 million dollars. Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure ($1000)	Percent of Total
Residential	19,447,624	81.9%
Commercial	2,574,702	10.8%
Industrial	791,666	3.3%
Agricultural	378,289	1.6%
Religion	235,458	1.0%
Government	72,385	0.3%
Education	257,935	1.1%
Total	**23,758,059**	**100%**

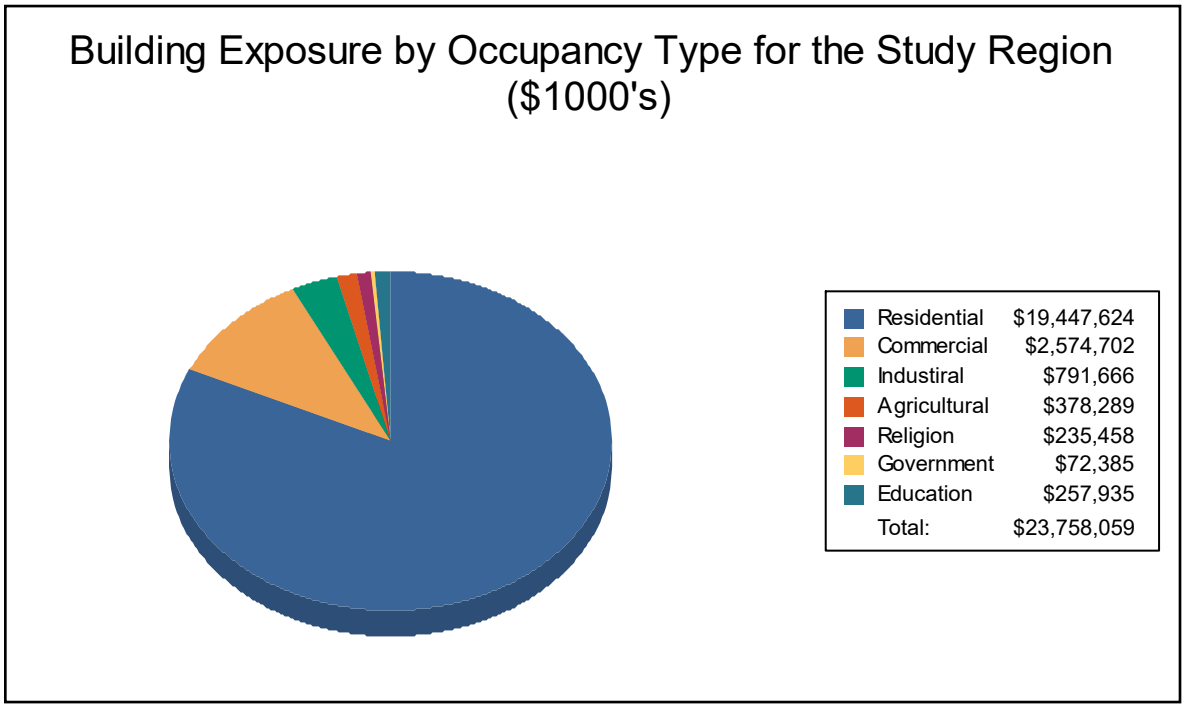
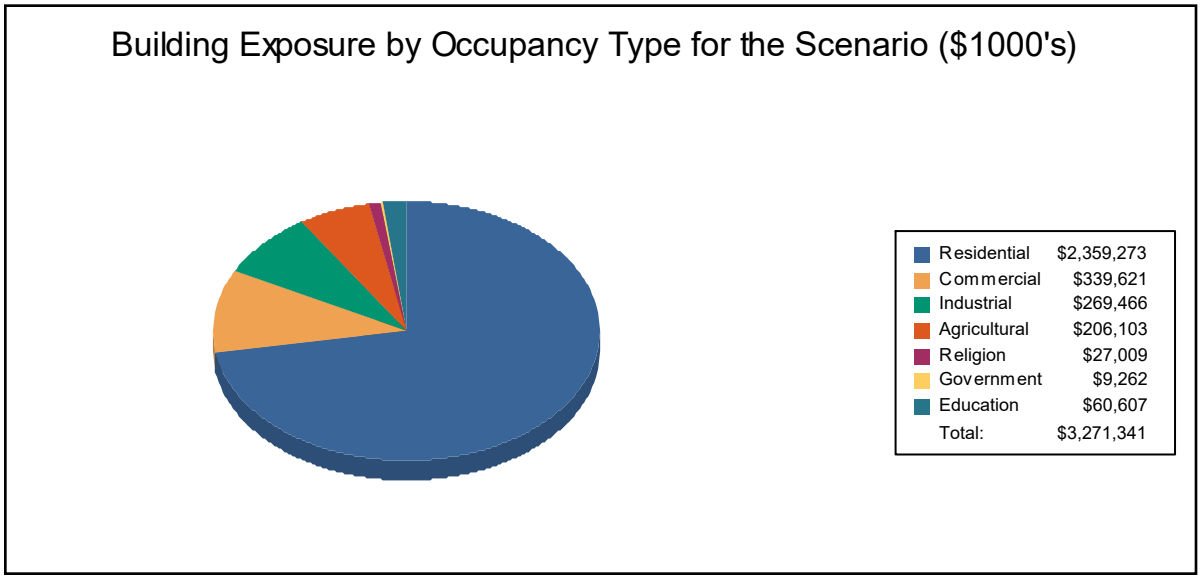


Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure ($1000)	Percent of Total
Residential	2,359,273	72.1%
Commercial	339,621	10.4%
Industrial	269,466	8.2%
Agricultural	206,103	6.3%
Religion	27,009	0.8%
Government	9,262	0.3%
Education	60,607	1.9%
Total	**3,271,341**	**100%**



Essential Facility Inventory

For essential facilities, there are 2 hospitals in the region with a total bed capacity of 300 beds. There are 111 schools, 45 fire stations, 22 police stations and 4 emergency operation centers.

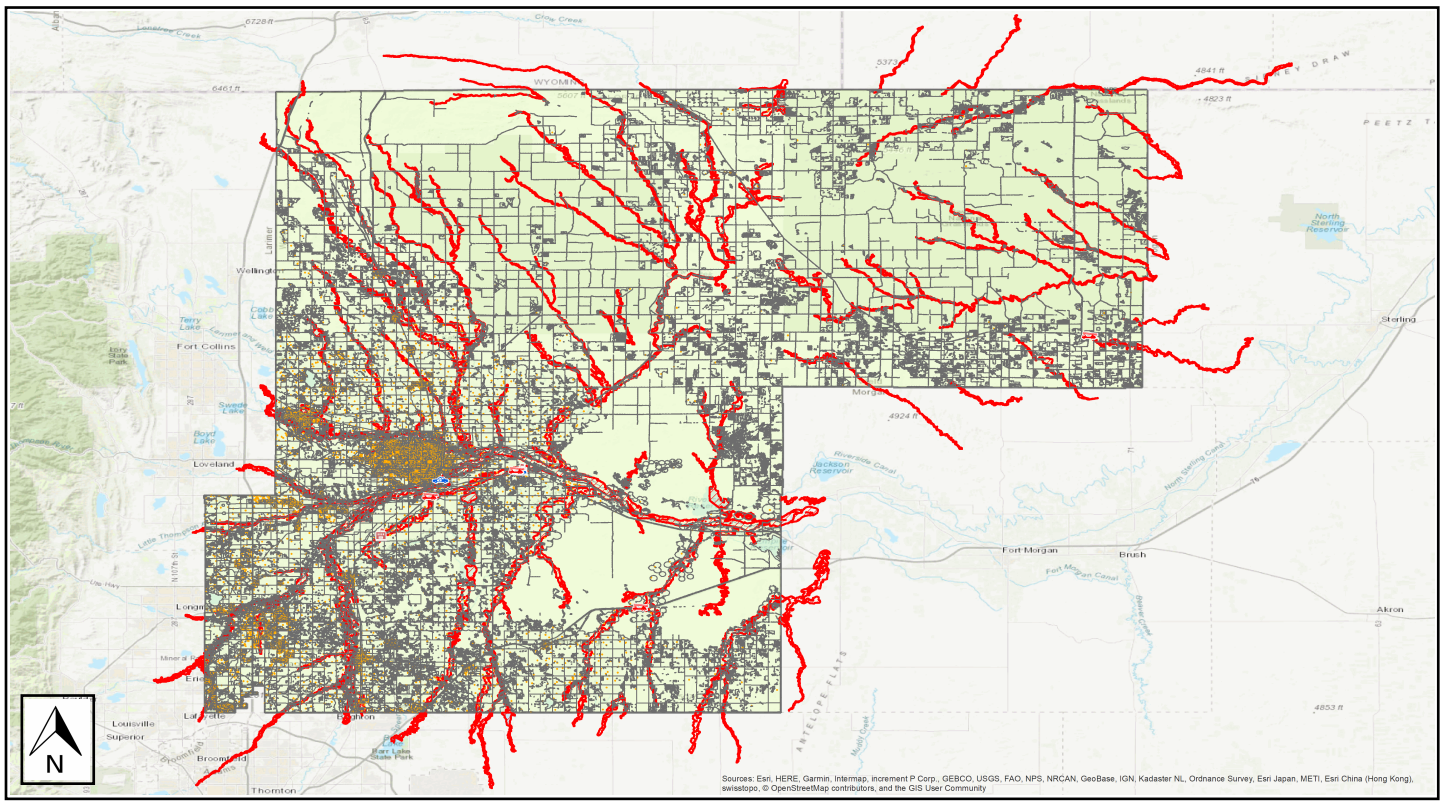
Flood Scenario Parameters

Hazus used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	WeldFL100
Scenario Name:	100yr
Return Period Analyzed:	100
Analysis Options Analyzed:	No What-Ifs

Study Region Overview Map

Illustrating scenario flood extent, as well as exposed essential facilities and total exposure



Building Damage

General Building Stock Damage

Hazus estimates that about 725 buildings will be at least moderately damaged. This is over 71% of the total number of buildings in the scenario. There are an estimated 11 buildings that will be completely destroyed. The definition of the 'damage states' is provided in the Hazus Flood Technical Manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Total Economic Loss (1 dot = $300K) Overview Map

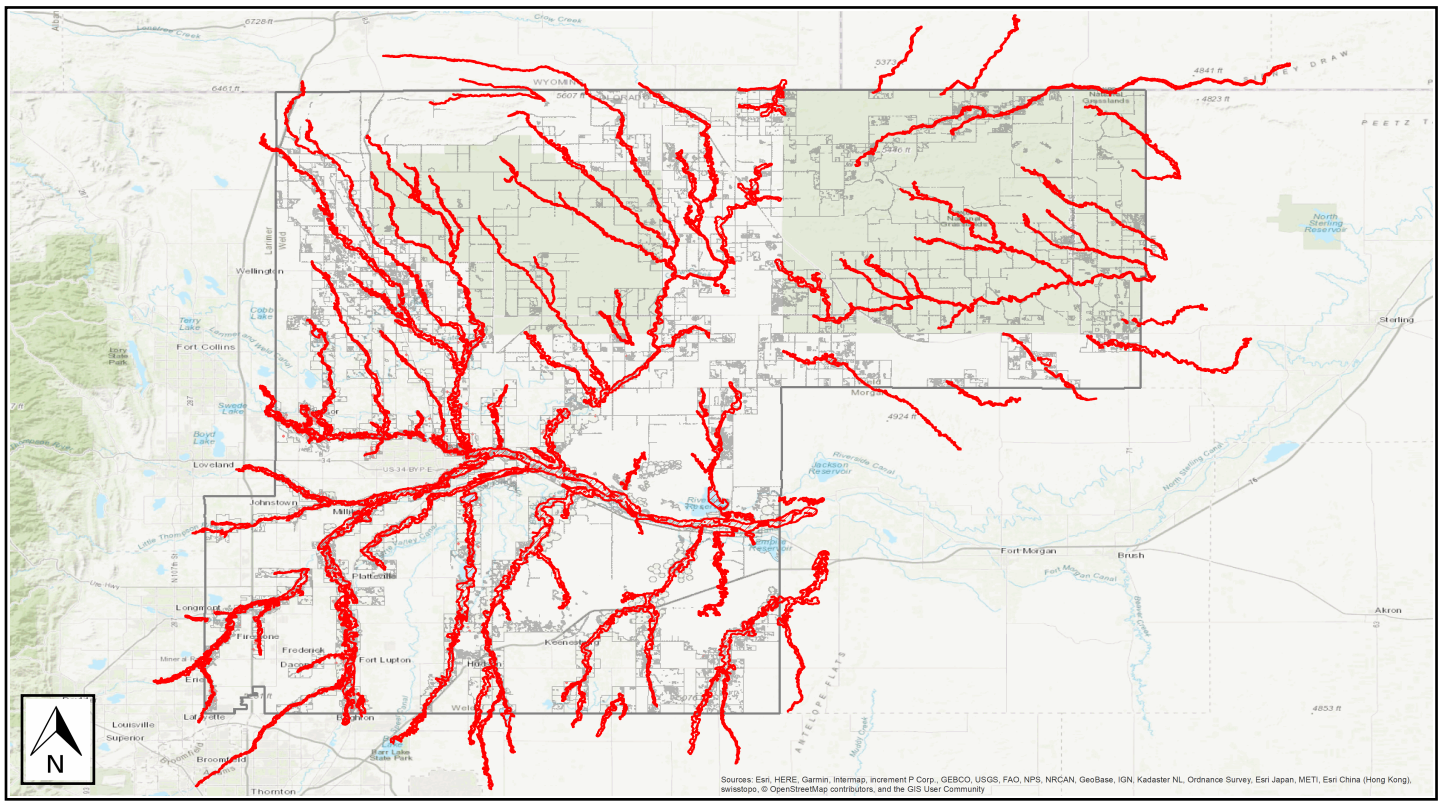


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Table 3: Expected Building Damage by Occupancy

	1-10		11-20		21-30		31-40		41-50		>50	
Occupancy	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**	**Count**	**(%)**
Agriculture	6	86	1	14	0	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0	0	0	0	0	0
Education	0	0	0	0	0	0	0	0	0	0	0	0
Government	1	100	0	0	0	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0	0	0	0	0	0
Religion	0	0	0	0	0	0	0	0	0	0	0	0
Residential	324	31	476	45	137	13	77	7	23	2	11	1
Total	**331**		**477**		**137**		**77**		**23**		**11**	

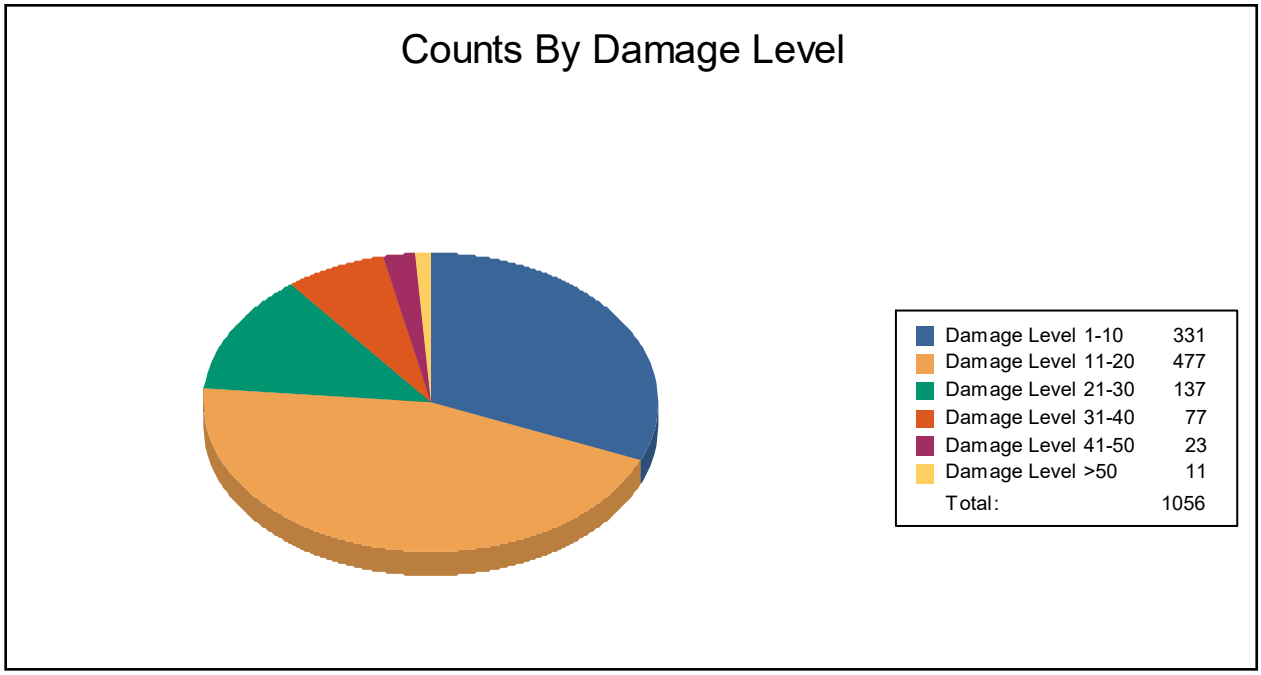

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Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		>50	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	1	100	0	0	0	0	0	0	0	0	0	0
ManufHousing	0	0	0	0	0	0	0	0	0	0	1	100
Masonry	48	31	79	50	18	11	9	6	2	1	1	1
Steel	2	100	0	0	0	0	0	0	0	0	0	0
Wood	281	31	397	44	119	13	68	8	21	2	9	1

Essential Facility Damage

Before the flood analyzed in this scenario, the region had 300 hospital beds available for use. On the day of the scenario flood event, the model estimates that 300 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

		# Facilities		
Classification	Total	At Least Moderate	At Least Substantial	Loss of Use
Emergency Operation Centers	4	0	0	0
Fire Stations	45	4	0	4
Hospitals	2	0	0	0
Police Stations	22	2	0	2
Schools	111	4	0	4

If this report displays all zeros or is blank, two possibilities can explain this.

(1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.

(2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

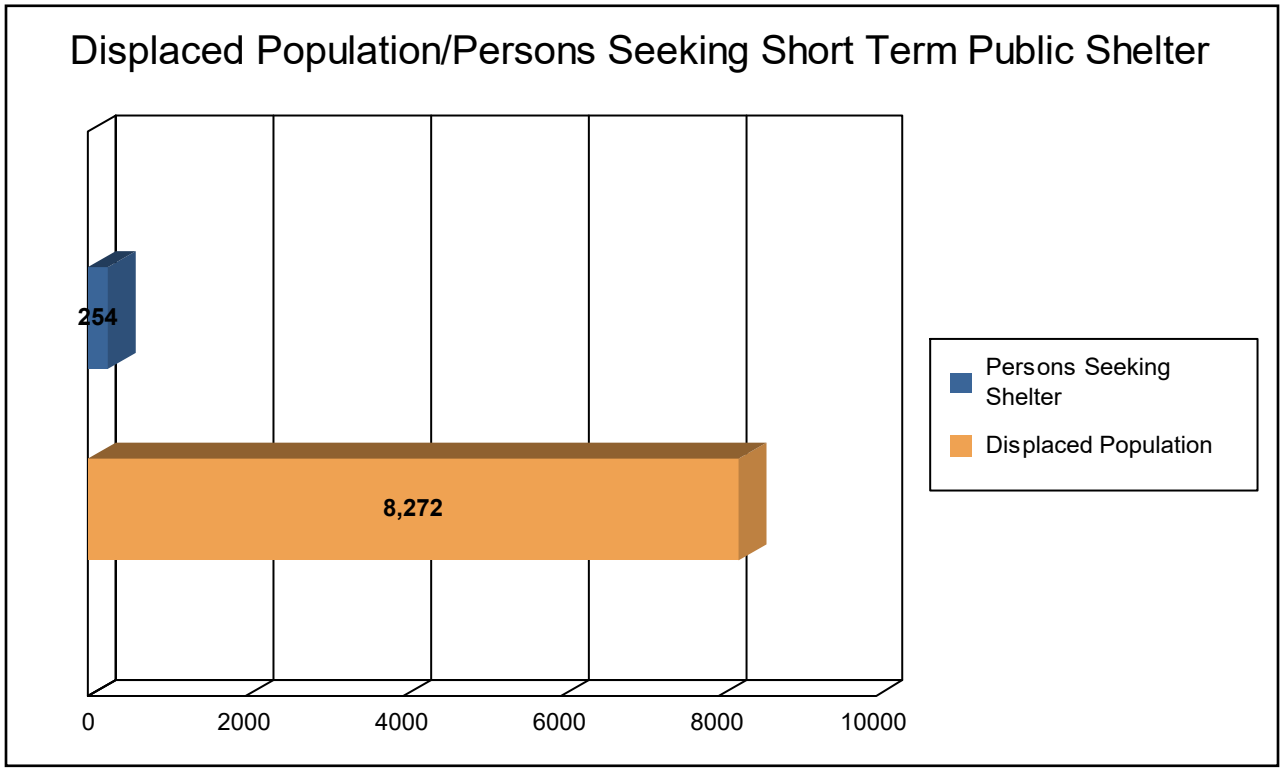
Hazus estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

Analysis has not been performed for this Scenario.

Social Impact

Shelter Requirements

Hazus estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. Hazus also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 2,757 households (or 8,272 of people) will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 254 people (out of a total population of 252,825) will seek temporary shelter in public shelters.



Economic Loss

The total economic loss estimated for the flood is 456.78 million dollars, which represents 13.96 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 250.79 million dollars. 45% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 41.51% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

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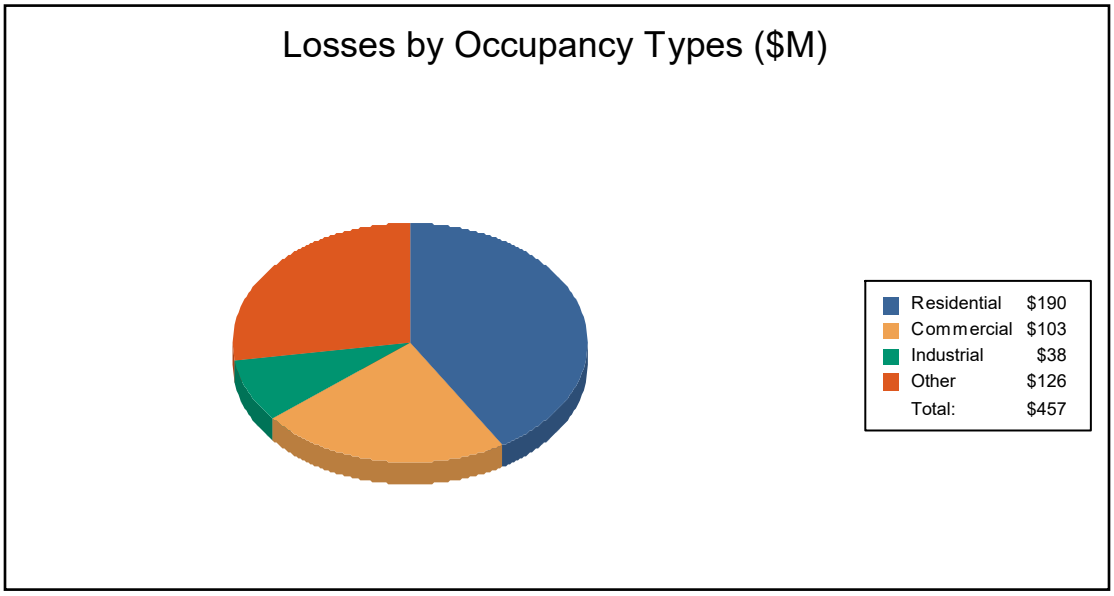
Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	90.60	9.12	8.99	8.36	117.08
	Content	47.83	27.22	21.81	30.37	127.23
	Inventory	0.00	0.93	3.65	1.91	6.49
	Subtotal	**138.44**	**37.27**	**34.44**	**40.64**	**250.79**
Business Interruption						
	Income	0.24	26.12	1.08	18.15	45.58
	Relocation	38.74	6.87	0.99	8.74	55.34
	Rental Income	11.65	5.05	0.24	0.59	17.53
	Wage	0.57	27.54	1.73	57.71	87.54
	Subtotal	**51.19**	**65.58**	**4.03**	**85.19**	**205.99**
ALL	**Total**	**189.63**	**102.85**	**38.48**	**125.82**	**456.78**



Appendix A: County Listing for the Region

Colorado

- Weld

Appendix B: Regional Population and Building Value Data

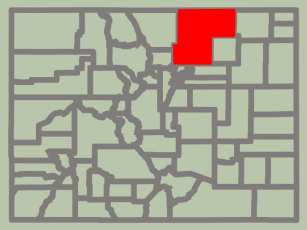
	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
Colorado				
Weld	252,825	19,447,624	4,310,435	23,758,059
Total	**252,825**	**19,447,624**	**4,310,435**	**23,758,059**
Total Study Region	**252,825**	**19,447,624**	**4,310,435**	**23,758,059**

10 Appendix E: Wildfire Risk Assessment Summary Report

2017 Colorado Wildfire Risk Assessment Summary Report

COLORADO STATE FOREST SERVICE
COLORADO STATE UNIVERSITY

Weld HMP



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User should also note that property boundaries included in any product do not represent an on-the-ground survey suitable for legal, engineering, or surveying purposes. They represent only the approximate relative locations.

Introduction

Colorado Wildfire Risk Assessment Report

Welcome to the Colorado Wildfire Risk Assessment Summary Reporting Tool.

This tool allows users of the Risk Reduction Planner application of the Colorado Forest Atlas web portal to define a specific project area and generate information for this area. A detailed risk summary report can be generated using a set of predefined map products developed by the Colorado Wildfire Risk Assessment project which have been summarized explicitly for the user defined project area. The report is generated in PDF format.

The report has been designed so that information from the report can be copied and pasted into other specific plans, reports, or documents depending on user needs. Examples include, but are not limited to, Community Wildfire Protection Plans, Local Fire Plans, Fuels Mitigation Plans, Hazard Mitigation Plans, Homeowner Risk Assessments, and Forest Management or Stewardship Plans. Example templates for some of these reports are available for download on the Colorado Forest Atlas web portal.

The Colorado WRA provides a consistent, comparable set of scientific results to be used as a foundation for wildfire mitigation and prevention planning in Colorado.

Results of the assessment can be used to help prioritize areas in the state where mitigation treatments, community interaction and education, or tactical analyses might be necessary to reduce risk from wildfires.

The Colorado WRA products included in this report are designed to provide the information needed to support the following key priorities:

- Identify areas that are most prone to wildfire
- Plan and prioritize hazardous fuel treatment programs
- Allow agencies to work together to better define priorities and improve emergency response, particularly across jurisdictional boundaries
- Increase communication with local residents and the public to address community priorities and needs

Products

Each product in this report is accompanied by a general description, table, chart and/or map. A list of available Colorado WRA products in this report is provided in the following table.

COWRA Product	Description
Wildfire Risk	The overall composite risk occurring from a wildfire derived by combining Burn Probability and Values at Risk Rating
Burn Probability	Annual probability of any location burning due to wildfire
Fire Intensity Scale	Quantifies the potential fire intensity by orders of magnitude
Wildland Urban Interface	Housing density depicting where humans and their structures meet or intermix with wildland fuel
Wildland Urban Interface Risk	Annual probability of any location burning due to wildfire
Values at Risk Rating	A composite rating of values and assets that would be adversely impacted by a wildfire by combining the four main risk outputs
Suppression Difficulty Rating	Reflects the difficulty or relative cost to suppress a fire given the terrain and vegetation conditions that may impact machine operability
Drinking Water Risk Index	A measure of the risk to Drinking Water Risk Index Areas (DWIA) based on the potential negative impacts from wildfire
Forest Assets Risk Index	A measure of the risk to forested areas based on the potential negative impacts from wildfire
Riparian Assets Risk Index	A measure of the risk to riparian areas based on the potential negative impacts from wildfire
Characteristic Flame Length	A measure of the expected flame length of a potential fire

COWRA Product	Description
Characteristic Rate of Spread	A measure of the expected rate of spread of a potential fire
Fire Type Extreme Weather	Represents the potential fire type under the extreme percentile weather category
Surface Fuels	A measure of the expected rate of spread of a potential fire
Characteristic Rate of Spread	Characterization of surface fuel models that contain the parameters for calculating fire behavior outputs
Vegetation	General vegetation and landcover types
Forest Assets	Identifies forested land categorized by susceptibility or response to fire
Riparian Assets	Forested riparian areas characterized by functions of water quantity and quality, and ecology
Drinking Water Importance Areas	A measure of quality and quantity of public surface drinking water categorized by watershed

Wildland Urban Interface

Description

Colorado is one of the fastest growing states in the Nation, with much of this growth occurring outside urban boundaries. This increase in population across the state will impact counties and communities that are located within the Wildland Urban Interface (WUI). The WUI is described as the area where structures and other human improvements meet and intermingle with undeveloped wildland or vegetative fuels. Population growth within the WUI substantially increases the risk from wildfire.

For the **Weld HMP** project area, it is estimated that **174,680** people or **59.2 %** percent of the total project area population (294,924) live within the WUI.

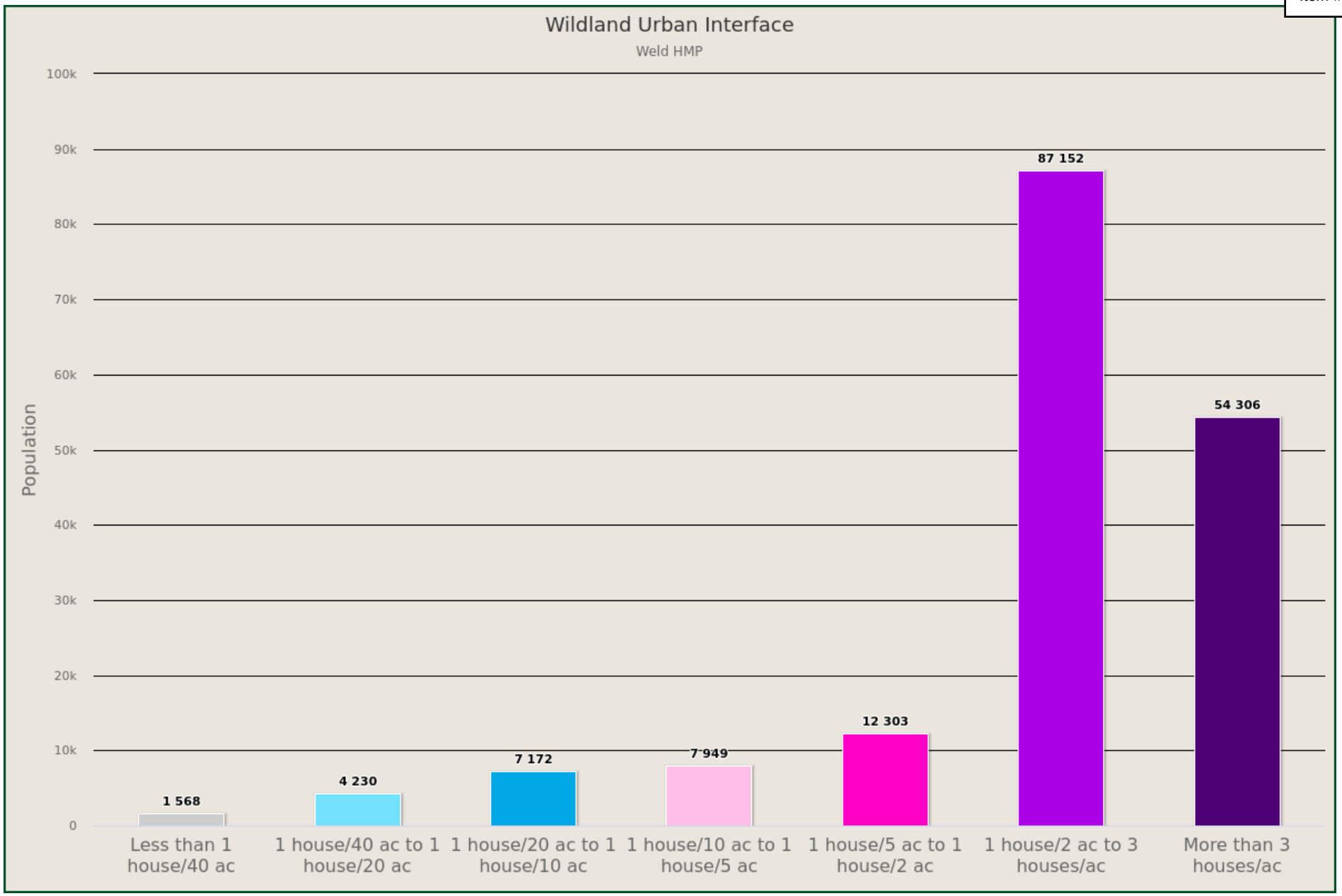
The Wildland Urban Interface (WUI) layer reflects housing density depicting where humans and their structures meet or intermix with wildland fuels. In the past, conventional wildland-urban interface datasets, such as USFS SILVIS, have been used to reflect these concerns. However, USFS SILVIS and other existing data sources did not provide the level of detail needed by the Colorado State Forest Service and local fire protection agencies.

The new WUI dataset is derived using advanced modeling techniques based on the Where People Live dataset and 2016 LandScan USA population count data available from the Department of Homeland Security, HSIP dataset. WUI is simply a subset of the Where People Live dataset. The primary difference is populated areas surrounded by sufficient non-burnable areas (i.e. interior urban areas) are removed from the Where People Live dataset, as these areas are not expected to be directly impacted by a wildfire. This accommodates WUI areas based on encroachment into urban areas where wildland fire is likely to spread.

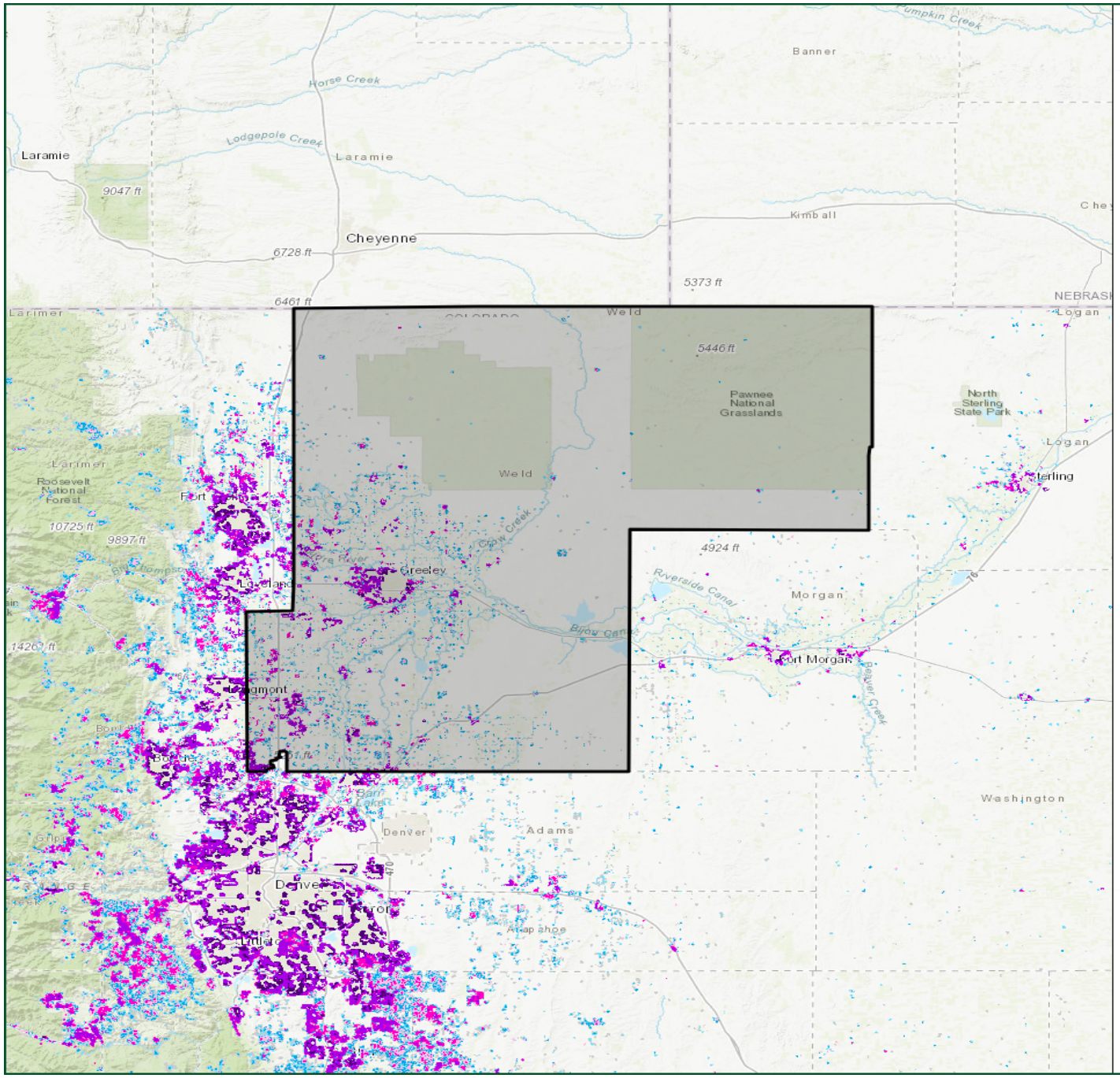
A more detailed description of the risk assessment algorithms is provided in the Colorado Wildfire Risk Assessment (Colorado WRA) Final Report, which can be downloa from www.ColoradoForestAtlas.org.

Data are modeled at a 30-meter cell resolution (30 m2 or 900 m area per map cell), which is consistent with other Colorado WRA layers. The WUI classes are based on the number of houses per acre. Class breaks are based on densities understood and commonly used for fire protection planning.

Housing Density	WUI Population	Percent of WUI Population	WUI Acres	Percent of WUI Acres
Less than 1 house/40 ac	1,568	0.9 %	36,099	24.6 %
1 house/40 ac to 1 house/20 ac	4,230	2.4 %	30,511	20.8 %
1 house/20 ac to 1 house/10 ac	7,172	4.1 %	25,016	17.0 %
1 house/10 ac to 1 house/5 ac	7,949	4.6 %	15,642	10.6 %
1 house/5 ac to 1 house/2 ac	12,303	7.0 %	13,836	9.4 %
1 house/2 ac to 3 houses/ac	87,152	49.9 %	21,974	14.9 %
More than 3 houses/ac	54,306	31.1 %	3,928	2.7 %
Total	**174,680**	**100.0 %**	**147,007**	**100.0 %**


Wildland Urban Interface
Weld HMP
Population
100k
90k
80k
70k
60k
50k
40k
30k
20k
10k
0
1 568
4 230
7 172
7 949
12 303
87 152
54 306
Less than 1 house/40 ac
1 house/40 ac to 1 house/20 ac
1 house/20 ac to 1 house/10 ac
1 house/10 ac to 1 house/5 ac
1 house/5 ac to 1 house/2 ac
1 house/2 ac to 3 houses/ac
More than 3 houses/ac

Weld HMP
Wildland Urban Interface
Acres
40k
35k
30k
25k
20k
15k
10k
5k
0
36 099
30 511
25 016
15 642
13 836
21 974
3 928
Less than 1 house/40 ac
1 house/40 ac to 1 house/20 ac
1 house/20 ac to 1 house/10 ac
1 house/10 ac to 1 house/5 ac
1 house/5 ac to 1 house/2 ac
1 house/2 ac to 3 houses/ac
More than 3 houses/ac



Weld HMP

Wildland Urban Interface

- Less than 1 house/40 ac
- 1 house/40 ac to 1 house/20 ac
- 1 house/20 ac to 1 house/10 ac
- 1 house/10 ac to 1 house/5 ac
- 1 house/5 ac to 1 house/2 ac
- 1 house/2 ac to 3 houses/ac
- More than 3 houses/ac

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Wildland Urban Interface (WUI) Risk Index

Description

The Wildland-Urban Interface (WUI) Risk Index layer is a rating of the potential impact of a wildfire on people and their homes. The key input, WUI, reflects housing density (houses per acre) consistent with Federal Register National standards. The location of people living in the wildland-urban interface and rural areas is essential for defining potential wildfire impacts to people and homes.

The WUI Risk Index is derived using a response function modeling approach. Response functions are a method of assigning a net change in the value to a resource or asset based on susceptibility to fire at different intensity levels, such as flame length.

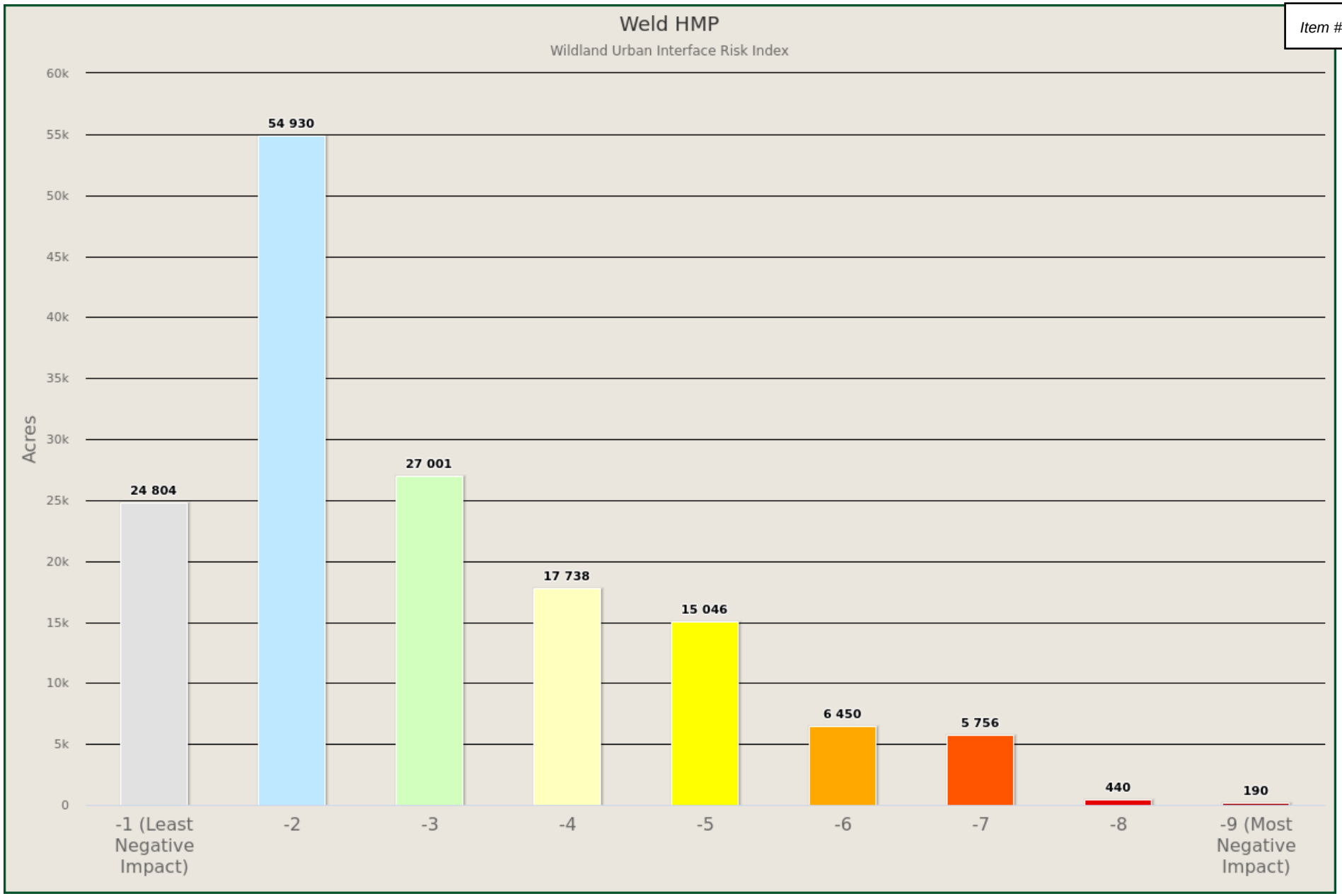
To calculate the WUI Risk Index, the WUI housing density data were combined with flame length data and response functions were defined to represent potential impacts. The response functions were defined by a team of experts led by Colorado State Forest

Service mitigation planning staff. By combining flame length with the WUI housing density data, it is possible to determine where the greatest potential impact to homes and people is likely to occur.

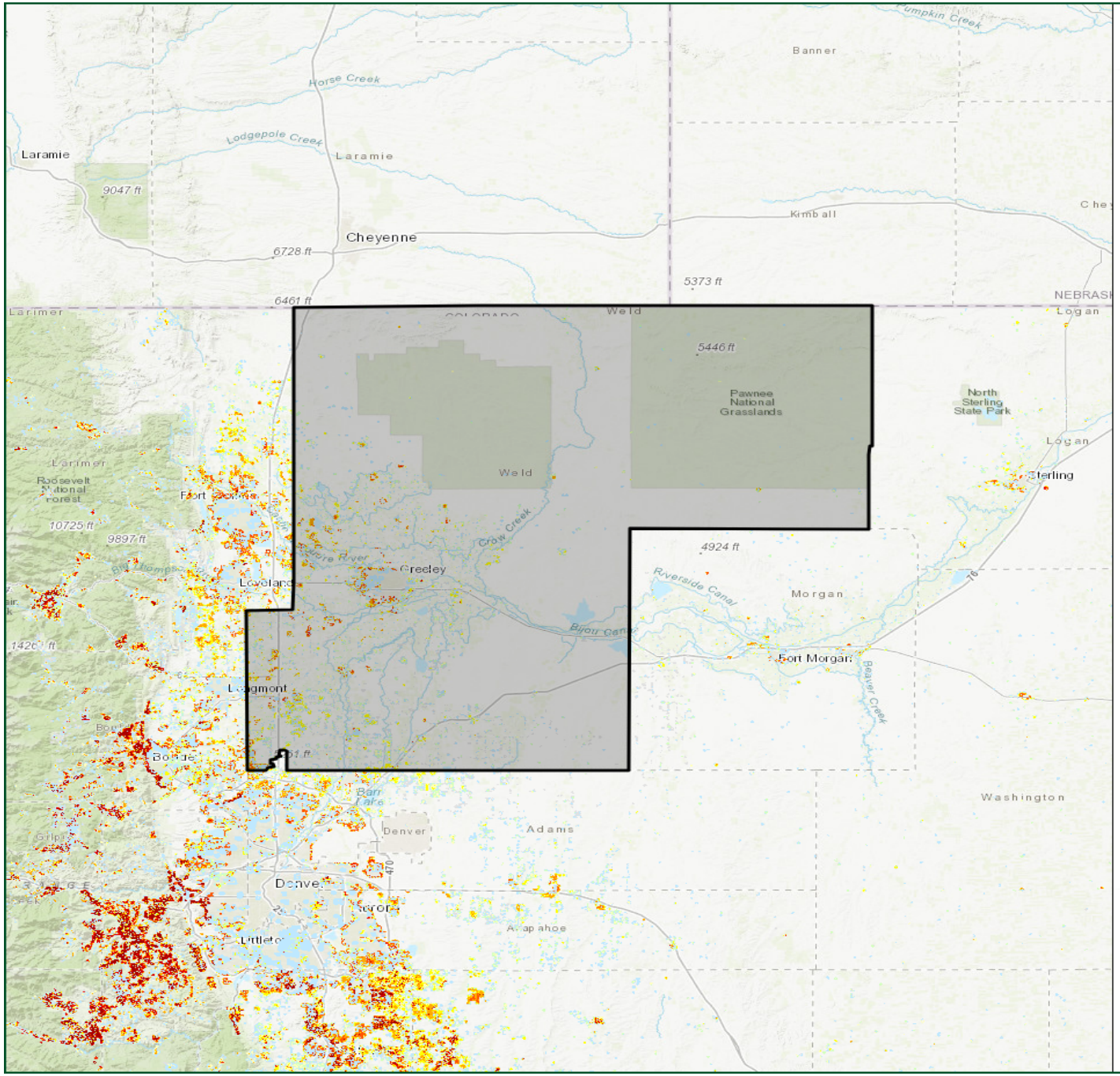
The range of values is from -1 to -9, with -1 representing the least negative impact and -9 representing the most negative impact. For example, areas with high housing density and high flame lengths are rated -9, while areas with low housing density and low flame lengths are rated -1.

The WUI Risk Index has been calculated consistently for all areas in Colorado, which allows for comparison and ordination of areas across the entire state. Data are modeled at a 30-meter cell resolution, which is consistent with other Colorado WRA layers.

WUI Risk Class	Acres	Percent
-1 (Least Negative Impact)	24,804	16.3 %
-2	54,930	36.1 %
-3	27,001	17.7 %
-4	17,738	11.6 %
-5	15,046	9.9 %
-6	6,450	4.2 %
-7	5,756	3.8 %
-8	440	0.3 %
-9 (Most Negative Impact)	190	0.1 %
Total	**152,356**	**100 %**


Weld HMP
Wildland Urban Interface Risk Index
Acres
60k
55k
50k
45k
40k
35k
30k
25k
20k
15k
10k
5k
0
24 804
54 930
27 001
17 738
15 046
6 450
5 756
440
190
-1 (Least Negative Impact)
-2
-3
-4
-5
-6
-7
-8
-9 (Most Negative Impact)

Weld HMP



Wildland Urban Interface Risk

- -1 (Least Negative Impact)
- -2
- -3
- -4
- -5
- -6
- -7
- -8
- -9 (Most Negative Impact)

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Firewise USA®

Description

Firewise USA® is a national recognition program that provides resources to inform communities how to adapt to living with wildfire and encourages neighbors to take action together to reduce their wildfire risk. Colorado communities that take the following five steps can be recognized as Firewise:

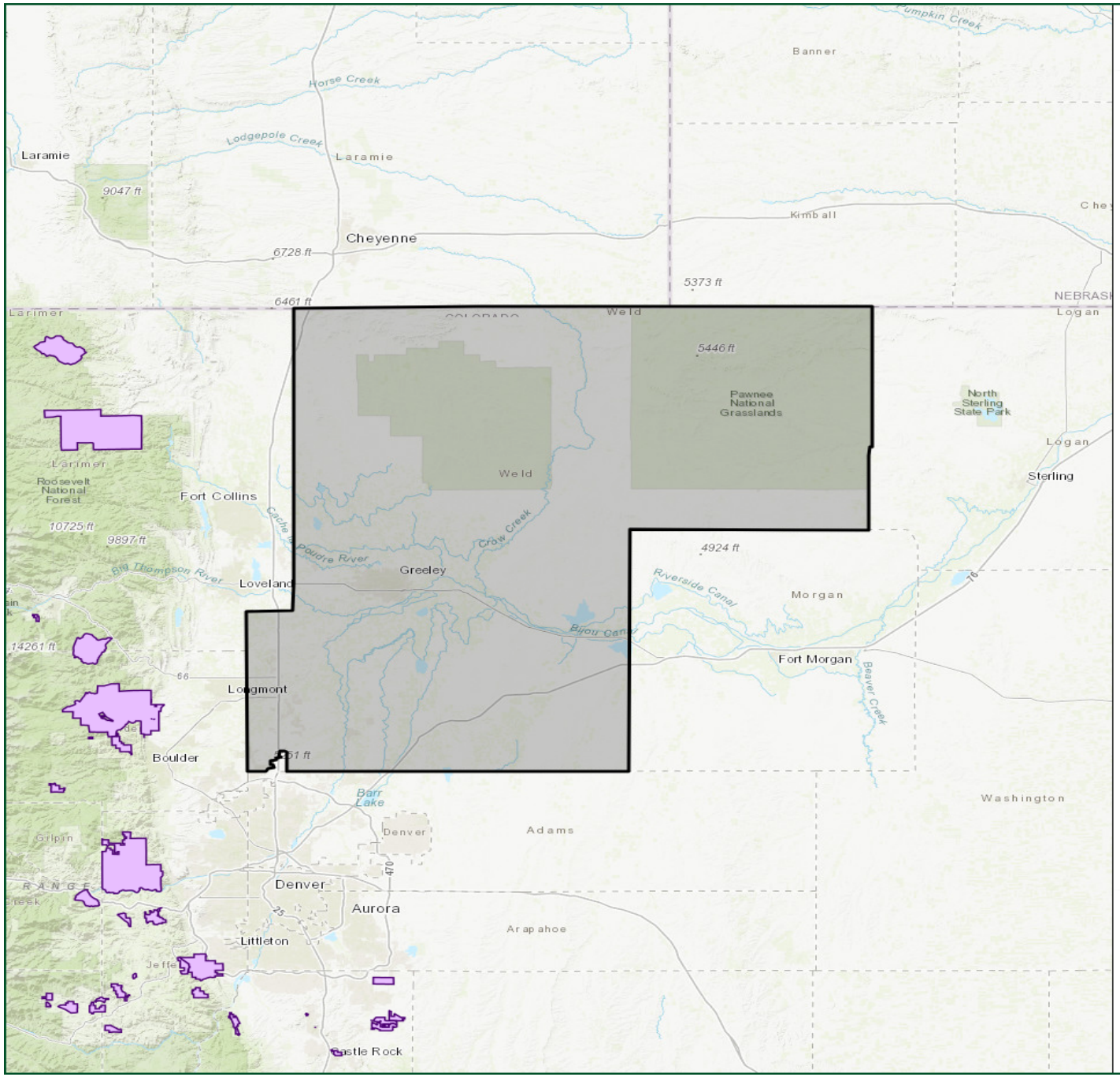
1. Form a Firewise board or committee
2. Obtain a wildfire risk assessment from the CSFS or local fire department, and create an action plan
3. Hold a Firewise event once per year
4. Invest a minimum of $24.14 per dwelling unit in local Firewise actions annually
5. Create a National Fire Prevention Association (NFPA) profile and follow the application directions located at https://portal.firewise.org/user/login

The Firewise USA® dataset defines the boundaries of the recognized communities. Mapping Firewise USA® boundaries will generally be completed by CSFS staff.

Note: These are estimated boundaries using a variety of methods with varying degrees of accuracy. These are not legal boundaries and should not be construed as such. The boundaries may overlap with CWPP areas and are subject to change over time as the communities develop, change, and continue to implement wildfire mitigation efforts.

To learn more about the Firewise USA® recognition program or to fill out an application, visit https://www.nfpa.org/Public-Education/By-topic/Wildfire/Firewise-USA - OR - https://csfs.colostate.edu/wildfire-mitigation/colorado-firewise-communities/

The designated area does not contain data for this section.



Weld HMP

Fire Wise Communities

Fire Wise Communities 2018

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Community Wildfire Protection Plans (CWPPs)

Description

A Community Wildfire Protection Plan (CWPP) is a document developed and agreed upon by a community to identify how the community will reduce its wildfire risk. CWPPs identify areas where fuels reduction is needed to reduce wildfire threats to communities and critical infrastructure, address protection of homes and other structures, and plan for wildfire response capability. The Colorado State Forest Service (CSFS) supports the development and implementation of CWPPs and provides resources, educational materials and information to those interested in developing CWPPs.

The CWPP dataset represents the boundaries of those areas that have developed a CWPP. Note that CWPPs can be developed by different groups at varying scales, such as county, Fire Protection District (FPD), community/subdivision, HOA, etc., and as such, can overlap. In addition, the CWPPs can be from different dates. Often a county CWPP is completed first with subsequently more detailed CWPPs done for local communities within that county or FPD. CO-WRAP provides a tool that allows the user to select the CWPP area and retrieve the CWPP document for review (PDF).

At a minimum, a CWPP should include:

- The wildland-urban interface (WUI) boundary, defined on a map, where people, structures and other community values are most likely to be negatively impacted by wildfire
- The CSFS, local fire authority and local government involvement and any additional stakeholders
- A narrative that identifies the community's values and fuel hazards
- The community's plan for when a wildfire occurs
- An implementation plan that identifies areas of high priority for fuels treatments

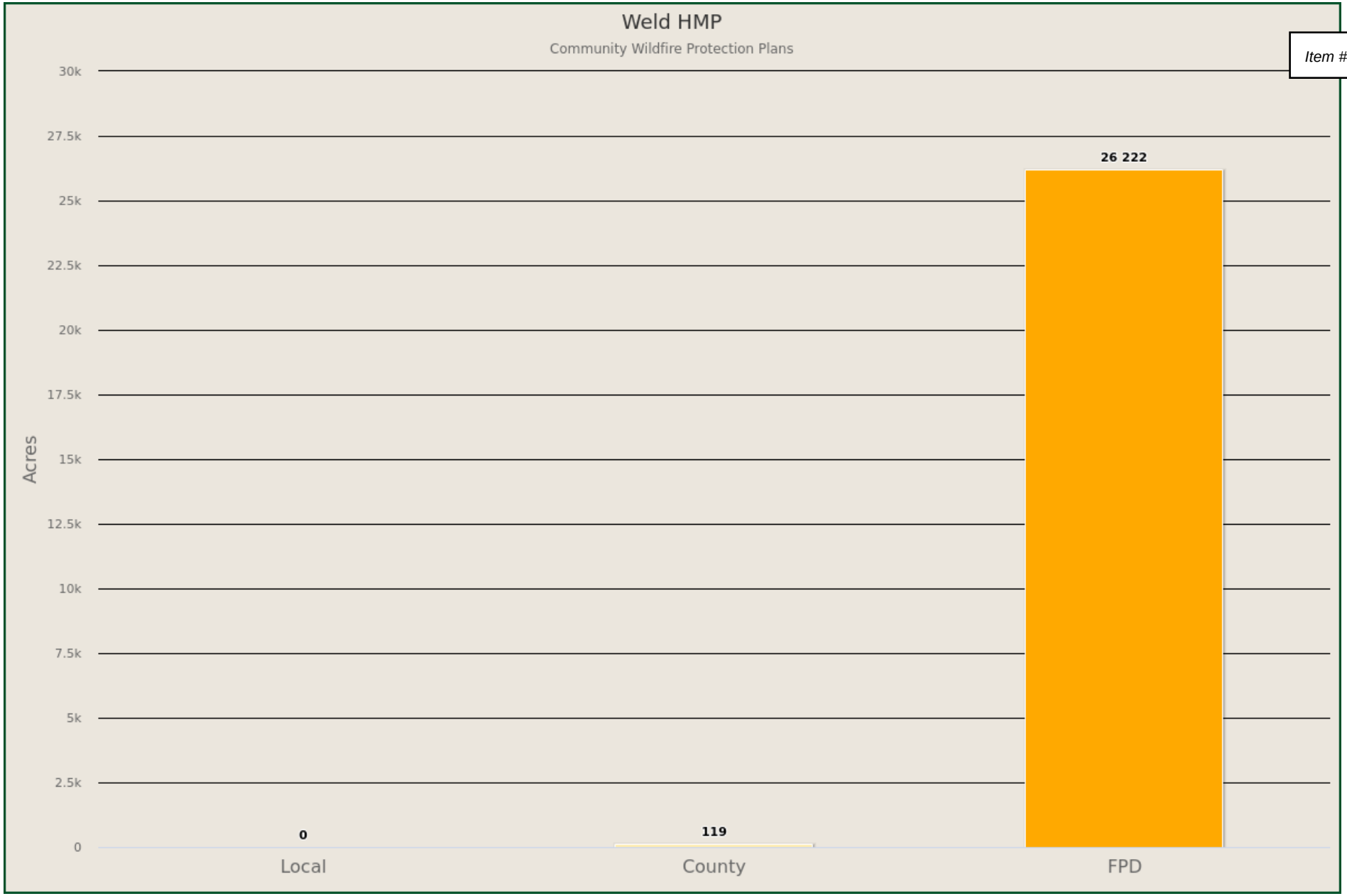
Community input is the foundation of a Community Wildfire Protection Plan that identfies community needs and garners community support.

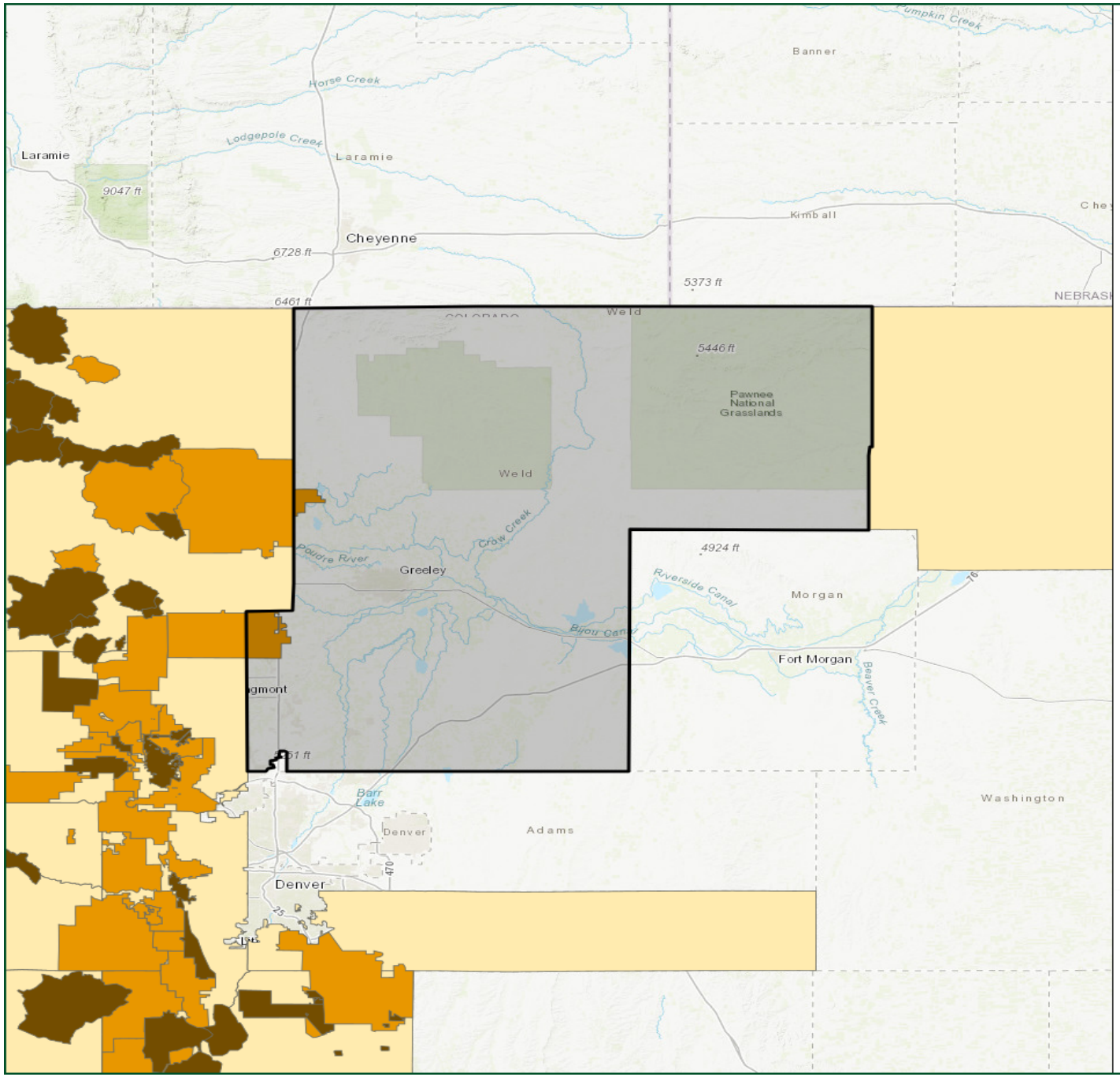
CWPPs are not shelf documents and should be reviewed, tracked and updated. A plan stays alive when it is periodically updated to address the accomplishments of the community. Community review of progress in meeting plan objectives and determining areas of new concern where actions must be taken to reduce wildfire risk helps the community stay current with changing environment and wildfire mitigation priorities.

If your community is in an area at risk from wildfire, now is a good time to start working with neighbors on a CWPP and preparing forfuture wildfires. Contact your local CSFS district to learn how to start this process and create a CWPP for your community: http://csfs.colostate.edu/pages/your-local-forester.html

For the Weld HMP test project area, there are 5 CWPPs areas that are totally or partially in the defined project area.

Community CWPP Name	CWPP Type	CSFS District	Acres inside project area	Total Acres
Larimer County	County	Fort Collins	51	1,684,188
Logan County	County	Fort Morgan	62	1,180,521
Boulder County CWPP	County	Boulder	6	473,517
Berthoud FPD	FPD	Fort Collins	20,540	63,105
Poudre Fire Authority	FPD	Fort Collins	5,682	150,739
Total Acres			**26,341**	**3,552,071**


Weld HMP
Community Wildfire Protection Plans
Acres
30k
27.5k
25k
22.5k
20k
17.5k
15k
12.5k
10k
7.5k
5k
2.5k
0
0
119
26 222
Local
County
FPD



Weld HMP

CWPP

- Community
- FPD
- County

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Wildfire Risk

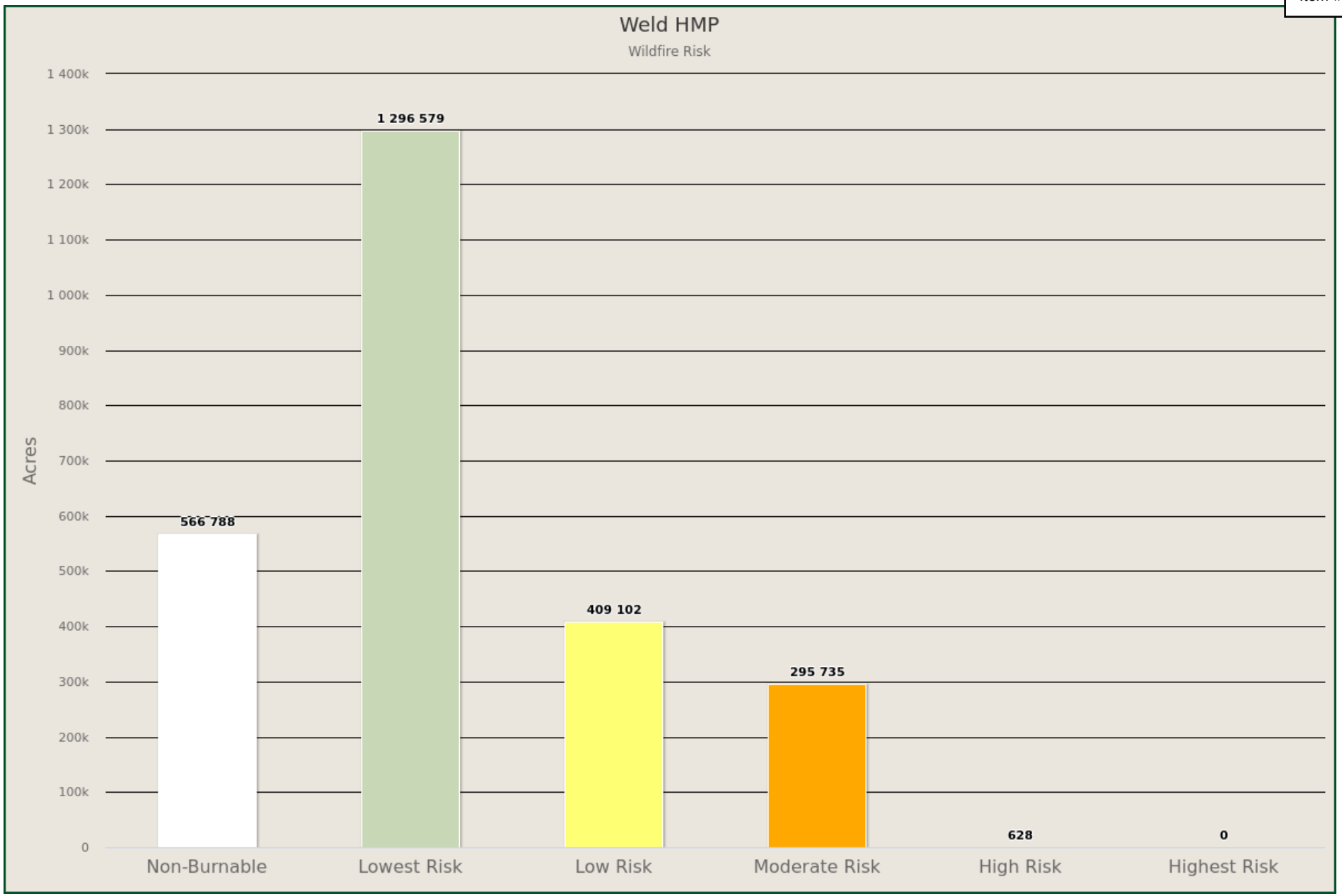
Description

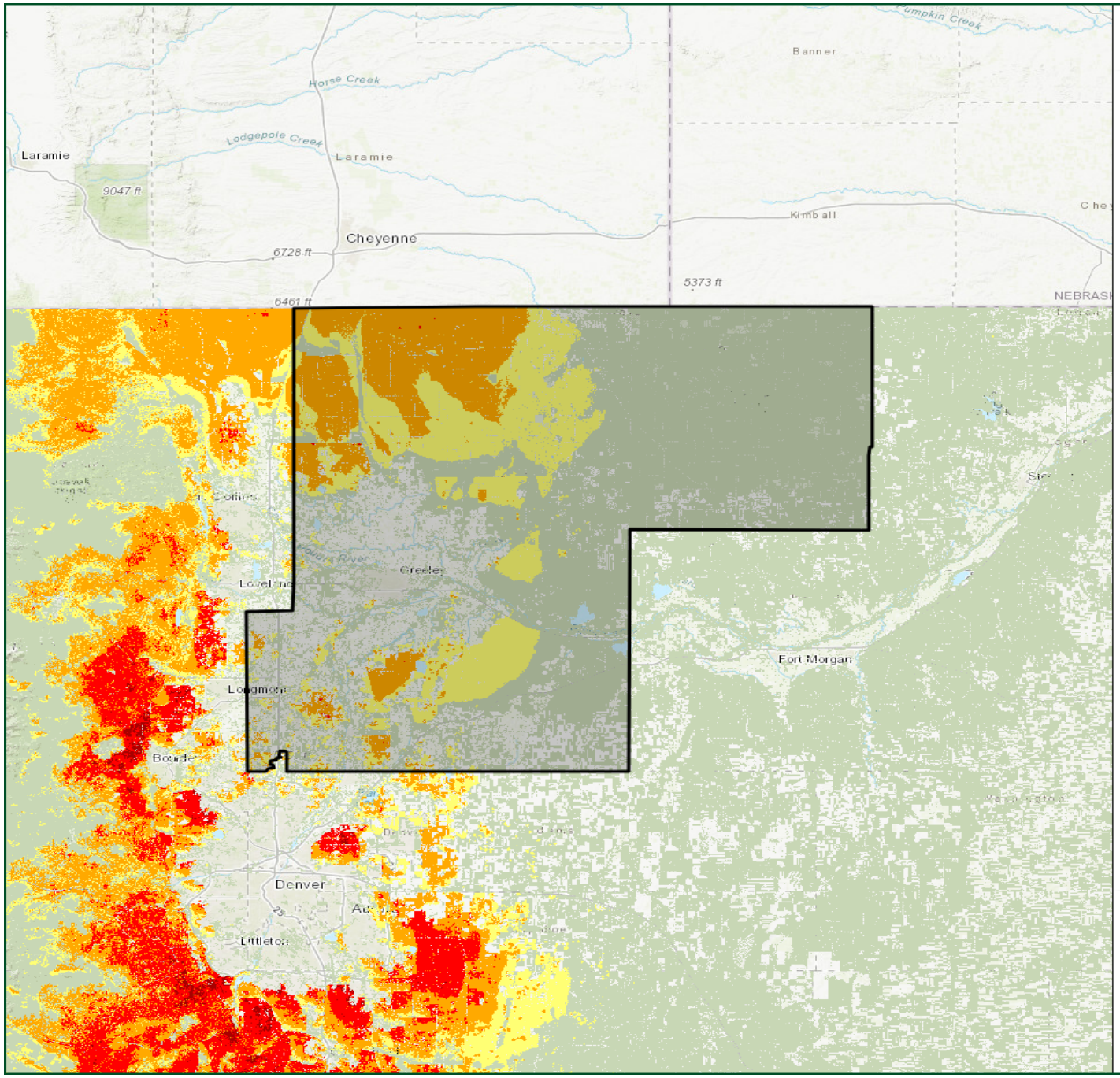
Wildfire Risk is a composite risk rating obtained by combining the probability of a fire occurring with the individual values at risk layers. Risk is defined as the possibility of loss or harm occurring from a wildfire. It identifies areas with the greatest potential impacts from a wildfire – i.e. those areas most at risk - considering all values and assets combined together – WUI Risk, Drinking Water Risk, Forest Assets Risk and Riparian Areas Risk.

Since all areas in Colorado have risk calculated consistently, it allows for comparison and ordination of areas across the entire state. The Values at Risk Rating is a key component of Wildfire Risk. The Values at Risk Rating is comprised of several inputs focusing on values and assets at risk. This includes Wildland Urban Interface, Forest Assets, Riparian Assets and Drinking Water Importance Areas (watersheds).

To aid in the use of Wildfire Risk for planning activities, the output values are categorized into five (5) classes. These are given general descriptions from Lowest to Highest Risk.

Wildfire Risk Class		Acres	Percent
	Non-Burnable	566,788	22.1 %
	Lowest Risk	1,296,579	50.5 %
	Low Risk	409,102	15.9 %
	Moderate Risk	295,735	11.5 %
	High Risk	628	0.0 %
	Highest Risk	0	0 %
Total		**2,568,832**	**100 %**


Weld HMP
Wildfire Risk
Acres
1 400k
1 300k
1 200k
1 100k
1 000k
900k
800k
700k
600k
500k
400k
300k
200k
100k
0
566 788
1 296 579
409 102
295 735
628
0
Non-Burnable
Lowest Risk
Low Risk
Moderate Risk
High Risk
Highest Risk



Weld HMP

Wildfire Risk

- Non-Burnable
- Lowest Risk
- Low Risk
- Moderate Risk
- High Risk
- Highest Risk

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Burn Probability

Description

Burn Probability (BP) is the annual probability of any location burning due to a wildfire. BP is calculated as the number of times that a 30-meter cell on the landscape is burned from millions of fire simulations. The annual BP was estimated by using a stochastic (Monte Carlo) wildfire simulation approach with Technosylva's Wildfire Analyst software (www.WildfireAnalyst.com).

A total number of 3,200,000 fires were simulated across the state, including those fires outside the Colorado border which were used in a buffer area around the state, to compute BP with a mean ignition density of 8.68 fires/km2. The simulation ignition points were spatially distributed evenly every 500 meters across the state. Only high and extreme weather conditions were used to run the simulations. All fires simulations had a duration of 10 hours.

The Wildfire Analyst fire simulator considered the number of times that the simulated fires burned each cell. After that, results were weighted by considering the historical fire occurrence of those fires that burned in high and extreme weather conditions. The weighting was done by assessing the relationship between the annual historical fire ignition density in Colorado and the total number of simulated fires with varying input data in the different weather scenarios and the historical spatial distribution of the ignition points.

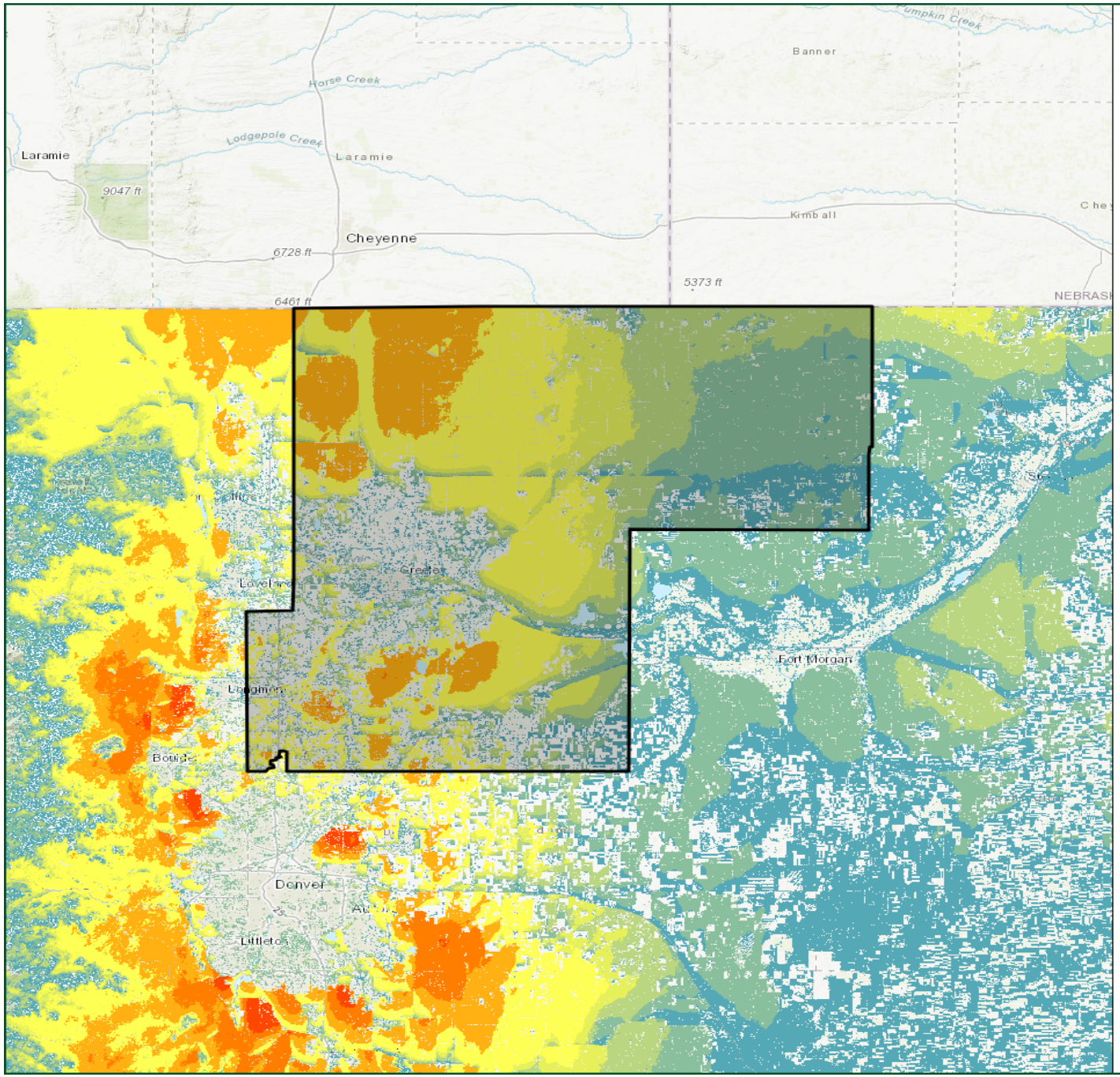
The probability map is derived at a 30-meter resolution. This scale of data was chosen to be consistent with the accuracy of the primary surface fuels dataset used in the assessment. While not appropriate for site specific analysis, it is appropriate for regional, county or local protection mitigation or prevention planning.

To aid in the use of Burn Probability for planning activities, the output values are categorized into 10 (ten) classes. These are given general descriptions from Lowest to Highest Probability.

A more detailed description of the risk assessment algorithms is provided in the Colorado WRA Final Report, which can be downloaded from www.ColoradoForestAtlas.org.

Burn Probability Class	Acres	Percent
Non-Burnable	1,949	0.1 %
Very Low	169,929	8.5 %
Very Low-Low	425,856	21.2 %
Low	337,235	16.8 %
Low-Moderate	233,392	11.6 %
Moderate	562,828	28.1 %
Moderate-High	273,235	13.6 %
High	859	0.0 %
High-Very High	0	0 %
Very High	0	0 %
Total	**2,005,283**	**100 %**

Weld HMP
Burn Probability
Acres
600k
550k
500k
450k
400k
350k
300k
250k
200k
150k
100k
50k
0
1 949
169 929
425 856
337 235
233 392
562 828
273 235
859
0
0
Non-Burnable
Very Low
Very Low-Low
Low
Low-Moderate
Moderate
Moderate-High
High
High-Very High
Very High



Weld HMP

Burn Probability

- Non-Burnable
- Very Low
- Very Low-Low
- Low
- Low-Moderate
- Moderate
- Moderate-High
- High
- High-Very High
- Very High

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Values at Risk Rating

Description

Represents those values or assets that would be adversely impacted by a wildfire. The Values at Risk Rating is an overall rating that combines the risk ratings for Wildland Urban Interface (WUI), Forest Assets, Riparian Assets, and Drinking Water Importance Areas into a single measure of values-at-risk. The individual ratings for each value layer were derived using a Response Function approach.

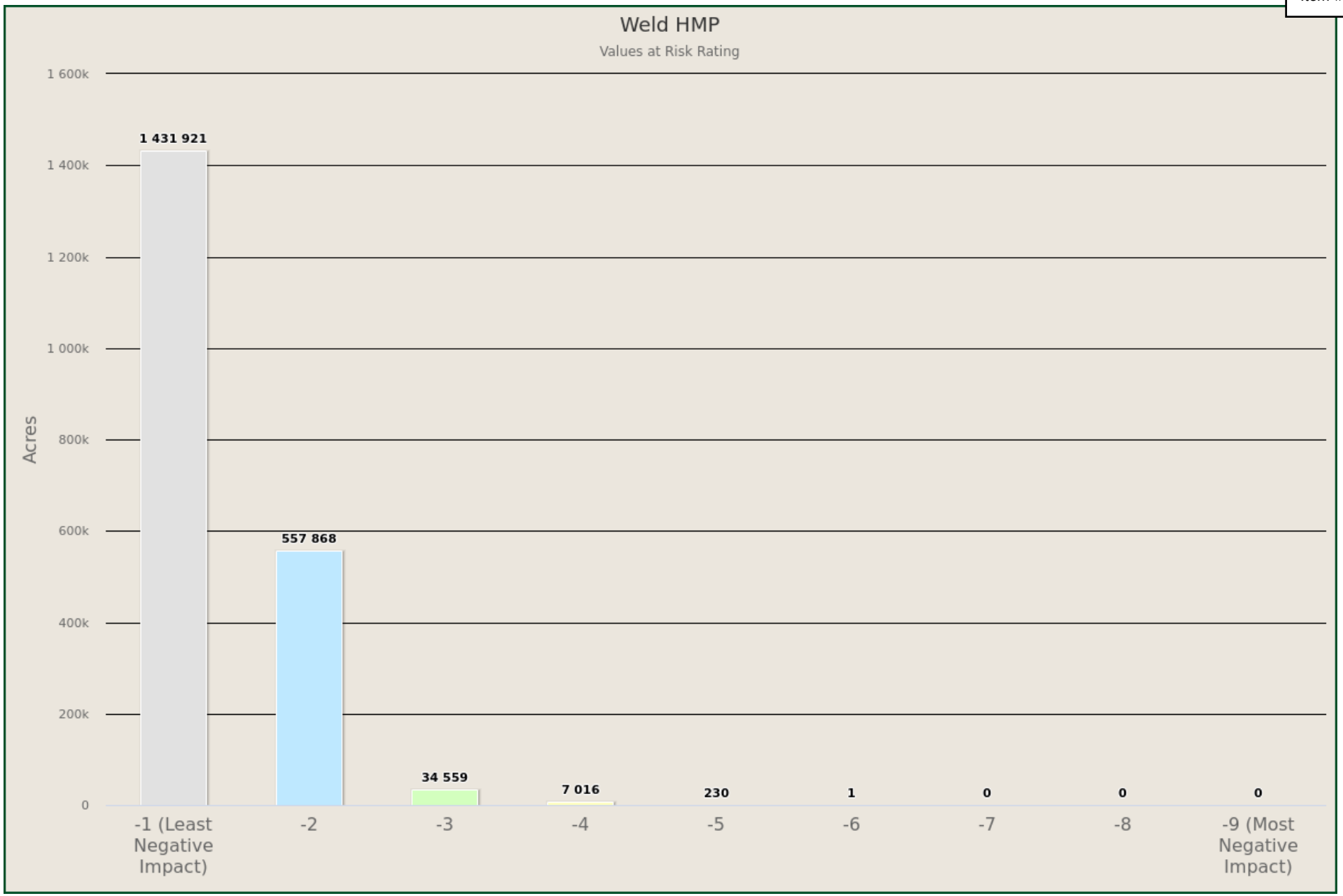
Response functions are a method of assigning a net change in the value to a resource or asset based on susceptibility to fire at different intensity levels. A resource or asset is any of the Fire Effects input layers, such as WUI, Forest Assets, etc. These net changes can be adverse (negative) or positive (beneficial).

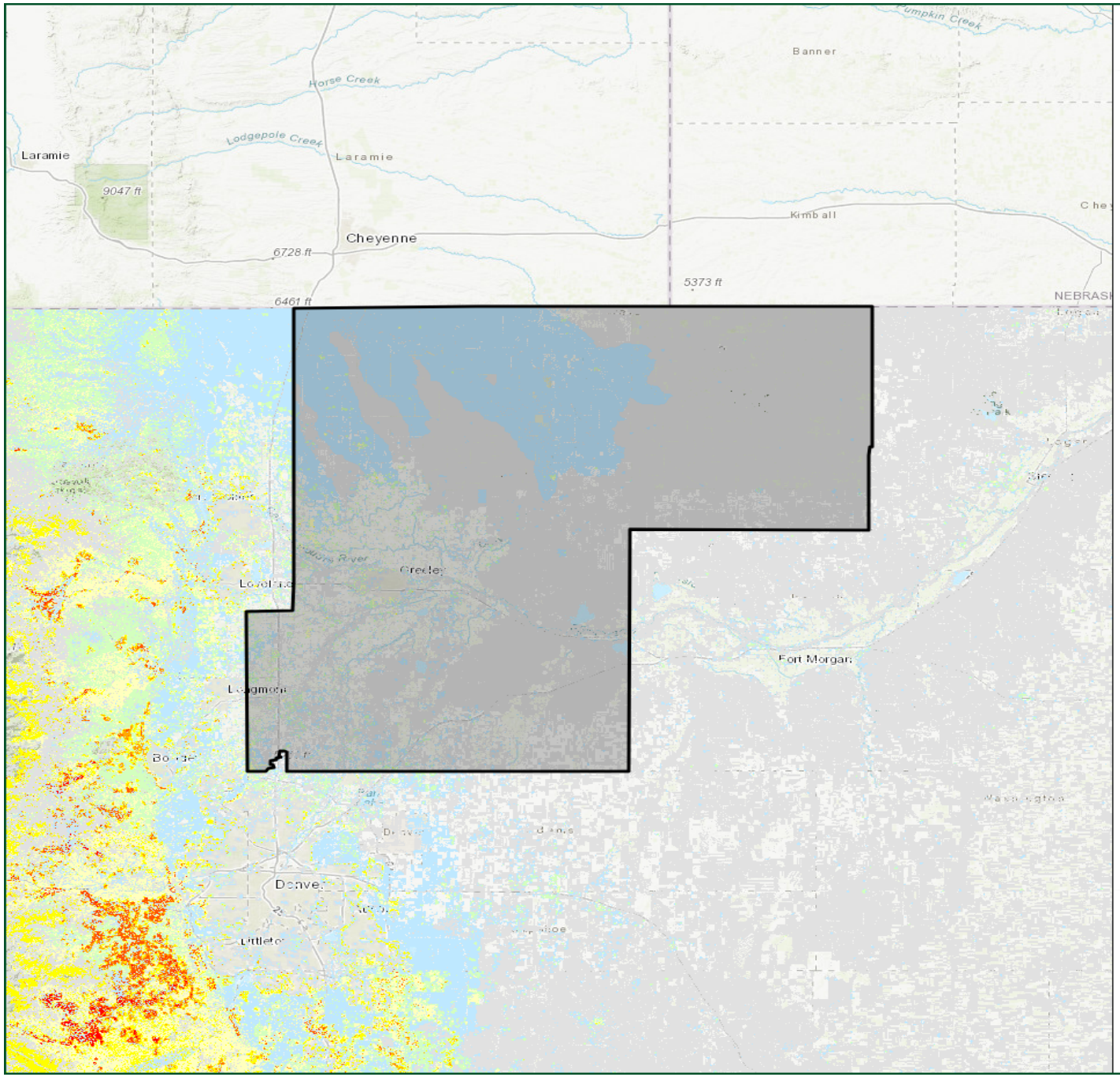
Calculating the Values at Risk Rating at a given location requires spatially defined estimates of the intensity of fire integrated with the identified resource value. This interaction is quantified through the use of response functions that estimate expected impacts to resources or assets at the specified fire intensity levels. The measure of fire intensity level used in the Colorado assessment is flame length for a location. Response Function outputs were derived for each input dataset and then combined to derive the Values Impacted Rating.

Different weightings are used for each of the input layers with the highest priority placed on protection of people and structures (i.e. WUI). The weightings represent the value associated with those assets. Weightings were developed by a team of experts during the assessment to reflect priorities for fire protection planning in Colorado. Refer to the Colorado WRA Final Report for more information about the layer weightings.

Since all areas in Colorado have the Values at Risk Rating calculated consistently, it allows for comparison and ordination of areas across the entire state. The data were derived at a 30-meter resolution.

Values at Risk Class	Acres	Percent
-1 (Least Negative Impact)	1,431,921	70.5 %
-2	557,868	27.5 %
-3	34,559	1.7 %
-4	7,016	0.3 %
-5	230	0.0 %
-6	1	0.0 %
-7	0	0 %
-8	0	0 %
-9 (Most Negative Impact)	0	0 %
Total	**2,031,596**	**100 %**


Weld HMP
Values at Risk Rating
Acres
1 600k
1 400k
1 200k
1 000k
800k
600k
400k
200k
0
1 431 921
557 868
34 559
7 016
230
1
0
0
0
-1 (Least Negative Impact)
-2
-3
-4
-5
-6
-7
-8
-9 (Most Negative Impact)



Weld HMP

Values at Risk Rating

- Non-Categorized
- -1 (Least Negative Impact)
- -2
- -3
- -4
- -5
- -6
- -7
- -8
- -9 (Most Negative Impact)

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Suppression Difficulty Rating

Description

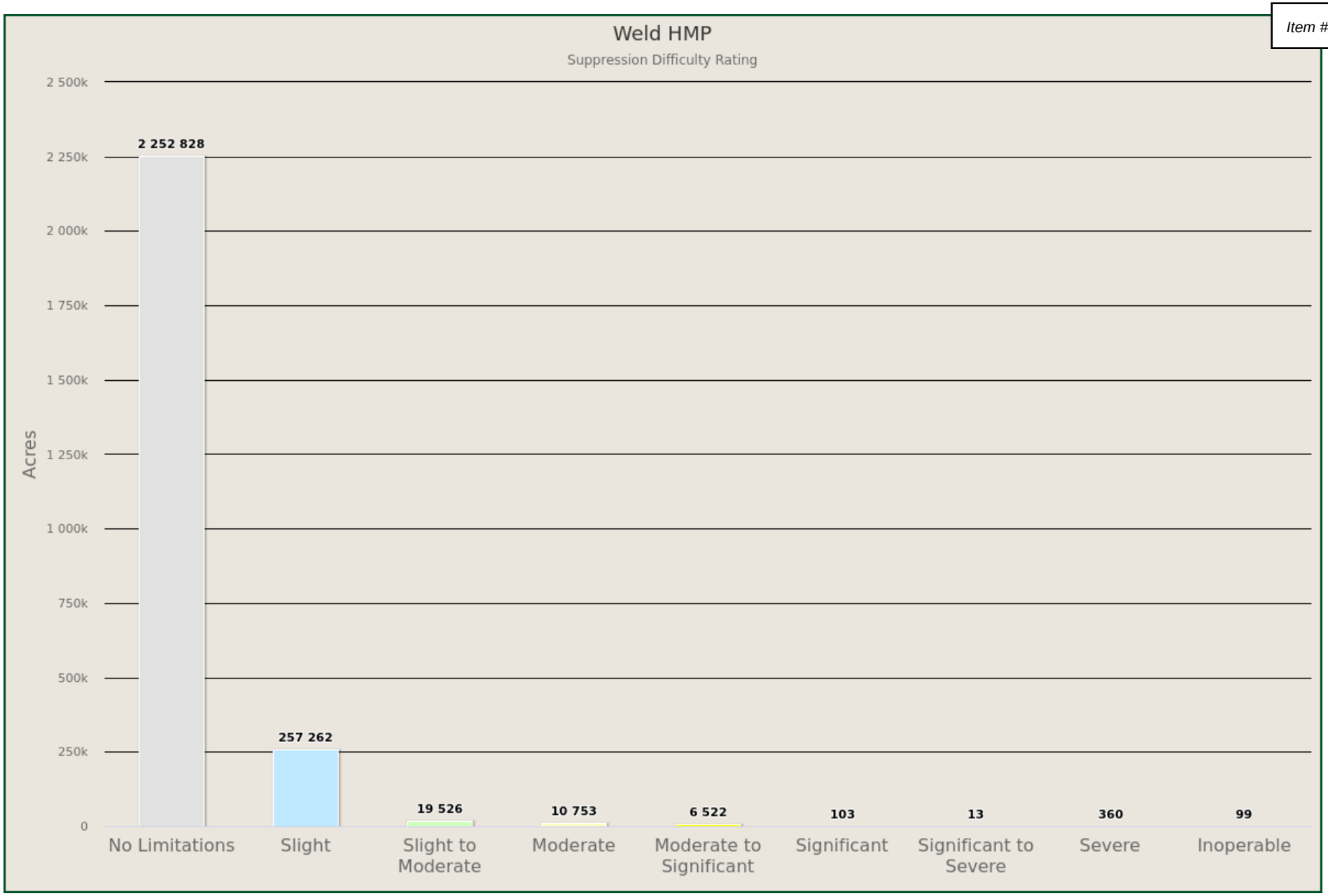
Reflects the difficulty or relative cost to suppress a fire given the terrain and vegetation conditions that may impact machine operability. This layer is an overall index that combines the slope steepness and the vegetation/fuel type characterization to identify areas where it would be difficult or costly to suppress a fire due to the underlying terrain and vegetation conditions that would impact machine operability (in particular Type II dozer).

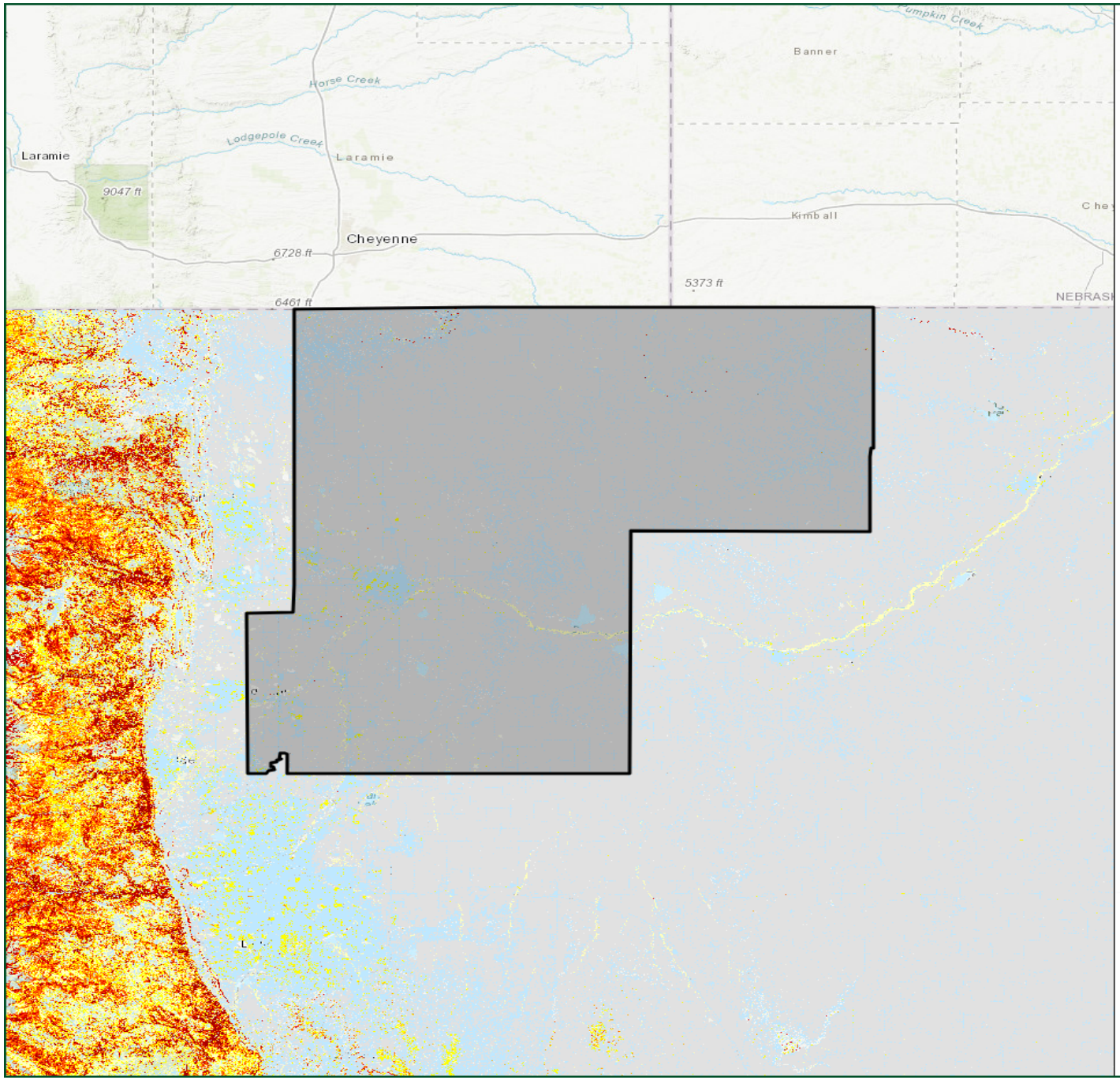
The rating was calculated based on the fireline production rates for hand crews and engines with modifications for slope, as documented in the NWCG Fireline Handbook 3, PMS 401-1.

The burnable fuel models in the Colorado WRA were grouped into ten categories: Grass, Grass/Shrub, Shrub/Regeneration, Moderate Forest, Heavy Forest, Swamp/Marsh, Agriculture, Barren, Urban/Developed, Water/Ice.

Fireline production capability on six slope classes was used as the basic reference to obtain the suppression difficulty score. The response function category is assigned to each combination of fuel model group and slope category.

SDR Class	Acres	Percent
No Limitations	2,252,828	88.4 %
Slight	257,262	10.1 %
Slight to Moderate	19,526	0.8 %
Moderate	10,753	0.4 %
Moderate to Significant	6,522	0.3 %
Significant	103	0.0 %
Significant to Severe	13	0.0 %
Severe	360	0.0 %
Inoperable	99	0.0 %
Total	**2,547,465**	**100 %**


Weld HMP
Suppression Difficulty Rating
Acres
2 500k
2 250k
2 000k
1 750k
1 500k
1 250k
1 000k
750k
500k
250k
0
2 252 828
257 262
19 526
10 753
6 522
103
13
360
99
No Limitations
Slight
Slight to Moderate
Moderate
Moderate to Significant
Significant
Significant to Severe
Severe
Inoperable



Weld HMP

Suppression Difficulty

- No Limitations
- Slight
- Slight to Moderate
- Moderate
- Moderate to Significant
- Significant
- Significant to Severe
- Severe
- Inoperable

20 mi

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Fire Occurrence

Description

Fire Occurrence is an ignition density that represents the likelihood of a wildfire starting based on historical ignition patterns. Occurrence is derived by modeling historic wildfire ignition locations to create an ignition density map.

Historic fire report data were used to create the ignition points for all Colorado fires. The compiled fire occurrence database was cleaned to remove duplicate records and to correct inaccurate locations. The database was then modeled to create a density map reflecting historical fire ignition rates.

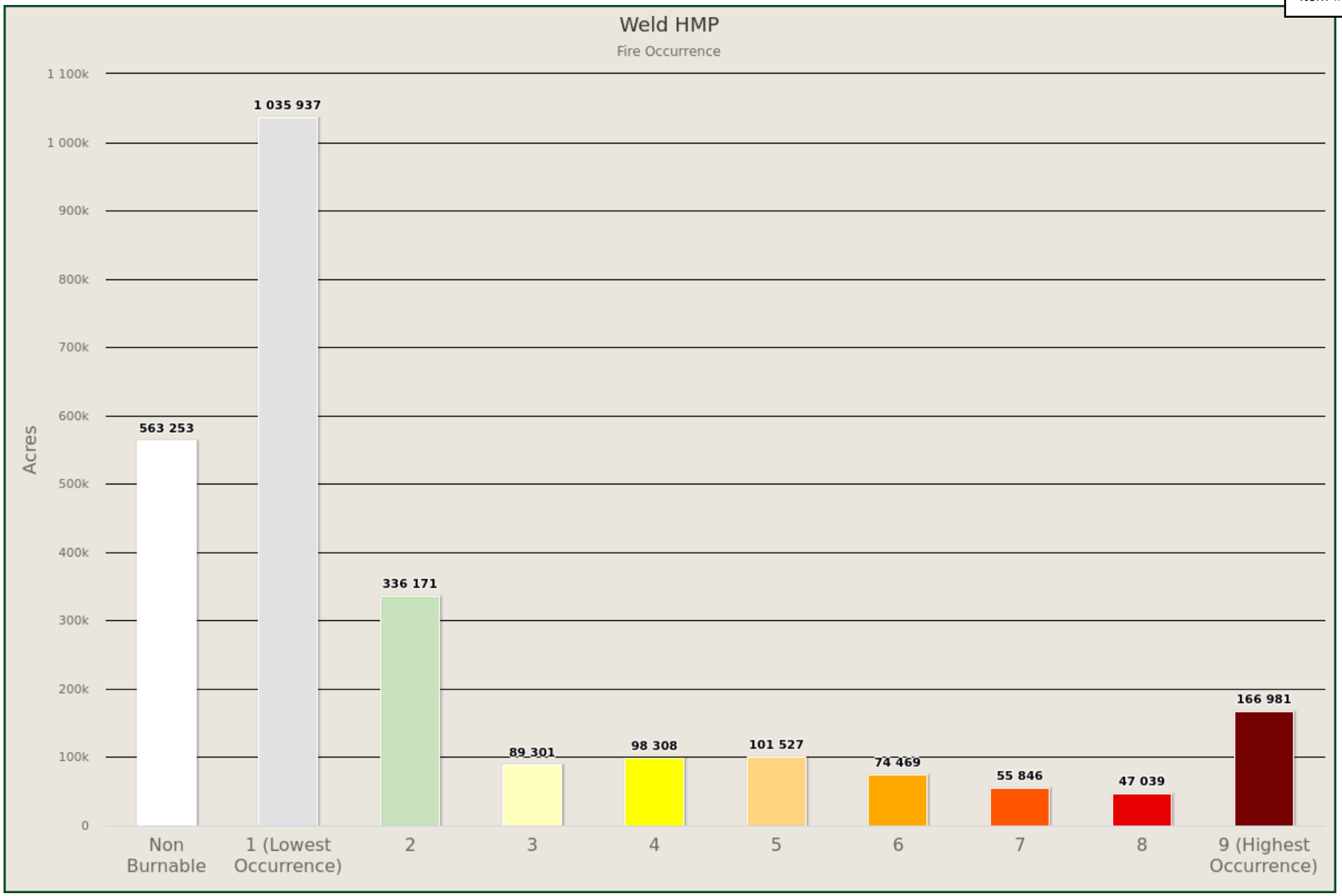
Historic fire report data were used to create the ignition points for all Colorado fires. This included both federal and non-federal fire ignition locations.

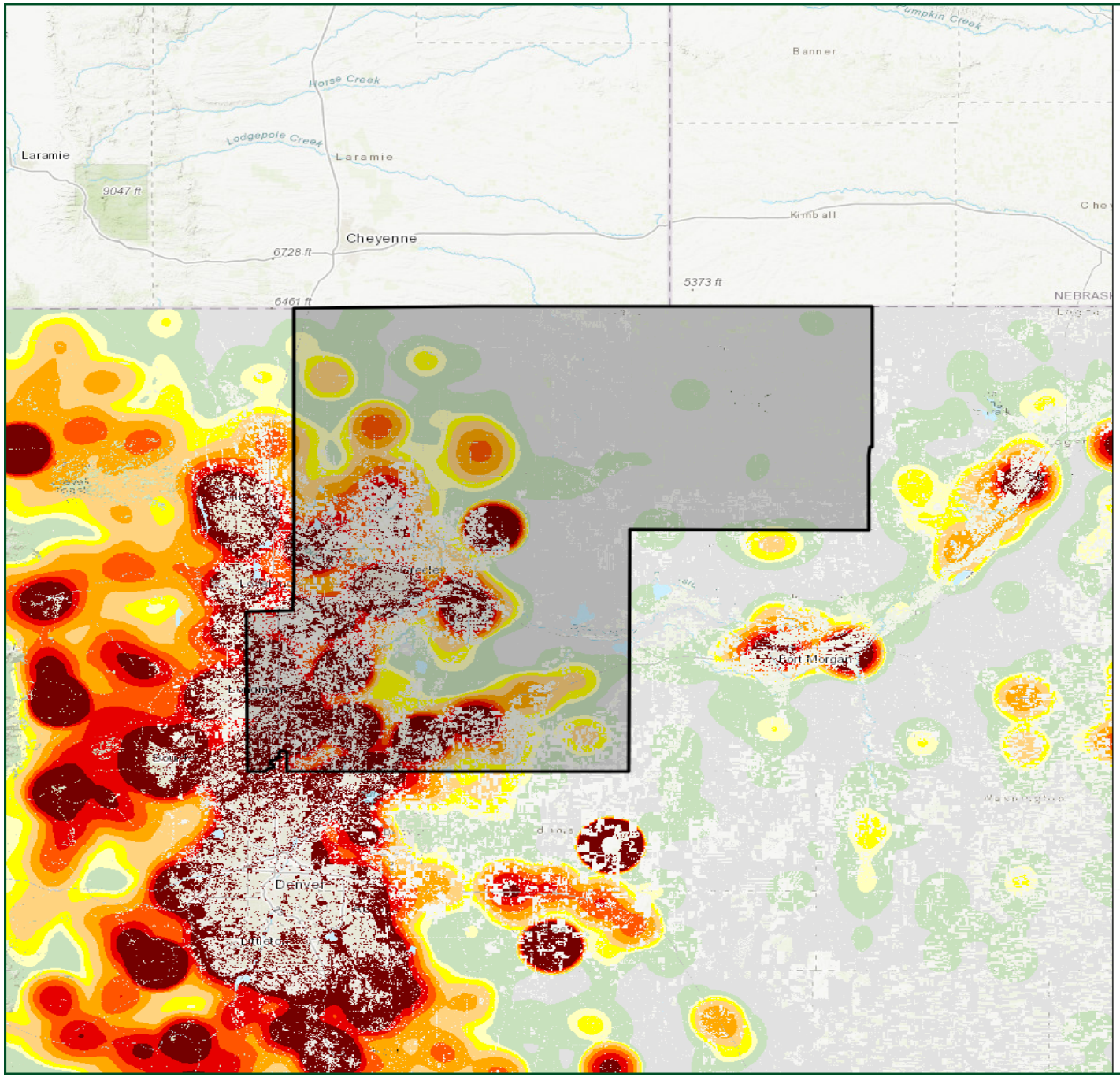
The class breaks are determined by analyzing the Fire Occurrence output values for the entire state and determining cumulative percent of acres (i.e. Class 9 has the top 1.5% of acres with the highest occurrence rate). Refer to the Colorado WRA Final Report for a more detailed description of the mapping classes and the methods used to derive these.

The Fire Occurrence map is derived at a 30-meter resolution. This scale of data was chosen to be consistent with the accuracy of the primary surface fuels dataset used in the assessment. While not sufficient for site specific analysis, it is appropriate for regional, county or local protection mitigation or prevention planning.

A more detailed description of the risk assessment algorithms is provided in the Colorado WRA Final Report, which can be downloaded from www.ColoradoForestAtlas.org.

Fire Occurrence Class	Acres	Percent
Non Burnable	563,253	21.9 %
1 (Lowest Occurrence)	1,035,937	40.3 %
2	336,171	13.1 %
3	89,301	3.5 %
4	98,308	3.8 %
5	101,527	4.0 %
6	74,469	2.9 %
7	55,846	2.2 %
8	47,039	1.8 %
9 (Highest Occurrence)	166,981	6.5 %
Total	**2,568,832**	**100 %**


Weld HMP
Fire Occurrence
Acres
1 100k
1 000k
900k
800k
700k
600k
500k
400k
300k
200k
100k
0
563 253
1 035 937
336 171
89 301
98 308
101 527
74 469
55 846
47 039
166 981
Non Burnable
1 (Lowest Occurrence)
2
3
4
5
6
7
8
9 (Highest Occurrence)



Weld HMP

Fire Occurrence

- Non Burnable
- 1 (Lowest Occurrence)
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9 (Highest Occurrence)

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Fire Behavior

Description

Fire behavior is the manner in which a fire reacts to the following environmental influences:

1. **Fuels**
2. **Weather**
3. **Topography**

Fire behavior characteristics are attributes of wildland fire that pertain to its spread, intensity, and growth. Fire behavior characteristics utilized in the Colorado WRA include fire type, rate of spread, flame length and fireline intensity (fire intensity scale). These metrics are used to determine the potential fire behavior under different weather scenarios. Areas that exhibit moderate to high fire behavior potential can be identified for mitigation treatments, especially if these areas are in close proximity to homes, business, or other assets.

Fuels

The Colorado WRA includes composition and characteristics for both surface fuels and canopy fuels. Assessing canopy fire potential and surface fire potential allows identification of areas where significant increases in fire behavior affects the potential of a fire to transition from a surface fire to a canopy fire.

Fuel datasets required to compute both surface and canopy fire potential include:

1. **Surface Fuels** are typically categorized into one of four primary fuel types based on the primary carrier of the surface fire: 1) grass, 2) shrub/brush, 3) timber litter, and 4) slash. They are generally referred to as fire behavior fuel models and provide the input parameters needed to compute surface fire behavior. The 2017 assessment uses the latest 2017 calibrated fuels for Colorado.
2. **Canopy Cover** is the horizontal percentage of the ground surface that is covered by tree crowns. It is used to compute wind-reduction factors and shading.
3. **Canopy Ceiling Height/Stand Height** is the height above the ground of the highest canopy layer where the density of the crown mass within the layer is high enough to support vertical movement of a fire. A good estimate of canopy ceiling height is the average height of the dominant and co-dominant trees in a stand. It is used to compute wind reduction to mid-flame height, and spotting distances from torching trees.
4. **Canopy Base** Height is the lowest height above the ground above which sufficient canopy fuel exists to vertically propagate fire (Scott & Reinhardt, 2001). Canopy base height is a property of a plot, stand or group of trees, not an individual tree. For fire modeling, canopy base height is an effective value that incorporates ladder fuels, such as tall shrubs and small trees. Canopy base height is used to determine whether a surface fire will transition to a canopy fire.

5. **Canopy Bulk Density** is the mass of available canopy fuel per unit canopy volume (Scott & Reinhardt, 2001). Canopy bulk density is a bulk property of a stand, plot or group of trees, not an individual tree. Canopy bulk density is used to predict whether an active crown fire is possible.

Weather

Environmental weather parameters needed to compute fire behavior characteristics include 1-hour, 10-hour and 100-hour time-lag fuel moistures, herbaceous fuel moisture, woody fuel moisture and the 20-foot, 10-minute average wind speed. To collect this information, Weather data (1988-2017) from NCEP (National Center for Environmental Prediction) was used to analyse potential weather scenarios in which assessing fire behavior and spread. In particular, the North American Regional Reanalysis (NARR) product from NCEP was selected because of it provides high resolution weather data for all of Colorado. The following percentiles (97th, 90th, 50th and 25th) were analysed for each variable in each 30km NARR point to create four weather scenarios to run the fire behavior analysis: “Extreme”, “High”, “Moderate” and “Low”. After computing the weather percentiles of the NARR variables, an IDW algorithm was used to derive 30m resolution data to match the surface fuels dataset.

The four percentile weather categories are intended to represent low, moderate, high and extreme fire weather days. Fire behavior outputs are computed for each percentile weather category to determine fire potential under different weather scenarios.

For a detailed description of the methodology, refer to the 2017 Colorado Wildfire Risk Assessment Final Report at www.ColoradoForestAtlas.org.

Topography

Topography datasets required to compute fire behavior characteristics are elevation, slope and aspect.

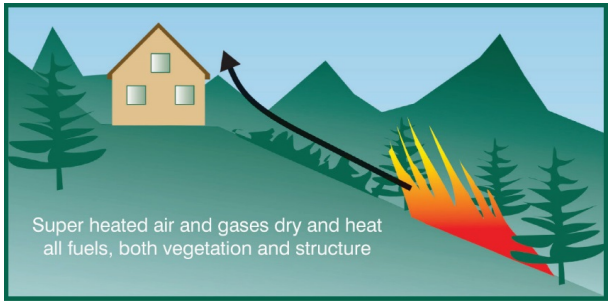
FIRE BEHAVIOR CHARACTERISTICS

Fire behavior characteristics provided in this report include:

- **Characteristic Rate of Spread**
- **Characteristic Flame Length**
- **Fire Intensity Scale**
- **Fire Type – Extreme Weather**

Characteristic Rate of Spread

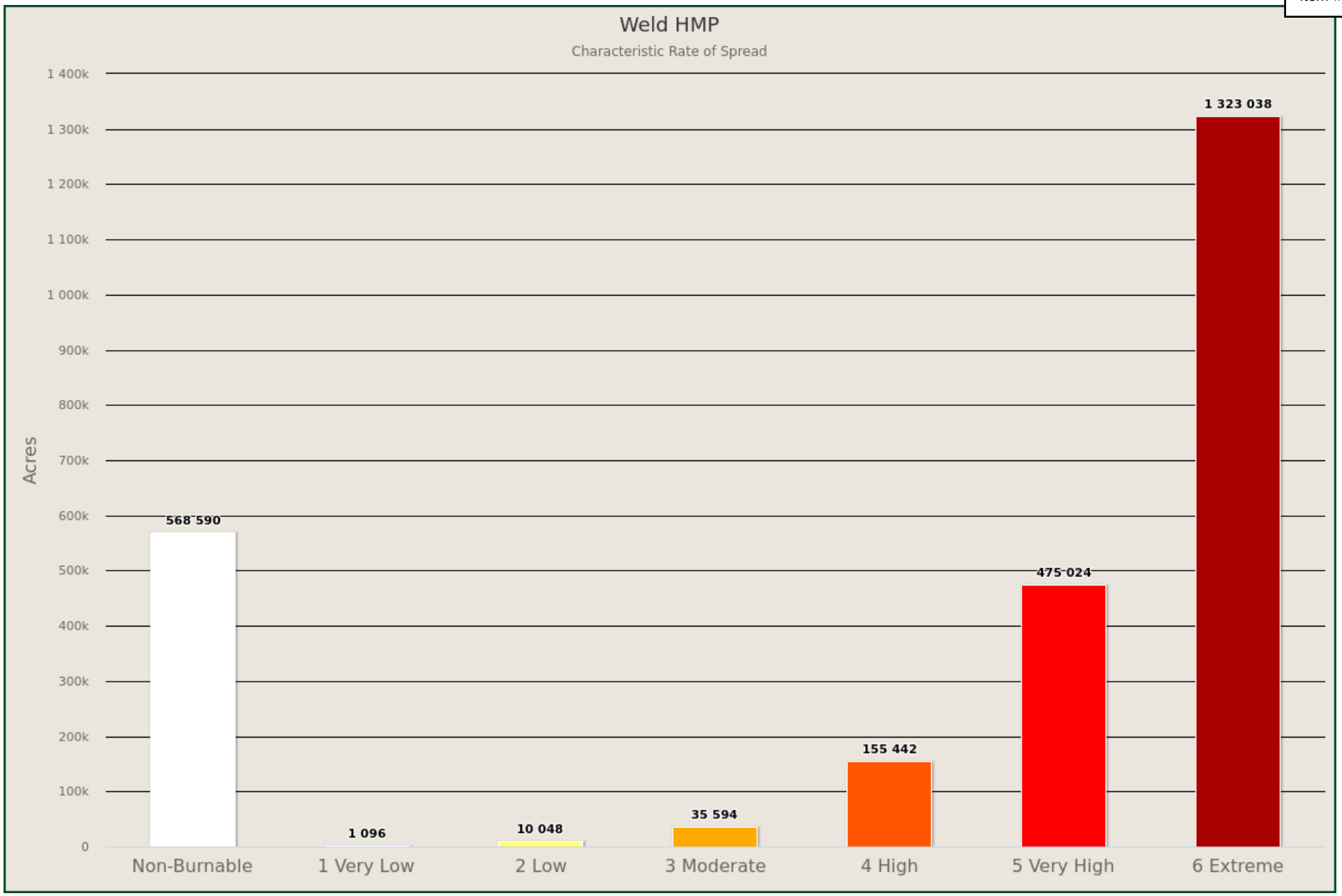
Characteristic Rate of Spread is the typical or representative rate of spread of a potential fire based on a weighted average of four percentile weather categories. Rate of spread is the speed with which a fire moves in a horizontal direction across the landscape, usually expressed in chains per hour (ch/hr) or feet per minute (ft/min). For purposes of the Colorado WRA, this measurement represents the maximum rate of spread of the fire front. Rate of Spread is used in the calculation of Wildfire Threat in the Colorado WRA.

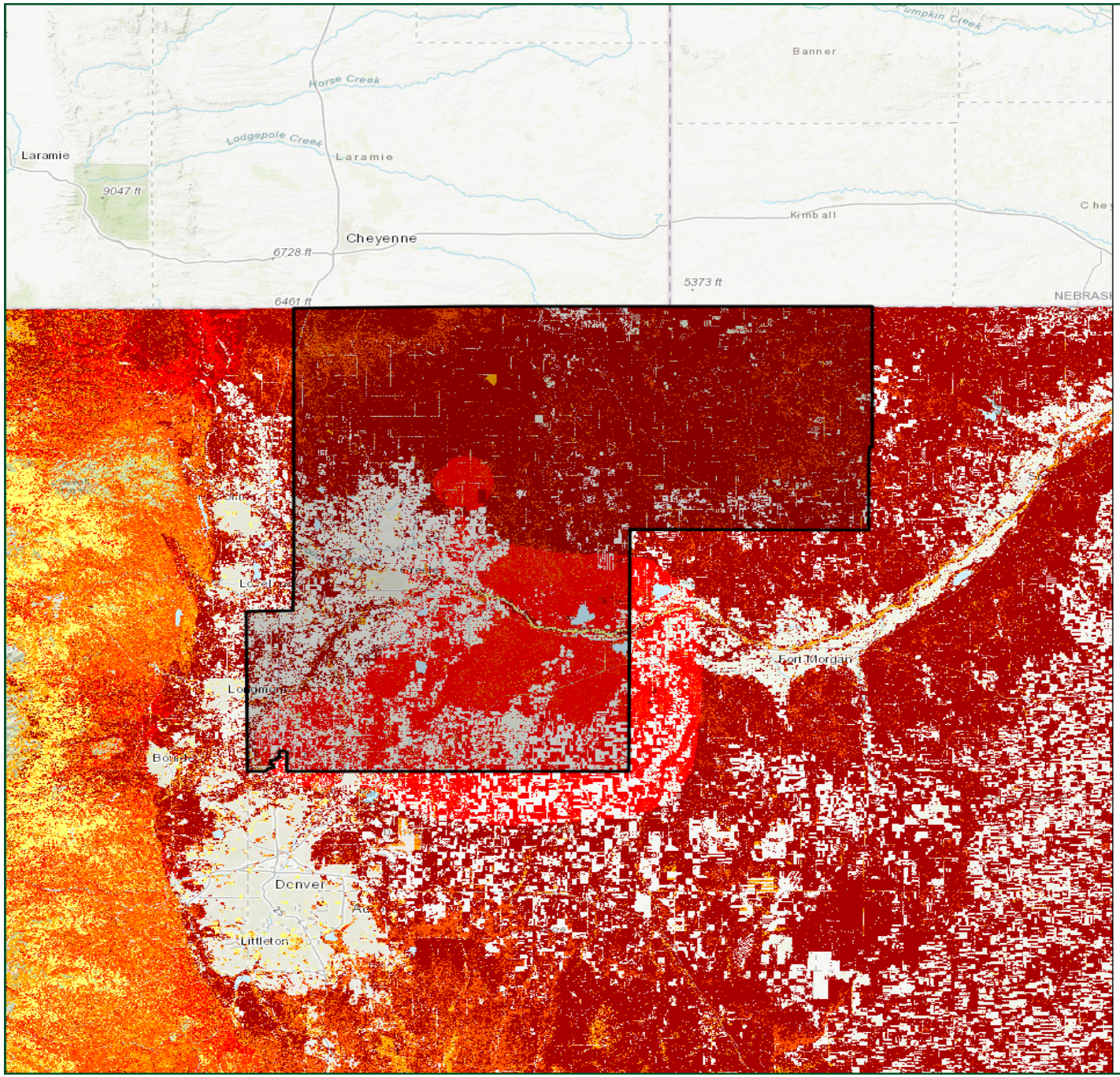


Rate of spread is a fire behavior output, which is influenced by three environmental factors - fuels, weather, and topography. Weather is by far the most dynamic variable as it changes frequently. To account for this variability, four percentile weather categories were created from historical weather observations to represent low, moderate, high, and extreme weather days for each 30-meter cell in Colorado. Thirty (30) meter resolution is the baseline for the Colorado WRA, matching the source surface fuels dataset.

The “characteristic” output represents the weighted average for all four weather percentiles. While not shown in this report, the individual percentile weather ROS outputs are available in the Colorado WRA data.

Rate of Spread	Acres	Percent
Non-Burnable	568,590	22.1 %
1 Very Low	1,096	0.0 %
2 Low	10,048	0.4 %
3 Moderate	35,594	1.4 %
4 High	155,442	6.1 %
5 Very High	475,024	18.5 %
6 Extreme	1,323,038	51.5 %
Total	**2,568,832**	**100 %**


Weld HMP
Characteristic Rate of Spread
Acres
1 400k
1 300k
1 200k
1 100k
1 000k
900k
800k
700k
600k
500k
400k
300k
200k
100k
0
568 590
1 096
10 048
35 594
155 442
475 024
1 323 038
Non-Burnable
1 Very Low
2 Low
3 Moderate
4 High
5 Very High
6 Extreme



Weld HMP

Characteristic Rate of Spread

- 1 Very Low
- 2 Low
- 3 Moderate
- 4 High
- 5 Very High
- 6 Extreme

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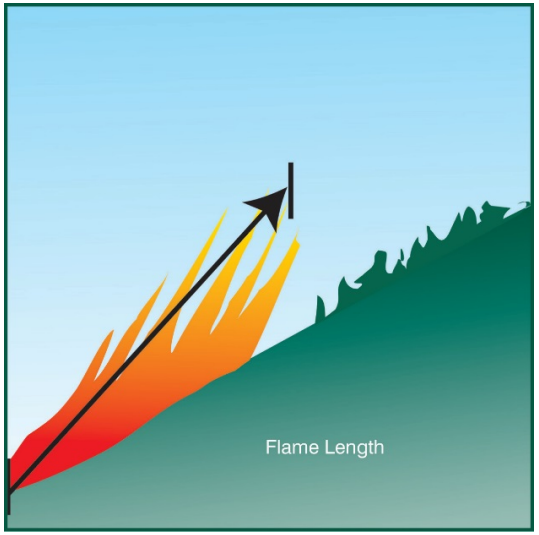
Characteristic Flame Length

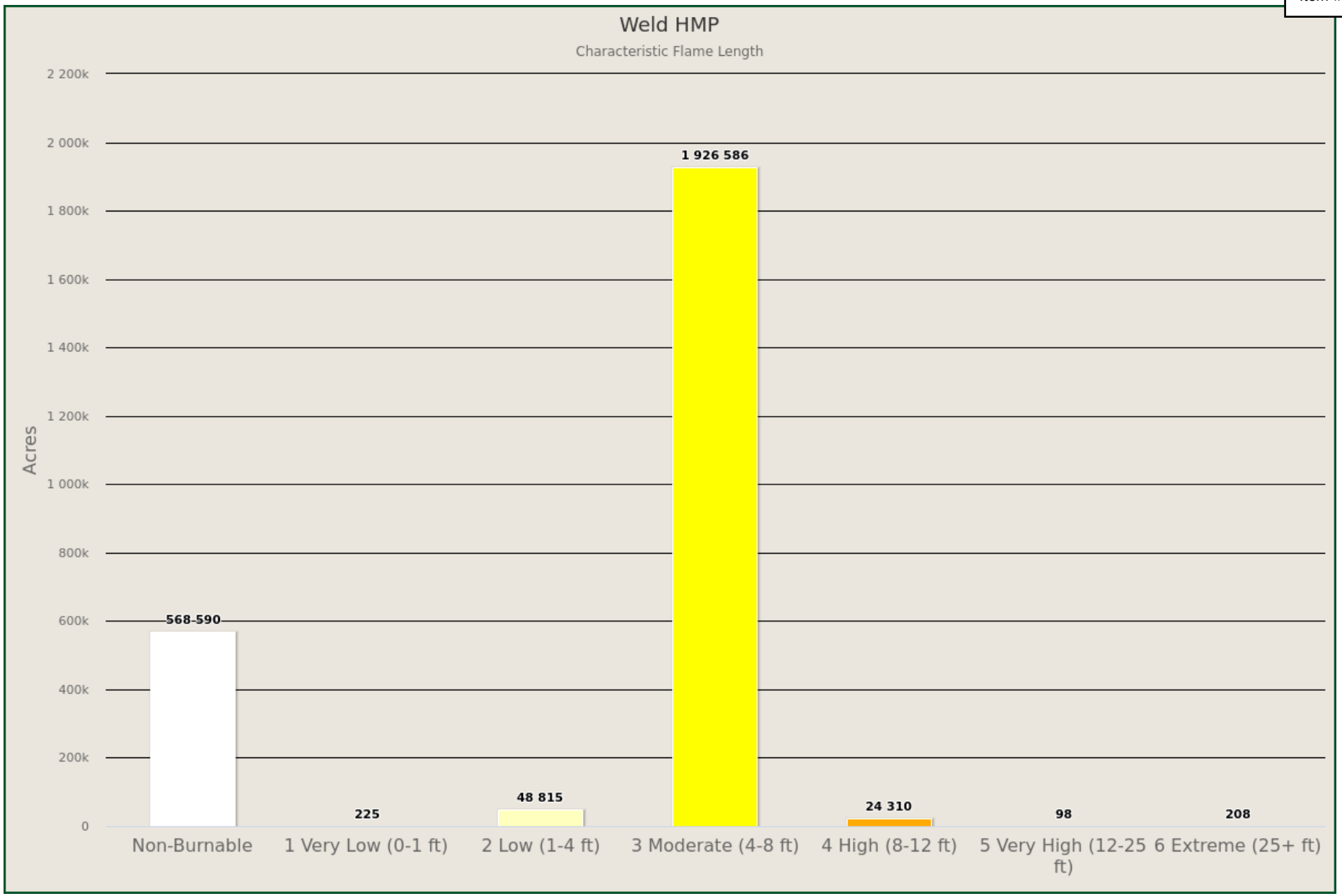
Characteristic Flame Length is the typical or representative flame length of a potential fire based on a weighted average of four percentile weather categories. Flame Length is defined as the distance between the flame tip and the midpoint of the flame depth at the base of the flame, which is generally the ground surface. It is an indicator of fire intensity and is often used to estimate how much heat the fire is generating. Flame length is typically measured in feet (ft). Flame length is the measure of fire intensity used to generate the Fire Effects outputs for the Colorado WRA.

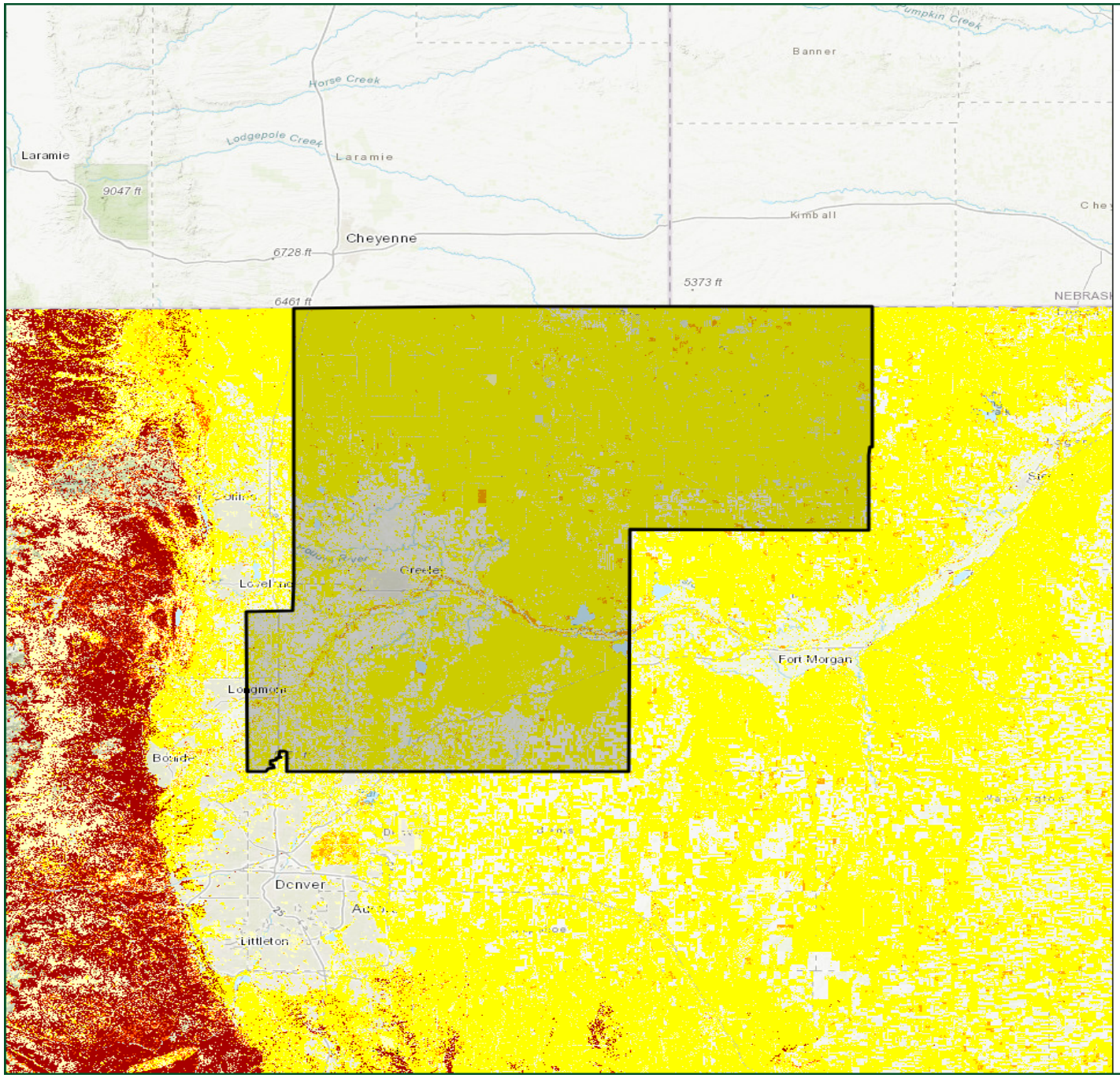


Flame length is a fire behavior output, which is influenced by three environmental factors - fuels, weather, and topography. Weather is by far the most dynamic variable as it changes frequently. To account for this variability, four percentile weather categories were created from historical weather observations to represent low, moderate, high, and extreme weather days for each 30-meter cell in Colorado.

This output represents the weighted average for all four weather percentiles. While not shown in this report, the individual percentile weather Flame Length outputs are available in the Colorado WRA data.

Flame Length	Acres	Percent
Non-Burnable	568,590	22.1 %
1 Very Low (0-1 ft)	225	0.0 %
2 Low (1-4 ft)	48,815	1.9 %
3 Moderate (4-8 ft)	1,926,586	75.0 %
4 High (8-12 ft)	24,310	0.9 %
5 Very High (12-25 ft)	98	0.0 %
6 Extreme (25+ ft)	208	0.0 %
Total	**2,568,832**	**100 %**


Weld HMP
Characteristic Flame Length
Acres
2 200k
2 000k
1 800k
1 600k
1 400k
1 200k
1 000k
800k
600k
400k
200k
0
568 590
225
48 815
1 926 586
24 310
98
208
Non-Burnable
1 Very Low (0-1 ft)
2 Low (1-4 ft)
3 Moderate (4-8 ft)
4 High (8-12 ft)
5 Very High (12-25 ft)
6 Extreme (25+ ft)



Weld HMP

Characteristic Flame Length

- Non-Burnable
- 1 Very Low (0-1 ft)
- 2 Low (1-4 ft)
- 3 Moderate (4-8 ft)
- 4 High (8-12 ft)
- 5 Very High (12-25 ft)

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Fire Intensity Scale

Description

Fire Intensity Scale (FIS) specifically identifies areas where significant fuel hazards and associated dangerous fire behavior potential exist. Similar to the Richter scale for earthquakes, FIS provides a standard scale to measure potential wildfire intensity. FIS consist of five (5) classes where the order of magnitude between classes is ten-fold. The minimum class, Class 1, represents very low wildfire intensities and the maximum class, Class 5, represents very high wildfire intensities.

1. **Class 1, Lowest Intensity:**

   Very small, discontinuous flames, usually less than 1 foot in length; very low rate of spread; no spotting. Fires are typically easy to suppress by firefighters with basic training and non-specialized equipment.

2. **Class2, Low:**

   Small flames, usually less than two feet long; small amount of very short-range spotting possible. Fires are easy to suppress by trained firefighters with protective equipment and specialized tools.

3. **Class 3, Moderate:**

   Flames up to 8 feet in length; short-range spotting is possible. Trained firefighters will find these fires difficult to suppress without support from aircraft or engines, but dozer and plows are generally effective. Increasing potential for harm or damage to life and property.

4. **Class 4, High:**

   Large Flames, up to 30 feet in length; short-range spotting 1. common; medium range spotting possible. Direct attack by trained firefighters, engines, and dozers is generally ineffective, indirect attack may be effective. Significant potential for harm or damage to life and property.

5. **Class 5, Highest Intensity:**

   Very large flames up to 150 feet in length; profuse short-range spotting, frequent long-range spotting; strong fire-induced winds. Indirect attack marginally effective at the head of the fire. Great potential for harm or damage to life and property.

Burn Probability and Fire Intensity Scale are designed to complement each other. The Fire Intensity Scale does not incorporate historical occurrence information. It only evaluates the potential fire behavior for an area, regardless if any fires have occurred there in the past. This additional information allows mitigation planners to quickly identify areas where dangerous fire behavior potential exists in relationship to nearby homes or other valued assets.

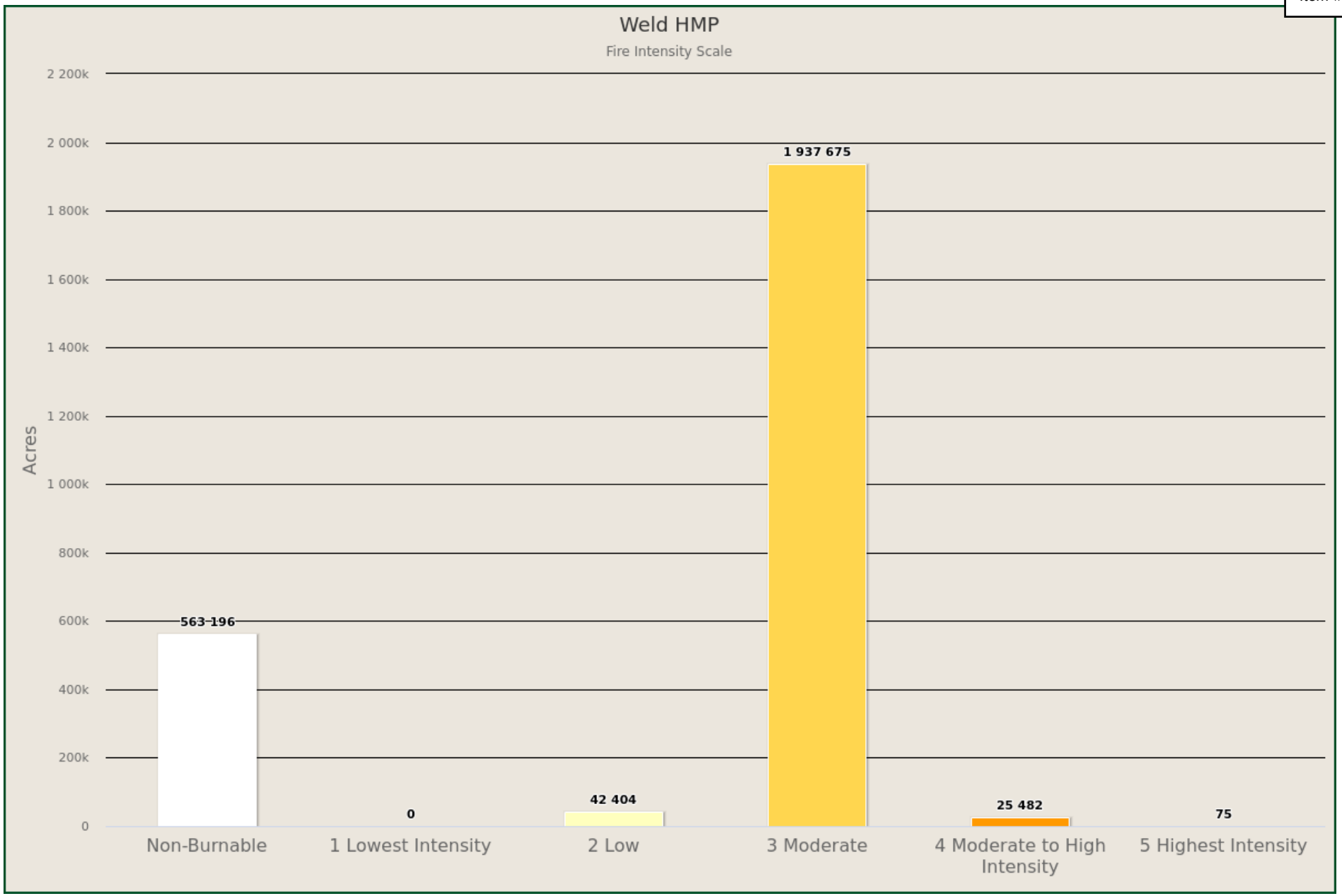
Since all areas in Colorado have fire intensity scale calculated consistently, it allows for comparison and ordination of areas across the entire state. For example, a high fire intensity area in Eastern Colorado is equivalent to a high fire intensity area in Western Colorado.

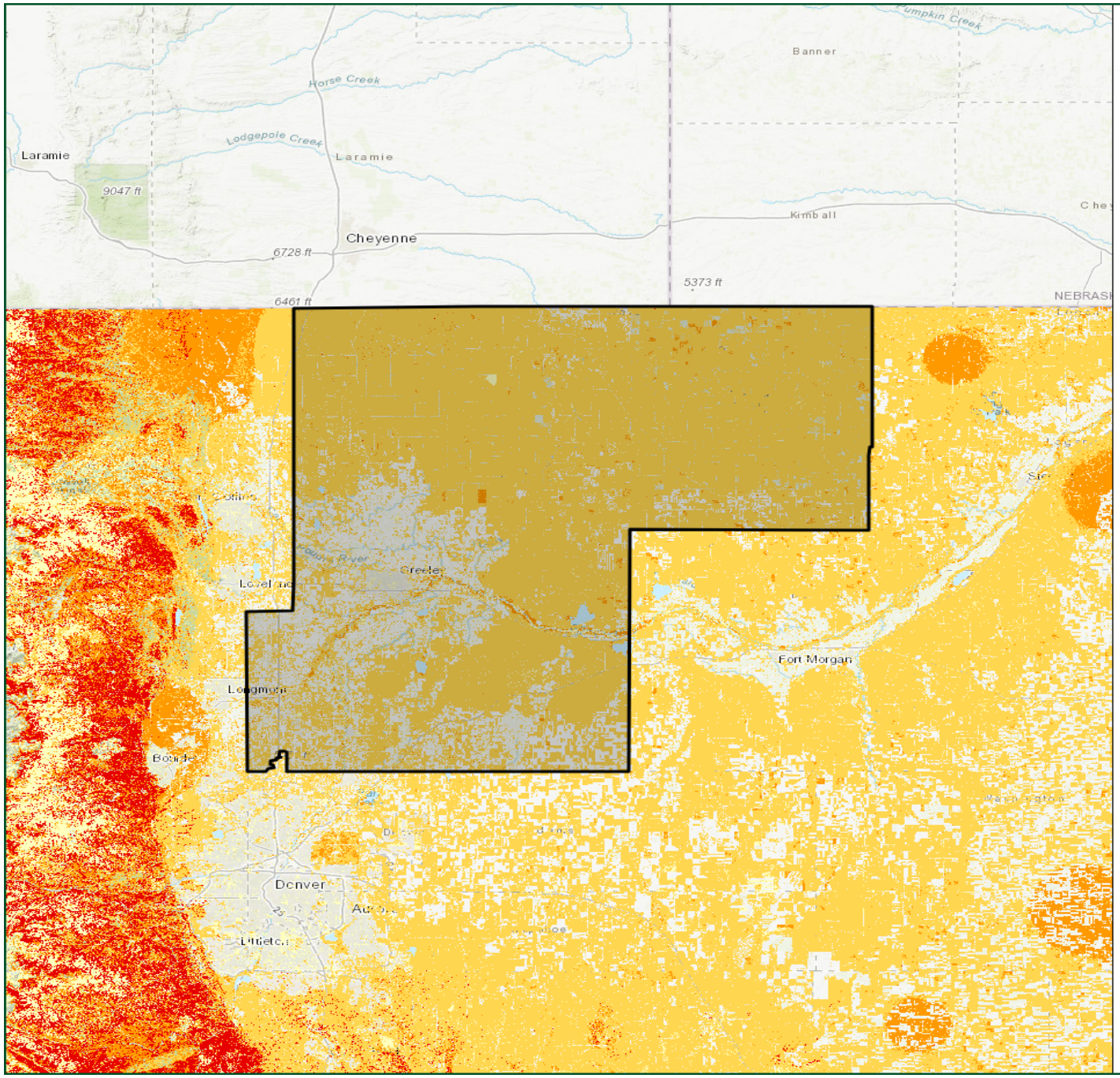
Fire intensity scale is a fire behavior output, which is influenced by three environmental factors - fuels, weather, and topography. Weather is by far the most dynamic variable as it changes frequently.

To account for this variability, four percentile weather categories were created from historical weather observations to represent low, moderate, high, and extreme weather days for each 30-meter cell in Colorado. The FIS represents the weighted average for all four weather percentiles.

The fire intensity scale map is derived at a 30-meter resolution. This scale of data was chosen to be consistent with the accuracy of the primary surface fuels dataset used in the assessment. While not appropriate for site specific analysis, it is appropriate for regional, county or local planning efforts.

FIS Class	Acres	Percent
Non-Burnable	563,196	21.9 %
1 Lowest Intensity	0	0.0 %
2 Low	42,404	1.7 %
3 Moderate	1,937,675	75.4 %
4 Moderate to High Intensity	25,482	1.0 %
5 Highest Intensity	75	0.0 %
Total	**2,568,832**	**100 %**


Weld HMP
Fire Intensity Scale
Acres
2 200k
2 000k
1 800k
1 600k
1 400k
1 200k
1 000k
800k
600k
400k
200k
0
563 196
0
42 404
1 937 675
25 482
75
Non-Burnable
1 Lowest Intensity
2 Low
3 Moderate
4 Moderate to High Intensity
5 Highest Intensity



Weld HMP

Fire Intensity Scale

- Non-Burnable
- 1 Lowest Intensity
- 2 Low
- 3 Moderate
- 4 Moderate to High Intensity
- 5 Highest Intensity

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Fire Type – Extreme Weather

Fire Type – Extreme represents the potential fire type under the extreme percentile weather category. The extreme percentile weather category represents the average weather based on the top three percent fire weather days in the analysis period. It is not intended to represent a worst-case scenario weather event. Accordingly, the potential fire type is based on fuel conditions, extreme percentile weather, and topography.

Canopy fires are very dangerous, destructive and difficult to control due to their increased fire intensity. From a planning perspective, it is important to identify where these conditions are likely to occur on the landscape so that special preparedness measure can be taken if necessary. Typically canopy fires occur in extreme weather conditions. The Fire Type – Extreme layer shows the footprint of where these areas are most likely to occur. However, it is important to note that canopy fires are not restricted to these areas. Under the right conditions, it can occur in other canopied areas.

There are two primary fire types – surface fire and canopy fire. Canopy fire can be further subdivided into passive canopy fire and active canopy fire. A short description of each of these is provided below.

Surface Fire

A fire that spreads through surface fuel without consuming any overlying canopy fuel. Surface fuels include grass, timber litter, shrub/brush, slash and other dead or live vegetation within about 6 feet of the ground.

Passive Canopy Fire

A type of crown fire in which the crowns of individual trees or small groups of trees burn, but solid flaming in the canopy cannot be maintained except for short periods (Scott & Reinhardt, 2001).

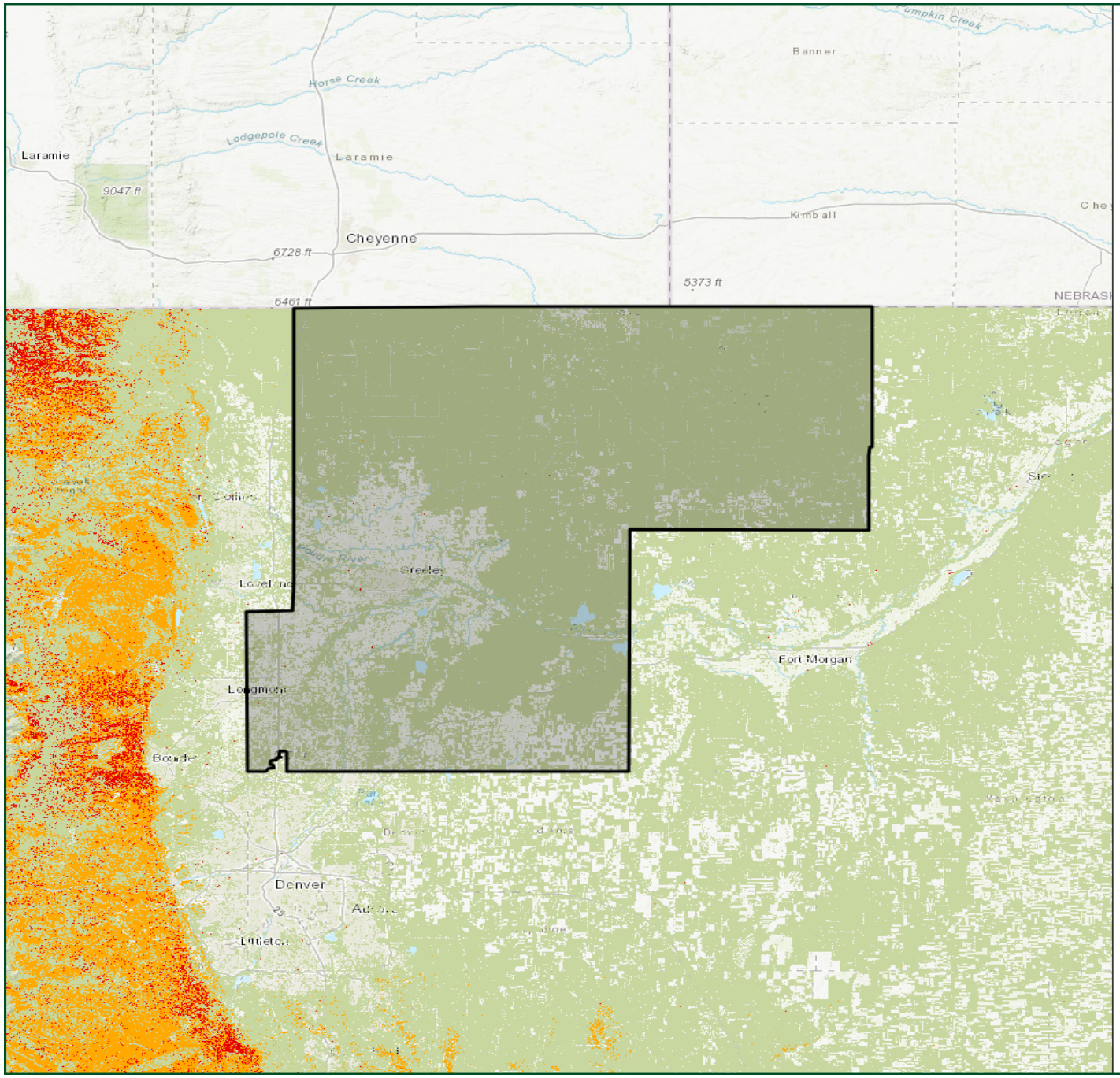
Active Canopy Fire

A crown fire in which the entire fuel complex (canopy) is involved in flame, but the crowning phase remains dependent on heat released from surface fuel for continued spread (Scott & Reinhardt, 2001).

The Fire Type - Extreme Weather map is derived at a 30-meter resolution. This scale of data was chosen to be consistent with the accuracy of the primary surface fuels dataset used in the assessment. While not appropriate for site specific analysis, it is appropriate for regional, county or local planning efforts.

Fire Type - Extreme Weather	Acres	Percent
Surface Fire	2,005,402	100.0 %
Passive Canopy Fire	65	0.0 %
Active Canopy Fire	169	0.0 %
Total	**2,005,636**	**100 %**

Weld HMP
Fire Type – Extreme Weather
Acres
2 200k
2 000k
1 800k
1 600k
1 400k
1 200k
1 000k
800k
600k
400k
200k
0
2 005 402
65
169
Surface Fire
Passive Canopy Fire
Active Canopy Fire



Weld HMP

Fire Type Extreme Weather

- Surface Fire
- Passive Canopy Fire
- Active Canopy Fire

20 mi

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Surface Fuels

Description

Surface fuels, or fire behavior fuel models as they are technically referred to, contain the parameters required by the Rothermel (1972) surface fire spread model to compute surface fire behavior characteristics, including rate of spread, flame length, fireline intensity and other fire behavior metrics. As the name might suggest, surface fuels account only for surface fire potential. Canopy fire potential is computed through a separate but linked process. The Colorado WRA accounts for both surface and canopy fire potential in the fire behavior outputs. However, only surface fuels are shown in this risk report.

Surface fuels typically are categorized into one of four primary fuel types based on the primary carrier of the surface fire: 1) grass, 2) shrub/brush, 3) timber litter, and 4) slash. Two standard fire behavior fuel model sets have been published. The Fire Behavior Prediction System 1982 Fuel Model Set (Anderson, 1982) contains 13 fuel models, and the Fire Behavior Prediction System 2005 Fuel Model Set (Scott & Burgan, 2005) contains 40 fuel models. The Colorado WRA uses fuel models from the 2005 Fuel Model Set.

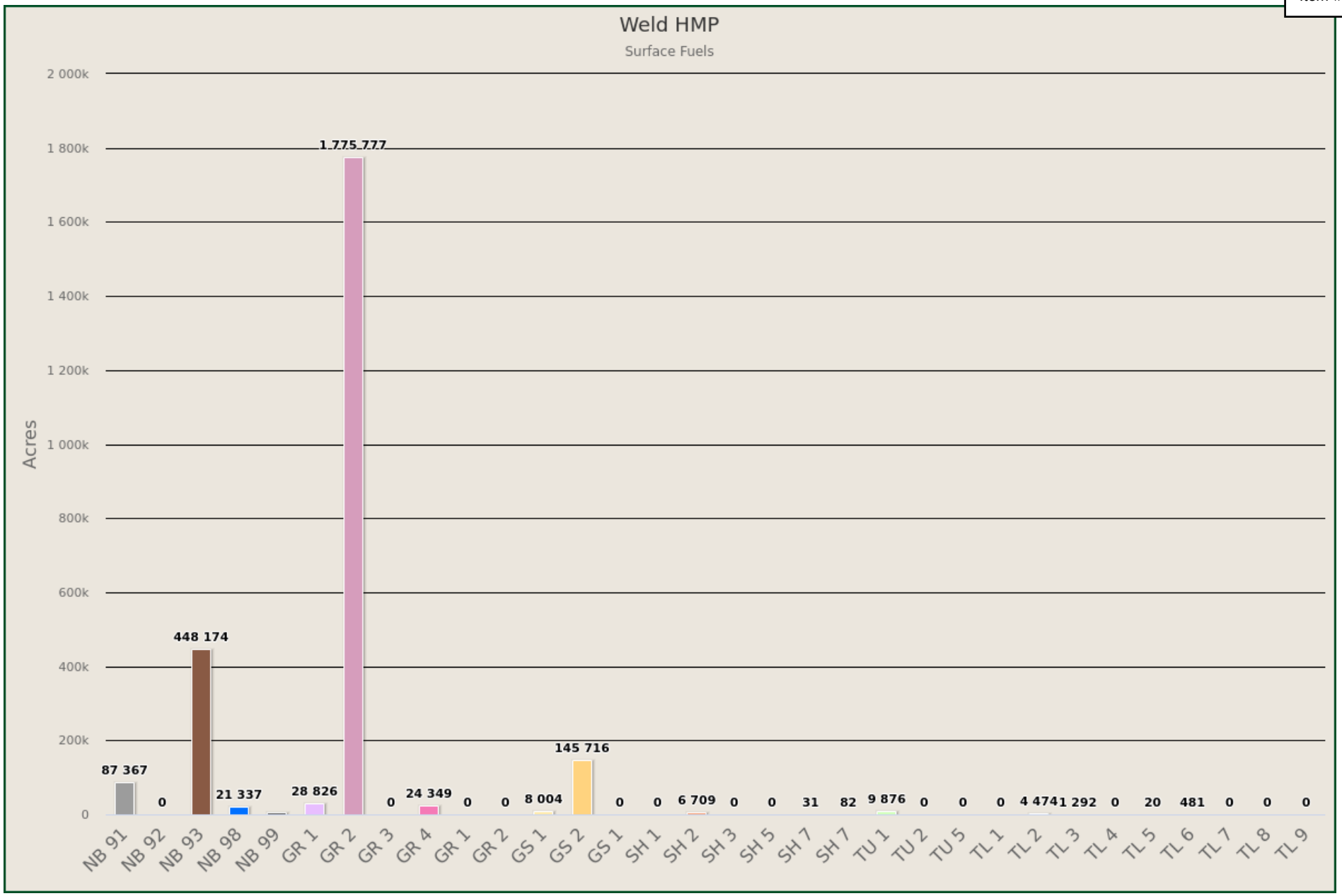
Unmanaged forest with dead and downed trees and branches

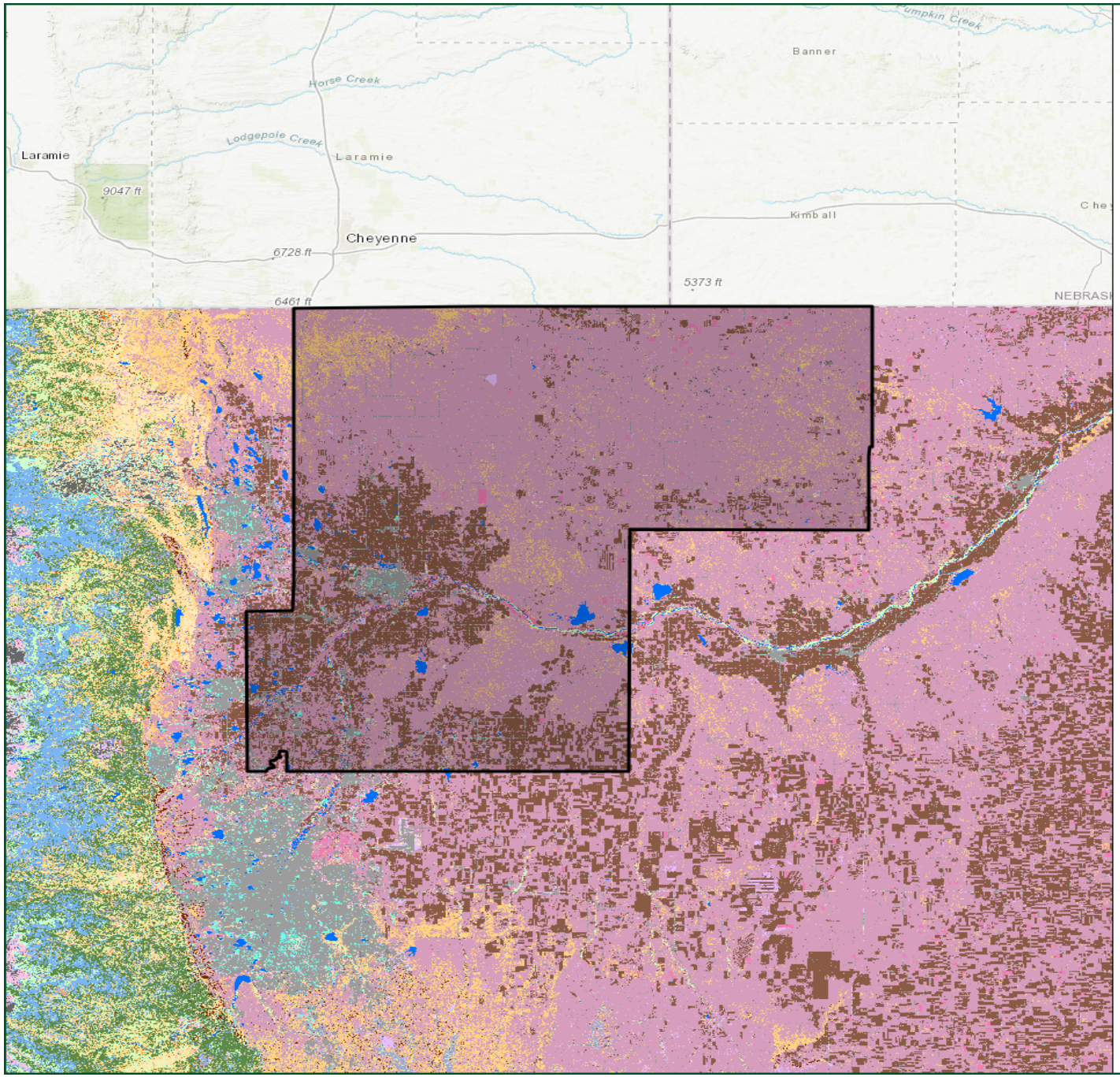
Slash on the ground indicates that forest management treatments have occurred in this area

The 2017 Colorado Surface Fuels were derived by enhancing the baseline LANDFIRE 2014 products with modifications to reflect local conditions and knowledge. A team of fuels and fire behavior experts, led by the CSFS, conducted a detailed calibration of the LANDFIRE 2014 fuels datasets. This calibration involved correcting LANDFIRE mapping zone seamlines errors; adding recent disturbances from 2013 to 2017 for fires, insect and disease, and treatments; correcting fuels for high elevations; adjusting fuels for oak-shrublands and pinyon-juniper areas; and modifying SH7 fuel designations. This calibration effort resulted in an accurate and up-to-date surface fuels dataset that is the basis for the fire behavior and risk calculations in the 2017 Colorado Wildfire Risk Assessment Update.

A detailed description of the fuels calibration methods and results is provided in the CSFS 2017 Fuels Calibration Final Report (July 2018).

Surface Fuels		Description	Acres	Percent
	NB 91	Urban/Developed	87,367	3.4 %
	NB 92	Snow/Ice	0	0 %
	NB 93	Agriculture	448,174	17.4 %
	NB 98	Water	21,337	0.8 %
	NB 99	Barren	6,187	0.2 %
	GR 1	Short, sparse, dry climate grass	28,826	1.1 %
	GR 2	Low load, dry climate grass	1,775,777	69.1 %
	GR 3	Low load, very coarse, humid climate grass	0	0 %
	GR 4	Moderate load, dry climate grass	24,349	0.9 %
	GR 1	GT 10,000 ft elevation	0	0 %
	GR 2	GT 10,000 ft elevation	0	0 %
	GS 1	Low load, dry climate grass-shrub	8,004	0.3 %
	GS 2	Moderate load, dry climate grass-shrub	145,716	5.7 %
	GS 1	GT 10,000 ft elevation	0	0 %
	SH 1	Low load, dry climate shrub	0	0.0 %
	SH 2	Moderate load, dry climate shrub	6,709	0.3 %
	SH 3	Moderate load, humid climate shrub	0	0 %
	SH 5	High load, humid climate shrub	0	0 %
	SH 7	Very high load, dry climate shrub	31	0.0 %
	SH 7	Oak Shrubland without changes	82	0.0 %
	TU 1	Light load, dry climate timber-grass-shrub	9,876	0.4 %
	TU 2	Moderate load, humid climate timber-shrub	0	0 %
	TU 5	Very high load, dry climate timber-shrub	0	0 %
	TL 1	Low load, compact conifer litter	0	0 %
	TL 2	Low load, broadleaf litter	4,474	0.2 %
	TL 3	Moderate load, conifer litter	1,292	0.1 %
	TL 4	Small downed logs	0	0 %
	TL 5	High load, conifer litter	20	0.0 %
	TL 6	Moderate load, broadleaf litter	481	0.0 %
	TL 7	Large downed logs	0	0 %
	TL 8	Long-needle litter	0	0 %
	TL 9	Very high load, broadleaf litter	0	0 %
Total			**2,568,701**	**100 %**


Weld HMP
Surface Fuels
Acres
2 000k
1 800k
1 600k
1 400k
1 200k
1 000k
800k
600k
400k
200k
0
87 367
0
448 174
21 337
28 826
1 775 777
0
24 349
0
0
8 004
145 716
0
0
6 709
0
0
31
82
9 876
0
0
0
4 474
1 292
0
20
481
0
0
0
NB 91
NB 92
NB 93
NB 98
NB 99
GR 1
GR 2
GR 3
GR 4
GR 1
GR 2
GS 1
GS 2
GS 1
SH 1
SH 2
SH 3
SH 5
SH 7
SH 7
TU 1
TU 2
TU 5
TL 1
TL 2
TL 3
TL 4
TL 5
TL 6
TL 7
TL 8
TL 9



Weld HMP

Surface Fuels

- NB 91
- NB 92
- NB 93
- NB 98
- NB 99
- GR 1
- GR 2
- GR 3
- GR 4
- GR 1
- GR 2
- GS 1
- GS 2
- GS 1
- SH 1
- SH 2
- SH 3
- SH 5
- SH 7
- SH 7
- TU 1
- TU 2
- TU 5
- TL 1
- TL 2
- TL 3
- TL 4
- TL 5
- TL 6
- TL 7
- TL 8
- TL 9

20 mi

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Vegetation

Description

The Vegetation map describes the general vegetation and landcover types across the state of Colorado. In the Colorado WRA, the Vegetation dataset is used to support the development of the Surface Fuels, Canopy Cover, Canopy Stand Height, Canopy Base Height, and Canopy Bulk Density datasets.

The LANDFIRE 2014 version of data products (Existing Vegetation Type) was used to compile the Vegetation data for the Colorado WRA. This reflects data current to 2014. The LANDFIRE EVT data were classified to reflect general vegetation cover types for representation with CO-WRAP.

Oak shrublands are commonly found along dry foothills and lower mountain slopes, and are often situated above Piñyon-juniper.

Piñyon-juniper woodlands are common in southern and southwestern Colorado.

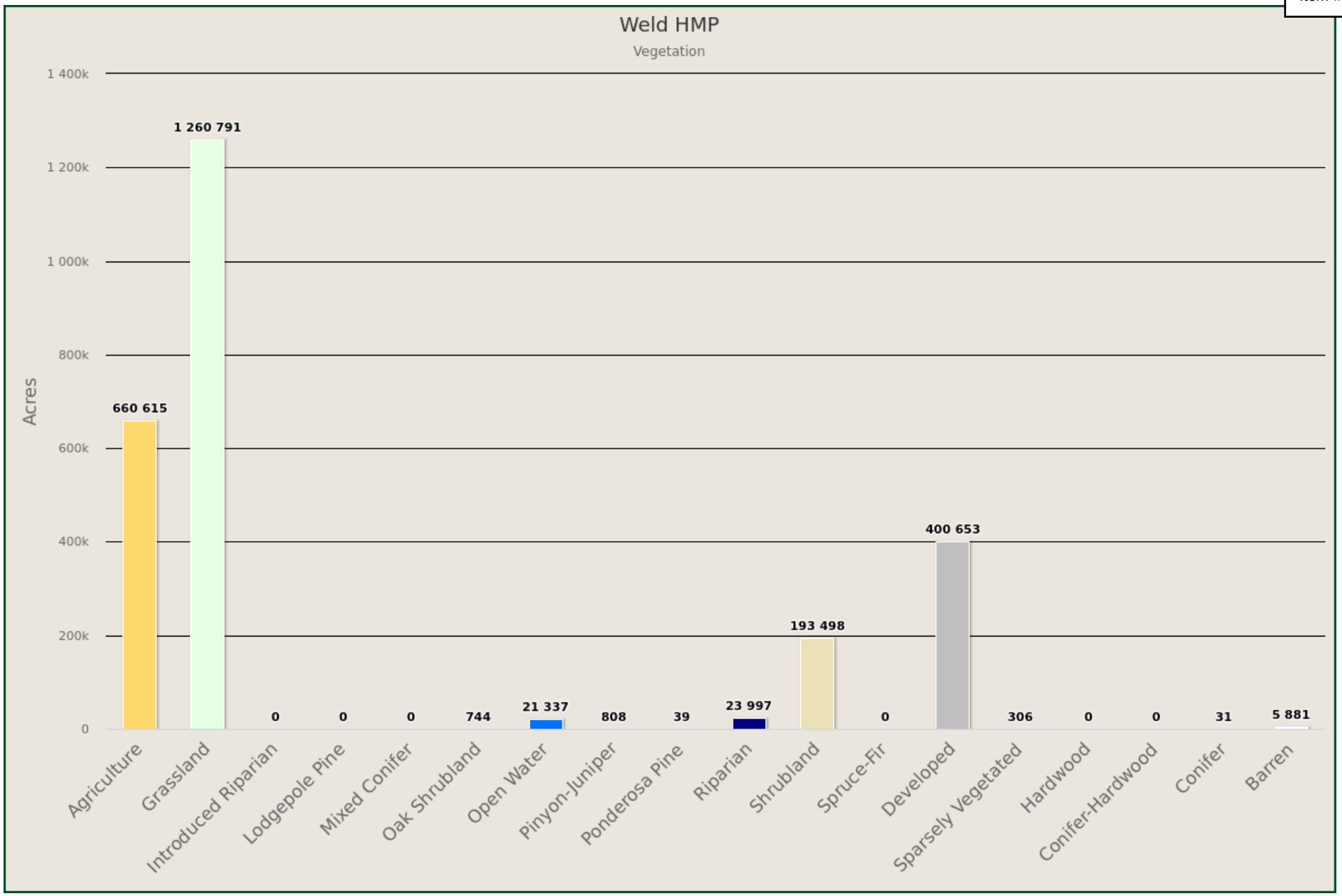
Douglas-fir understory in a ponderosa pine forest.

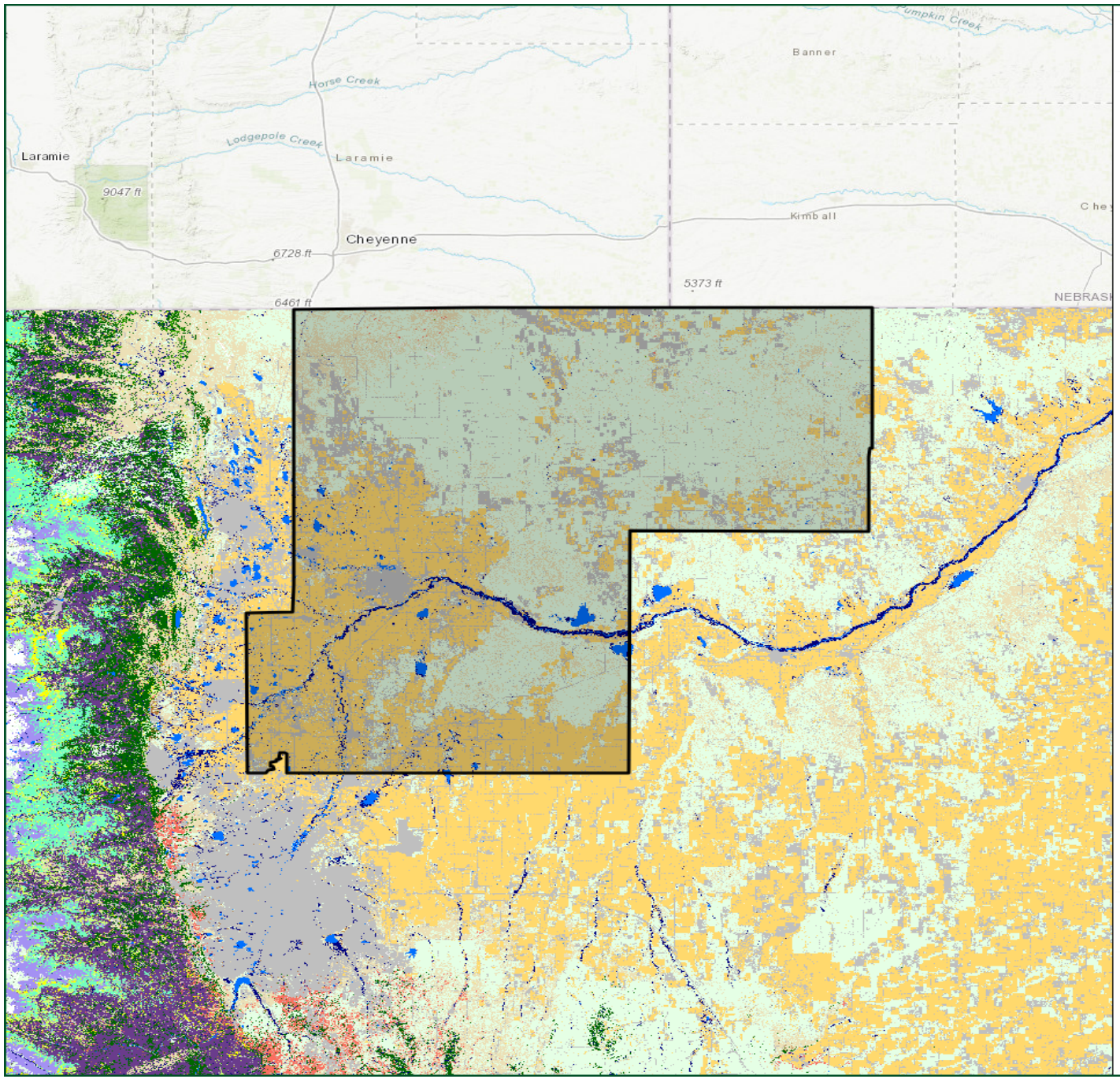
Grasslands occur both on Colorado's Eastern Plains and on the Western Slope.

Wildland fire threat increases in lodgepole pine as the dense forests grow old.

Overly dense ponderosa pine, a dominant species of the montane zone.

Vegetation Class	Acres	Percent
Agriculture	660,615	25.7 %
Grassland	1,260,791	49.1 %
Introduced Riparian	0	0 %
Lodgepole Pine	0	0 %
Mixed Conifer	0	0 %
Oak Shrubland	744	0.0 %
Open Water	21,337	0.8 %
Pinyon-Juniper	808	0.0 %
Ponderosa Pine	39	0.0 %
Riparian	23,997	0.9 %
Shrubland	193,498	7.5 %
Spruce-Fir	0	0 %
Developed	400,653	15.6 %
Sparsely Vegetated	306	0.0 %
Hardwood	0	0 %
Conifer-Hardwood	0	0 %
Conifer	31	0.0 %
Barren	5,881	0.2 %
Total	**2,568,701**	**100 %**


Weld HMP
Vegetation
Acres
1 400k
1 200k
1 000k
800k
600k
400k
200k
0
660 615
1 260 791
0
0
0
744
21 337
808
39
23 997
193 498
0
400 653
306
0
0
31
5 881
Agriculture
Grassland
Introduced Riparian
Lodgepole Pine
Mixed Conifer
Oak Shrubland
Open Water
Pinyon-Juniper
Ponderosa Pine
Riparian
Shrubland
Spruce-Fir
Developed
Sparsely Vegetated
Hardwood
Conifer-Hardwood
Conifer
Barren



Weld HMP

Vegetation

- Agriculture
- Barren
- Grassland
- Introduced Riparian
- Lodgepole Pine
- Mixed Conifer
- Oak Shrubland
- Open Water
- Pinyon-Juniper
- Ponderosa Pine
- Riparian
- Shrubland
- Spruce-Fir
- Developed
- Sparsely Vegetated
- Hardwood
- Conifer-Hardwood
- Conifer

20 mi

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Drinking Water Importance Areas

Description

Drinking Water Importance Areas is the measure of quality and quantity of public surface drinking water categorized by watershed. This layer identifies an index of surface drinking water importance, reflecting a measure of water quality and quantity, characterized by Hydrologic Unit Code 12 (HUC 12) watersheds. The Hydrologic Unit system is a standardized watershed classification system developed by the USGS. Areas that are a source of drinking water are of critical importance and adverse effects from fire are a key concern.

The U.S. Forest Service Forests to Faucets (F2F) project is the primary source of the drinking water data set. This project used GIS modeling to develop an index of importance for supplying drinking water using HUC 12 watersheds as the spatial resolution. Watersheds are ranked from 1 to 100 reflecting relative level of importance, with 100 being the most important and 1 the least important.

Several criteria were used in the F2F project to derive the importance rating including water supply, flow analysis, and downstream drinking water demand. The final model of surface drinking water importance used in the F2F project combines the drinking water protection model, capturing the flow of water and water demand, with a model of mean annual water supply.

The values generated by the drinking water protection model are simply multiplied by the results of the model of mean annual water supply to create the final surface drinking water importance index.

Water is critical to sustain life. Human water usage has further complicated nature's already complex aquatic system. Plants, including trees, are essential to the proper functioning of water movement within the environment. Forests receive precipitation, utilize it for their sustenance and growth, and influence its storage and/or passage to other parts of the environment.

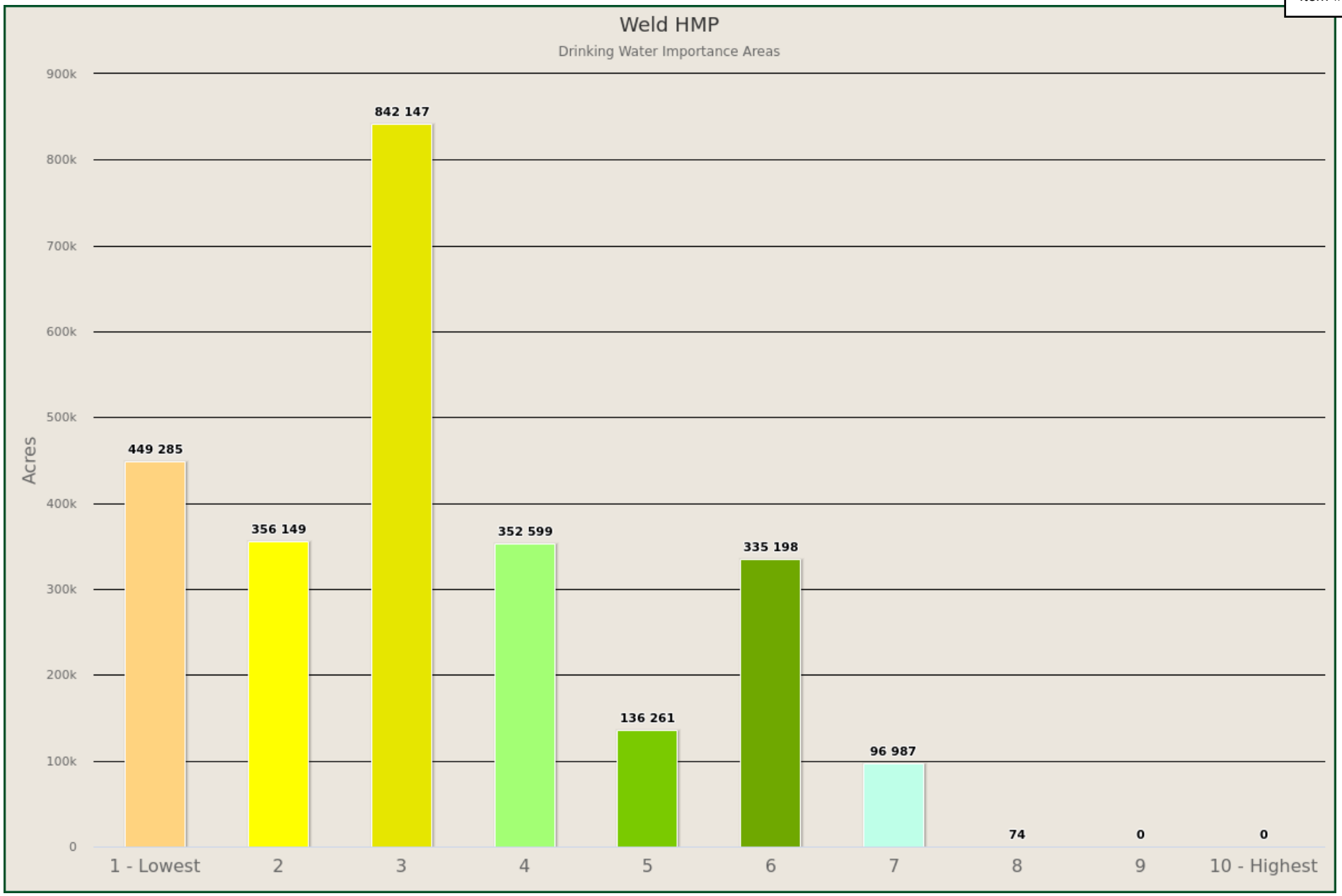
Four major river systems – the Platte, Colorado, Arkansas and Rio Grande – originate in the Colorado mountains and fully drain into one-third of the landmass of the lower 48 states. Mountain snows supply 75 percent of the water to these river systems.

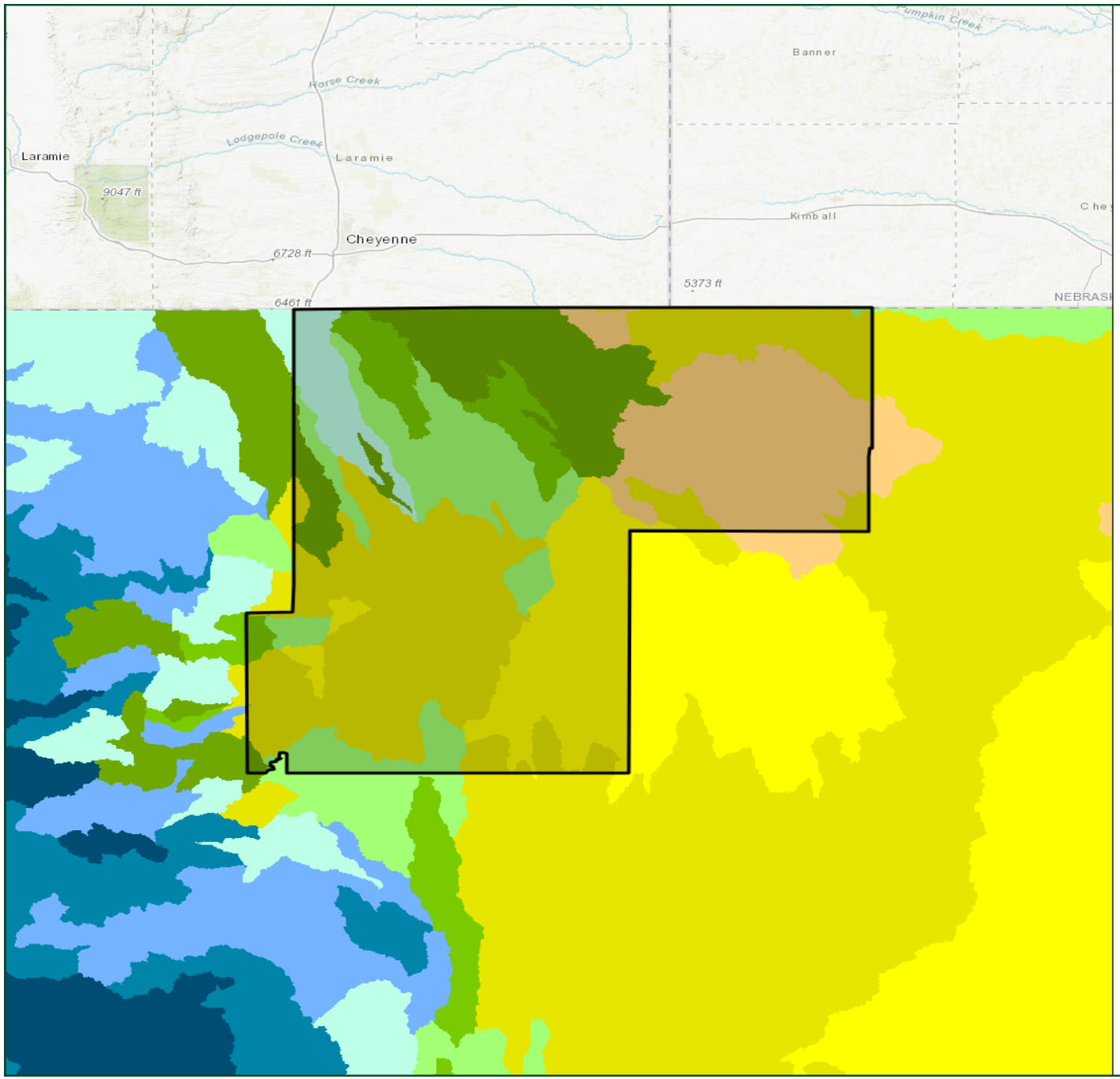
Virtually all of Colorado's drinking water comes from snowmelt carried at some point by a river.

The headwaters of the Animas River begin near Silverton, CO at elevations greater than 12,000 feet.

Approximately 40 percent of the water comes from the highest 20 percent of the land, most of which lies in national forests. National forests yield large portions of the total water in these river systems. The potential is great for forests to positively and negatively influence the transport of water over such immense distances.

Drinking Water Class	Acres	Percent
1 - Lowest	449,285	17.5 %
2	356,149	13.9 %
3	842,147	32.8 %
4	352,599	13.7 %
5	136,261	5.3 %
6	335,198	13.0 %
7	96,987	3.8 %
8	74	0.0 %
9	0	0 %
10 - Highest	0	0 %
Total	**2,568,701**	**100 %**


Weld HMP
Drinking Water Importance Areas
Acres
900k
800k
700k
600k
500k
400k
300k
200k
100k
0
449 285
356 149
842 147
352 599
136 261
335 198
96 987
74
0
0
1 - Lowest
2
3
4
5
6
7
8
9
10 - Highest



Weld HMP

Drinking Water Importance Areas

- 1 - Lowest
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10 - Highest

20 mi

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Drinking Water Risk Index

Description

Drinking Water Risk Index is a measure of the risk to DWIAs based on the potential negative impacts from wildfire.

In areas that experience low-severity burns, fire events can serve to eliminate competition, rejuvenate growth and improve watershed conditions. But in landscapes subjected to high, or even moderate-burn severity, the post-fire threats to public safety and natural resources can be extreme.

High-severity wildfires remove virtually all forest vegetation – from trees, shrubs and grasses down to discarded needles, decomposed roots and other elements of ground cover or duff that protect forest soils. A severe wildfire also can cause certain types of soil to become hydrophobic by forming a waxy, water-repellent layer that keeps water from penetrating the soil, dramatically amplifying the rate of runoff.

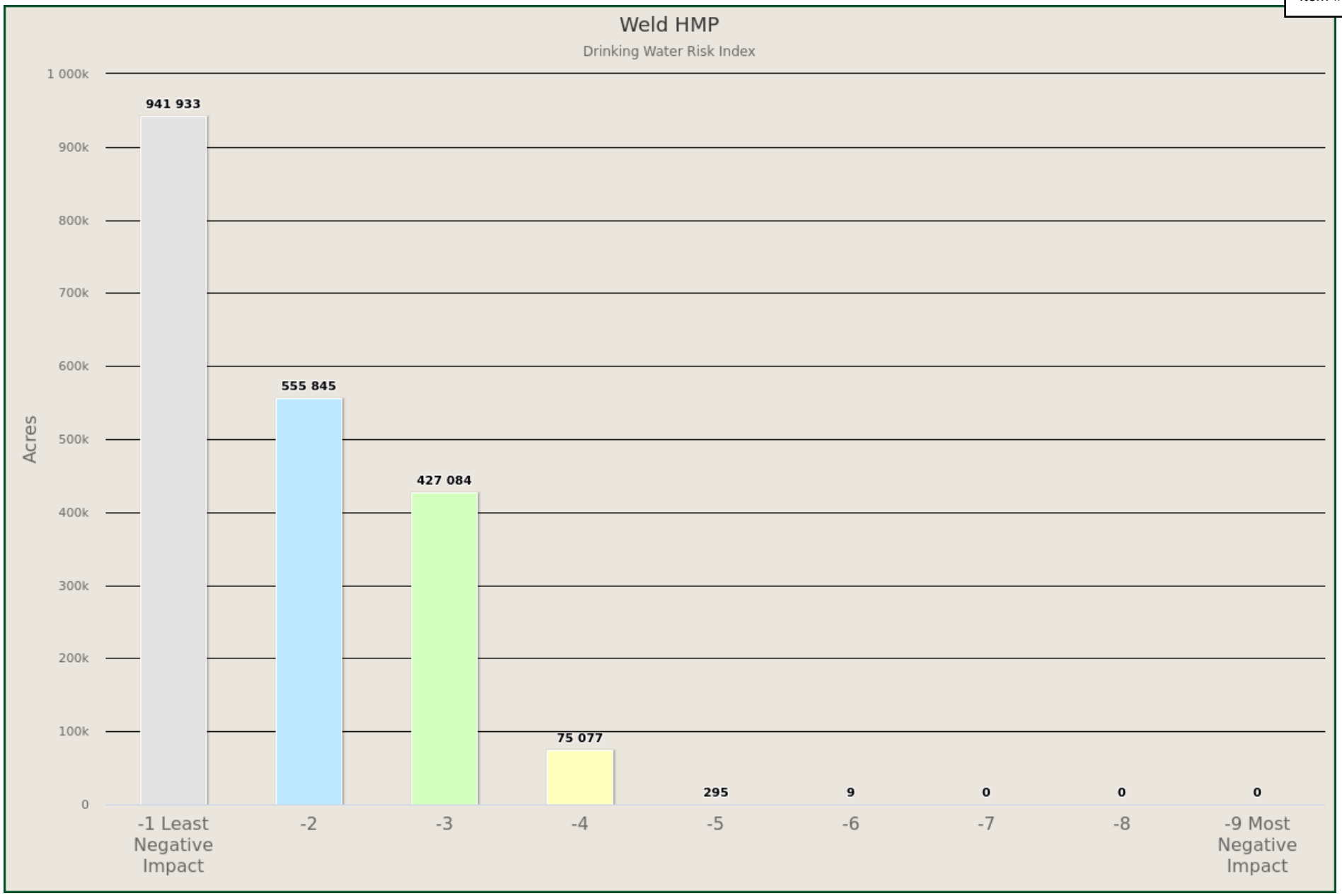
The loss of critical surface vegetation leaves forested slopes extremely vulnerable to large-scale soil erosion and flooding during subsequent storm events. In turn, these threats can impact the health, safety and integrity of communities and natural resources downstream. The likelihood that such a post-fire event will occur in Colorado is increased by the prevalence of highly erodible soils in several parts of the state, and weather patterns that frequently bring heavy rains on the heels of fire season.

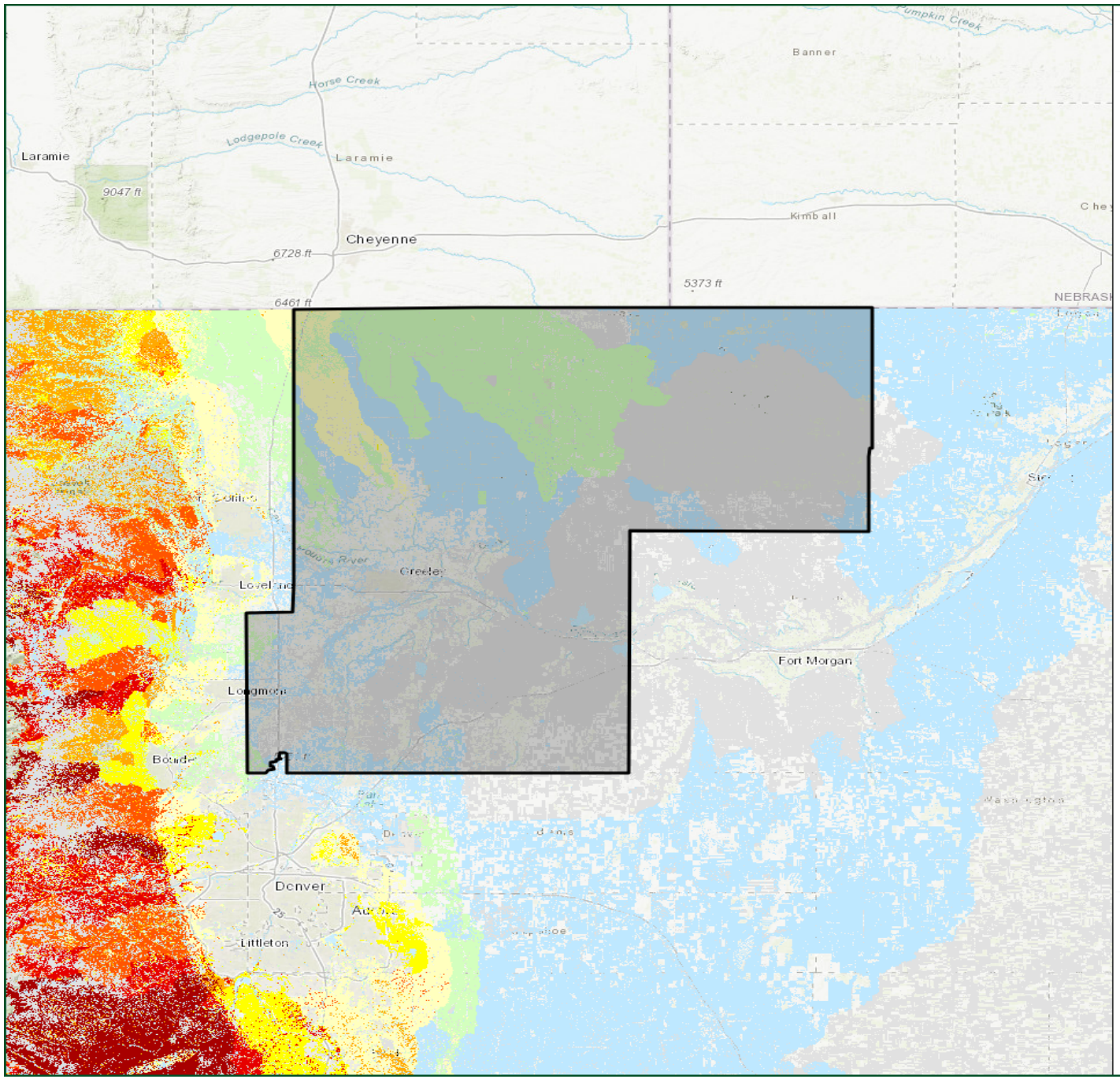
In the aftermath of the 2002 fire season, the Colorado Department of Health estimated that 26 municipal water storage facilities were shut down due to fire and post-fire impacts.

The potential for severe soil erosion is a consequence of wildfire because as a fire burns, it destroys plant material and the litter layer. Shrubs, forbs, grasses, trees and the litter layer disperse water during severe rainstorms. Plant roots stabilize the soil, and stems and leaves slow the water to give it time to percolate into the soil profile. Fire can destroy this soil protection.

The range of values is from -1 to -9, with -1 representing the least negative impact and -9 representing the most negative impact.

Class	Acres	Percent
-1 Least Negative Impact	941,933	47.1 %
-2	555,845	27.8 %
-3	427,084	21.4 %
-4	75,077	3.8 %
-5	295	0.0 %
-6	9	0.0 %
-7	0	0 %
-8	0	0 %
-9 Most Negative Impact	0	0 %
Total	**2,000,243**	**100 %**


Weld HMP
Drinking Water Risk Index
Acres
1 000k
900k
800k
700k
600k
500k
400k
300k
200k
100k
0
941 933
555 845
427 084
75 077
295
9
0
0
0
-1 Least Negative Impact
-2
-3
-4
-5
-6
-7
-8
-9 Most Negative Impact



Weld HMP

Drinking Water Risk Index

- -1 Least Negative Impact
- -2
- -3
- -4
- -5
- -6
- -7
- -8
- -9 Most Negative Impact

20 mi

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Riparian Assets

Description

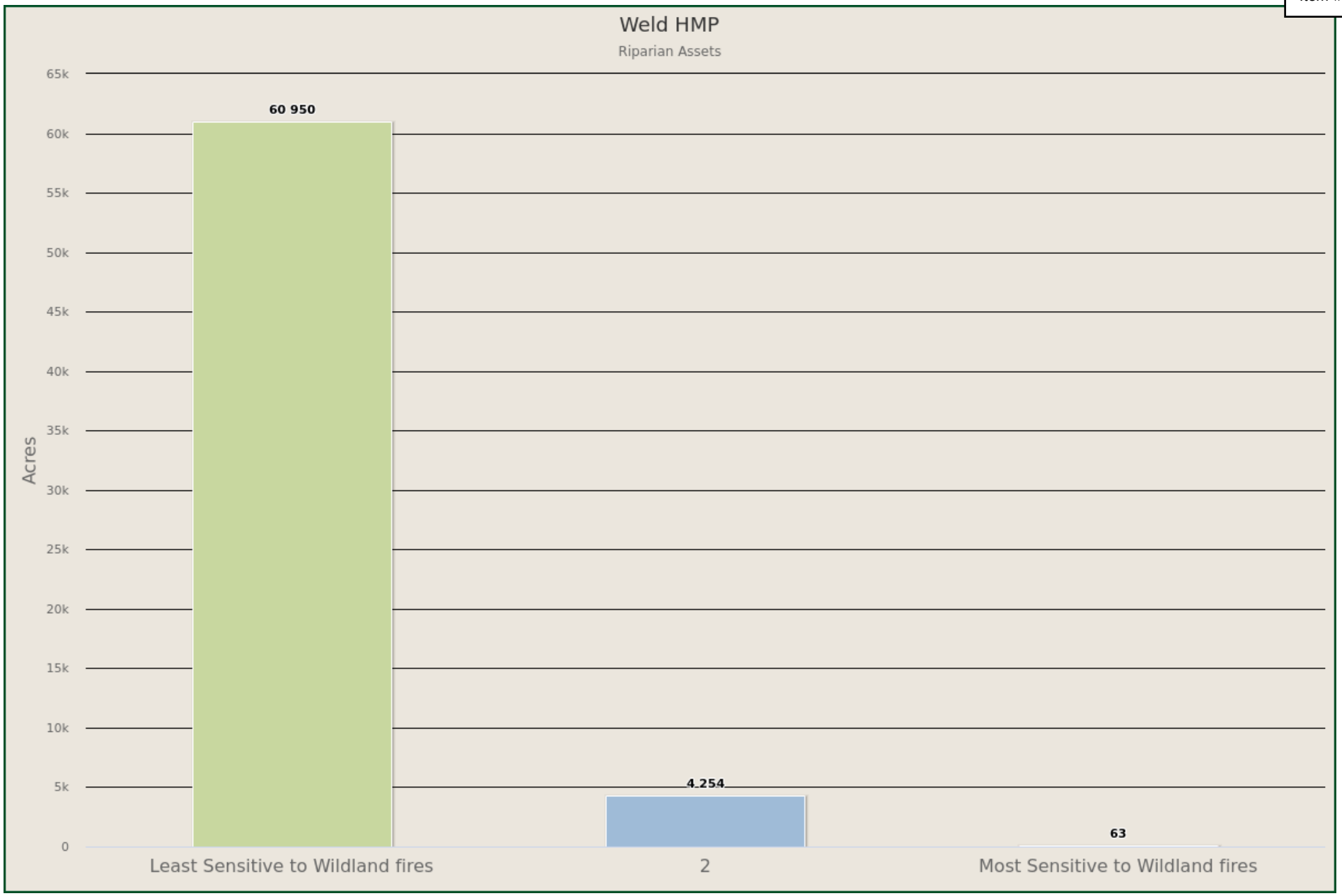
Riparian Assets are forested riparian areas characterized by functions of water quantity and quality, and ecology. This layer identifies riparian areas that are important as a suite of ecosystem services, including both terrestrial and aquatic habitat, water quality, water quantity, and other ecological functions. Riparian areas are considered an especially important element of the landscape in the west. Accordingly, riparian assets are distinguished from other forest assets so they can be evaluated separately.

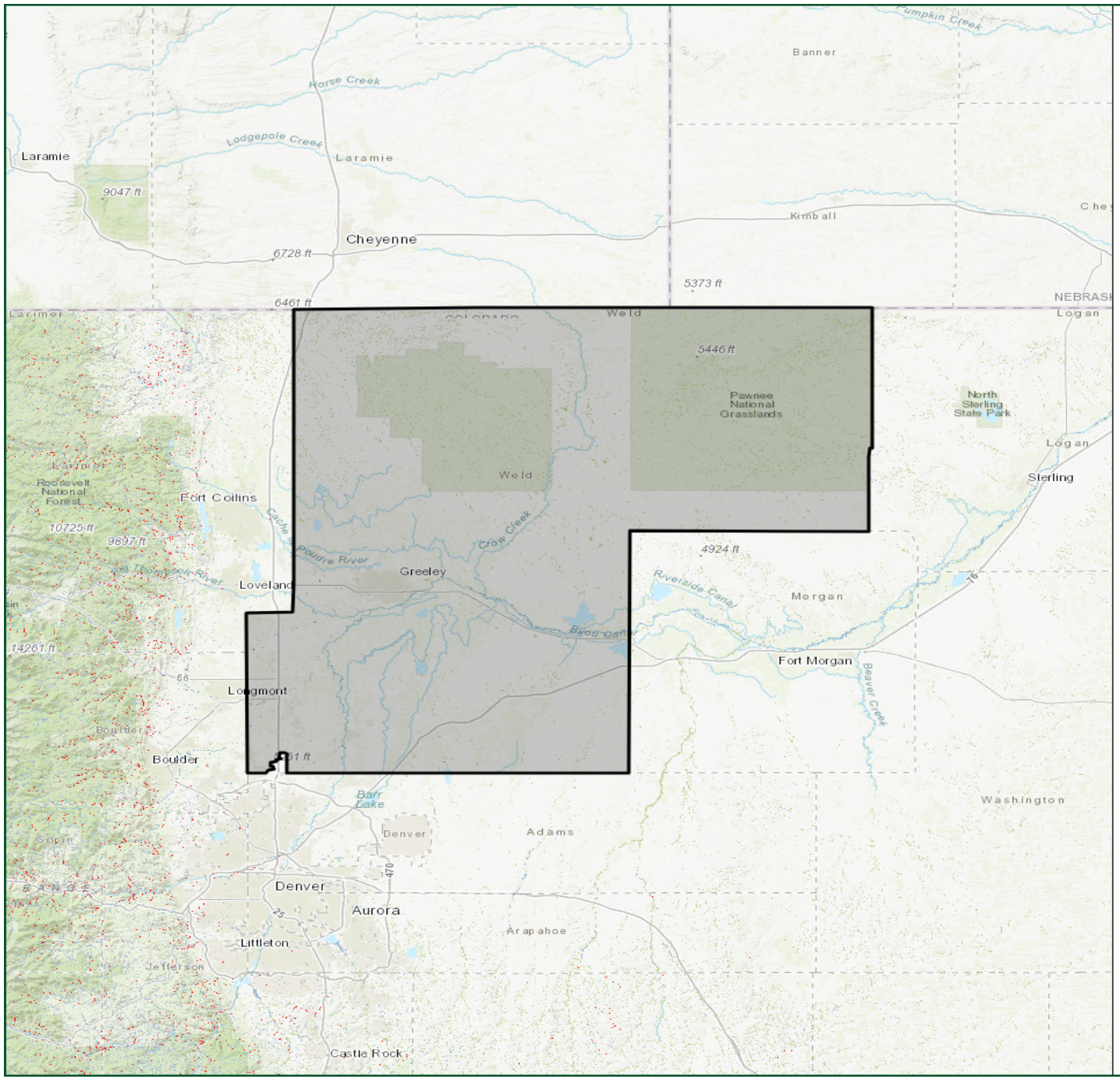
The process for defining these riparian areas involved identifying the riparian footprint and then assigning a rating based upon two important riparian functions – water quantity and quality, and ecological significance. A scientific model was developed by the West Wide Risk Assessment technical team with in-kind support from CAL FIRE state representatives. Several input datasets were used in the model including the National Hydrography Dataset and the National Wetland Inventory.

The National Hydrography Data Set (NHD) was used to represent hydrology. A subset of streams and water bodies, which represents perennial, intermittent, and wetlands, was created. The NHD water bodies dataset was used to determine the location of lakes, ponds, swamps, and marshes (wetlands).

To model water quality and quantity, erosion potential (K-factor) and annual average precipitation was used as key variables. The Riparian Assets data are an index of class values that range from 1 to 3 representing increasing importance of the riparian area as well as sensitivity to fire-related impacts on the suite of ecosystem services.

Riparian Assets Class	Acres	Percent
Least Sensitive to Wildland fires	60,950	93.4 %
2	4,254	6.5 %
Most Sensitive to Wildland fires	63	0.1 %
Total	**65,267**	**100 %**


Weld HMP
Riparian Assets
Acres
65k
60k
55k
50k
45k
40k
35k
30k
25k
20k
15k
10k
5k
0
60 950
4 254
63
Least Sensitive to Wildland fires
2
Most Sensitive to Wildland fires



Weld HMP

Riparian Assets

- Least Sensitive to Wildland fires
- 2
- Most Sensitive to Wildland fires

20 mi

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Riparian Assets Risk Index

Description

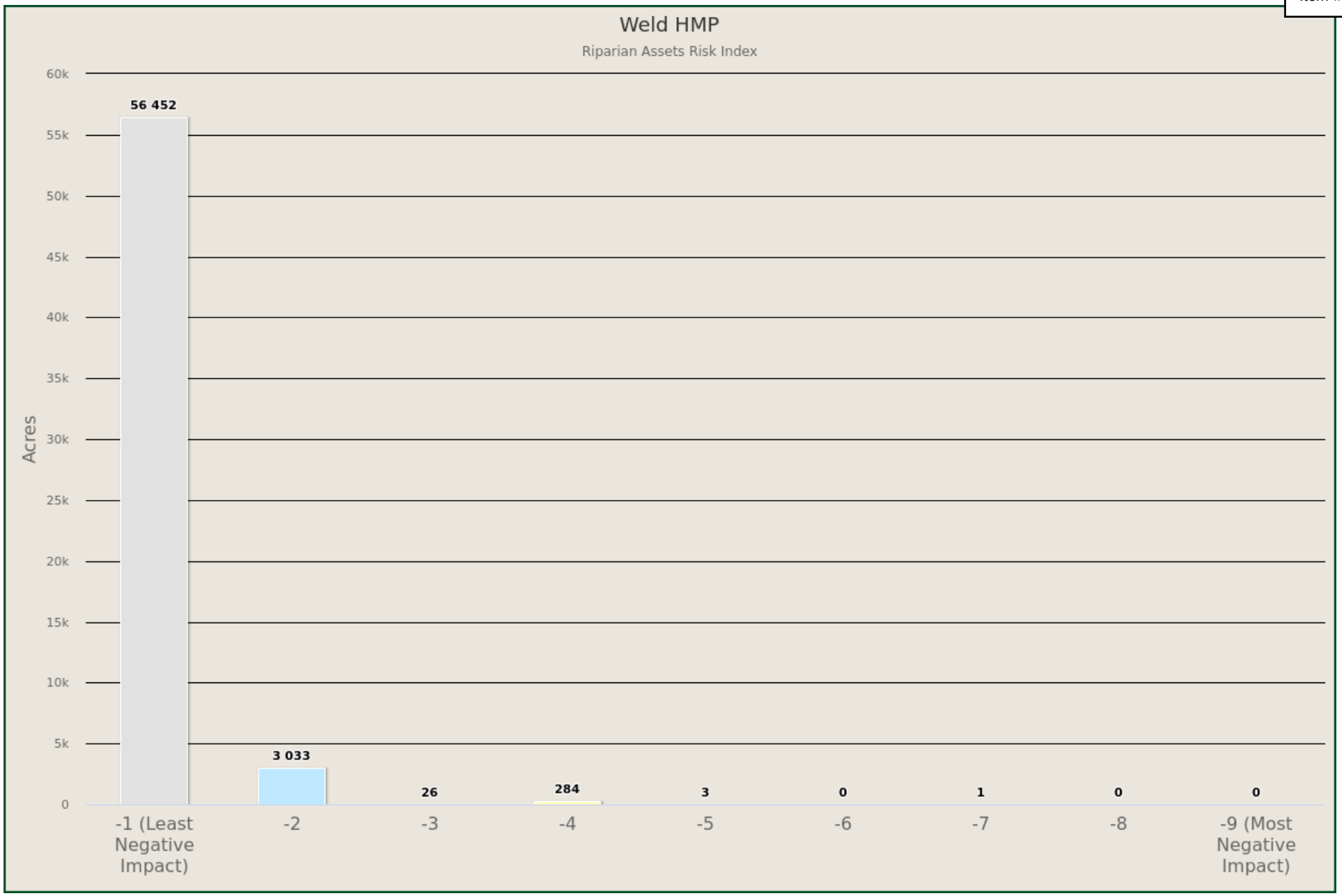
Riparian Assets Risk Index is a measure of the risk to riparian areas based on the potential negative impacts from wildfire. This layer identifies those riparian areas with the greatest potential for adverse effects from wildfire.

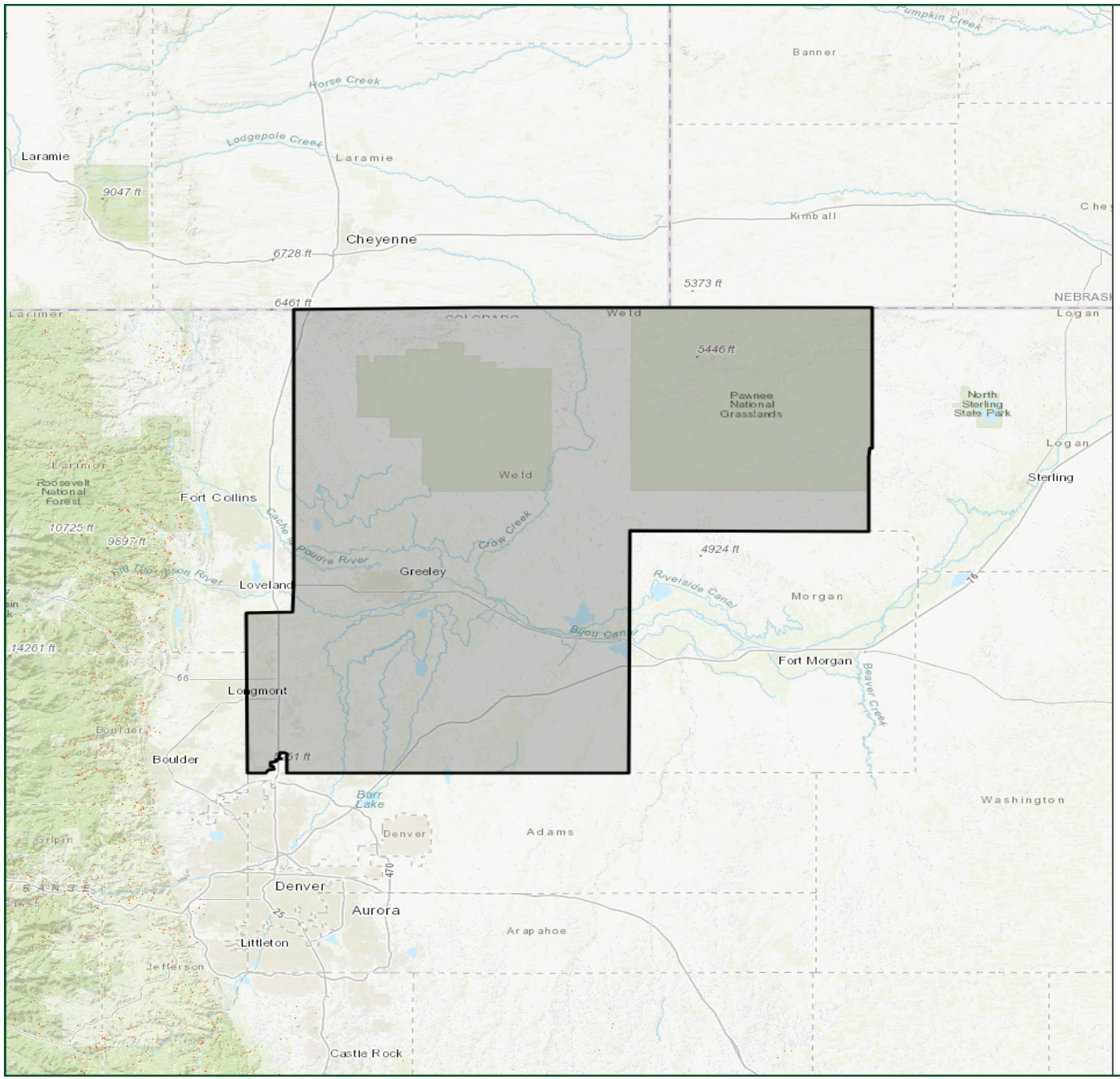
The range of values is from -1 to -9, with -1 representing the least negative impact and -9 representing the most negative impact.

The risk index has been calculated by combining the Riparian Assets data with a measure of fire intensity using a Response Function approach. Those areas with the highest negative impact (-9) represent areas with high potential fire intensity and high importance for ecosystem services. Those areas with the lowest negative impact (-1) represent those areas with low potential fire intensity and a low importance for ecosystem services.

This risk output is intended to supplement the Drinking Water Risk Index by identifying wildfire risk within the more detailed riparian areas.

Riparian Assets Risk Class	Acres	Percent
-1 (Least Negative Impact)	56,452	94.4 %
-2	3,033	5.1 %
-3	26	0.0 %
-4	284	0.5 %
-5	3	0.0 %
-6	0	0 %
-7	1	0.0 %
-8	0	0 %
-9 (Most Negative Impact)	0	0 %
Total	**59,798**	**100 %**


Weld HMP
Riparian Assets Risk Index
Acres
60k
55k
50k
45k
40k
35k
30k
25k
20k
15k
10k
5k
0
56 452
3 033
26
284
3
0
1
0
0
-1 (Least Negative Impact)
-2
-3
-4
-5
-6
-7
-8
-9 (Most Negative Impact)



Weld HMP

Riparian Assets Risk Index

- -1 (Least Negative Impact)
- -2
- -3
- -4
- -5
- -6
- -7
- -8
- -9 (Most Negative Impact)

20 mi

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Forest Assets

Description

Forest Assets are forested areas categorized by height, cover, and susceptibility/response to fire. This layer identifies forested land categorized by height, cover and susceptibility or response to fire. Using these characteristics allows for the prioritization of landscapes reflecting forest assets that would be most adversely affected by fire. The rating of importance or value of the forest assets is relative to each state's interpretation of those characteristics considered most important for their landscapes.

Canopy cover from LANDFIRE 2014 was re-classified into two categories, open or sparse and closed. Areas classified as open or sparse have a canopy cover less than 60%. Areas classified as closed have a canopy cover greater than 60%.

Canopy height from LANDFIRE 2014 was re-classified into two categories, 0-10 meters and greater than 10 meters.

Response to fire was developed from the LANDFIRE 2014 existing vegetation type (EVT) dataset. There are over 1,000 existing vegetation types in the project area. Using a crosswalk defined by project ecologists, a classification of susceptibility and response to fire was defined and documented by fire ecologists into the three fire response classes.

These three classes are sensitive, resilient and adaptive.

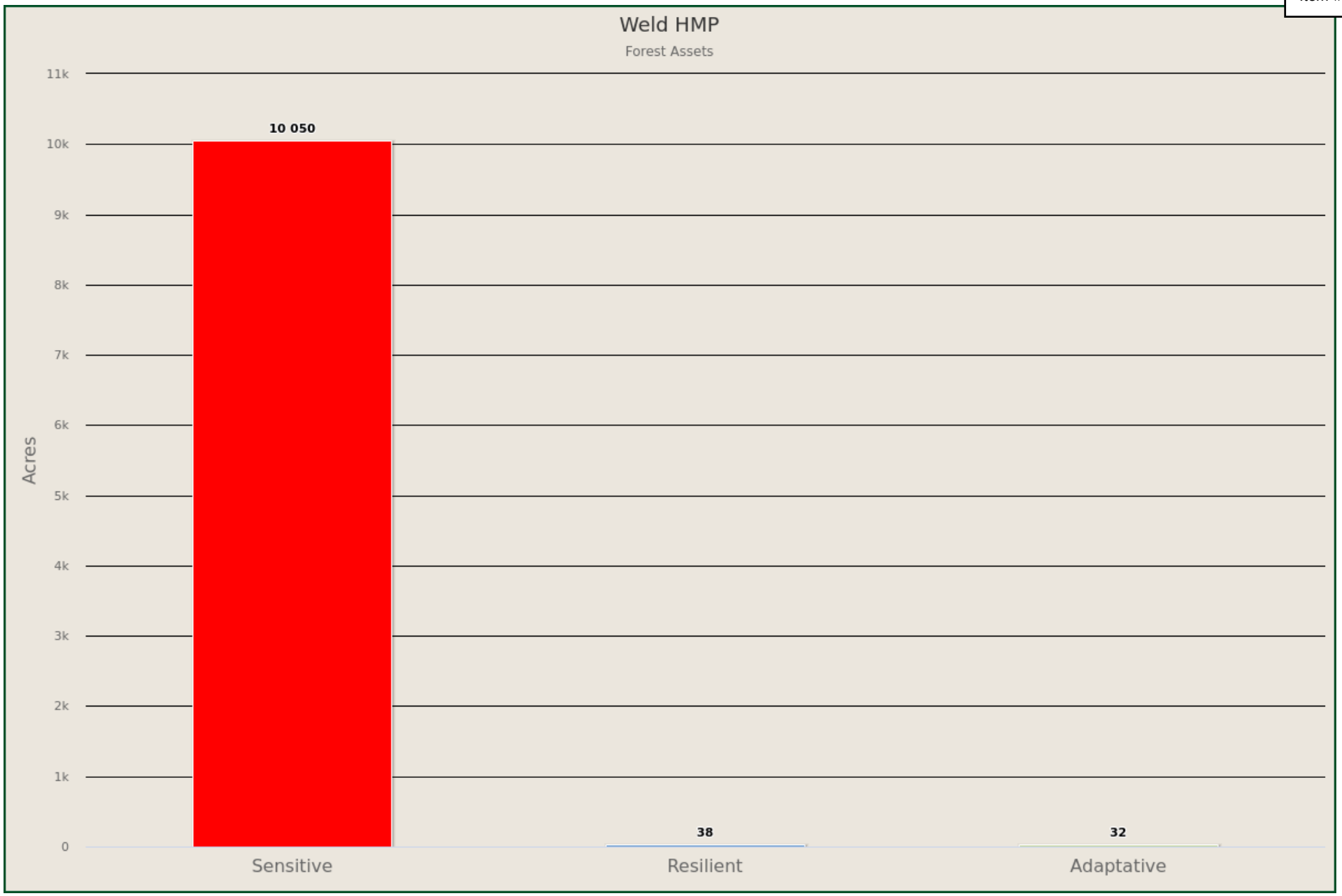
- **Sensitive** = These are tree species that are intolerant or sensitive to damage from fire with low intensity.
- **Resilient** = These are tree species that have characteristics that help the tree resist damage from fire and whose adult stages can survive low intensity fires.
- **Adaptive** = These are tree species adapted with the ability to regenerate following fire by sprouting or serotinous cones

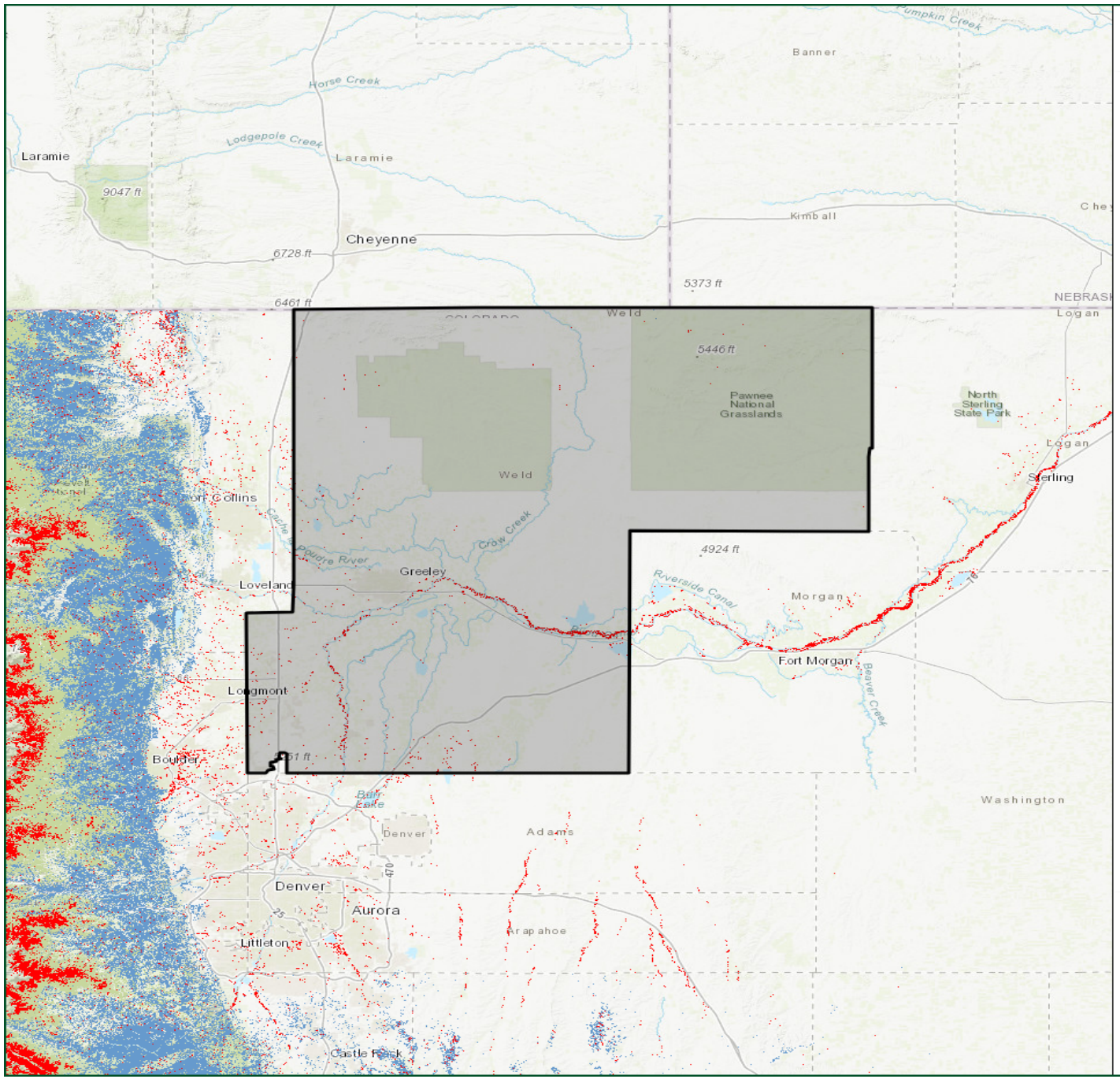
The range of values is from -1 to -9, with -1 representing the least negative impact and -9 representing the most negative impact.

The risk index has been calculated by combining the Forest Assets data with a measure of fire intensity using a Response Function approach. Those areas with the highest negative impact (-9) represent areas with high potential fire intensity and low resilience or adaptability to fire. Those areas with the lowest negative impact (-1) represent those areas with low potential fire intensity and high resilience or adaptability to fire.

This risk output is intended to provide an overall forest index for potential impact from wildfire. This can be applied to consider aesthetic values, ecosystem services, or economic values of forested lands.

Forest Assets	Acres	Percent
Sensitive	10,050	99.3 %
Resilient	38	0.4 %
Adaptative	32	0.3 %
Total	**10,120**	**100 %**


Weld HMP
Forest Assets
Acres
11k
10k
9k
8k
7k
6k
5k
4k
3k
2k
1k
0
10 050
38
32
Sensitive
Resilient
Adaptative



Weld HMP

Forest Assets

- Sensitive
- Resilient
- Adaptative

20 mi

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Forest Assets Risk Index

Description

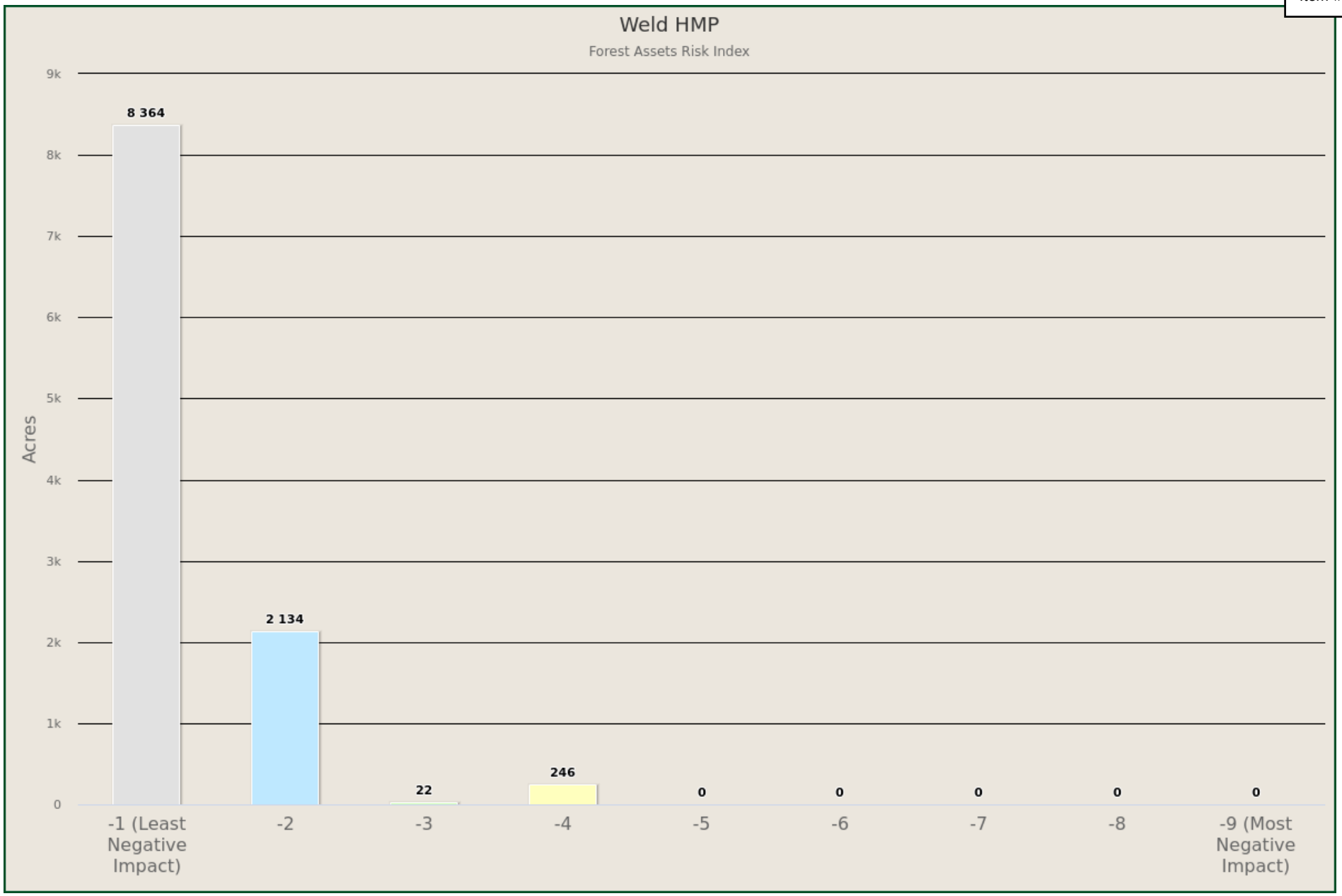
Forest Assets Risk Index is a measure of the risk to forested areas based on the potential negative impacts from wildfire. This layer identifies those forested areas with the greatest potential for adverse effects from wildfire.

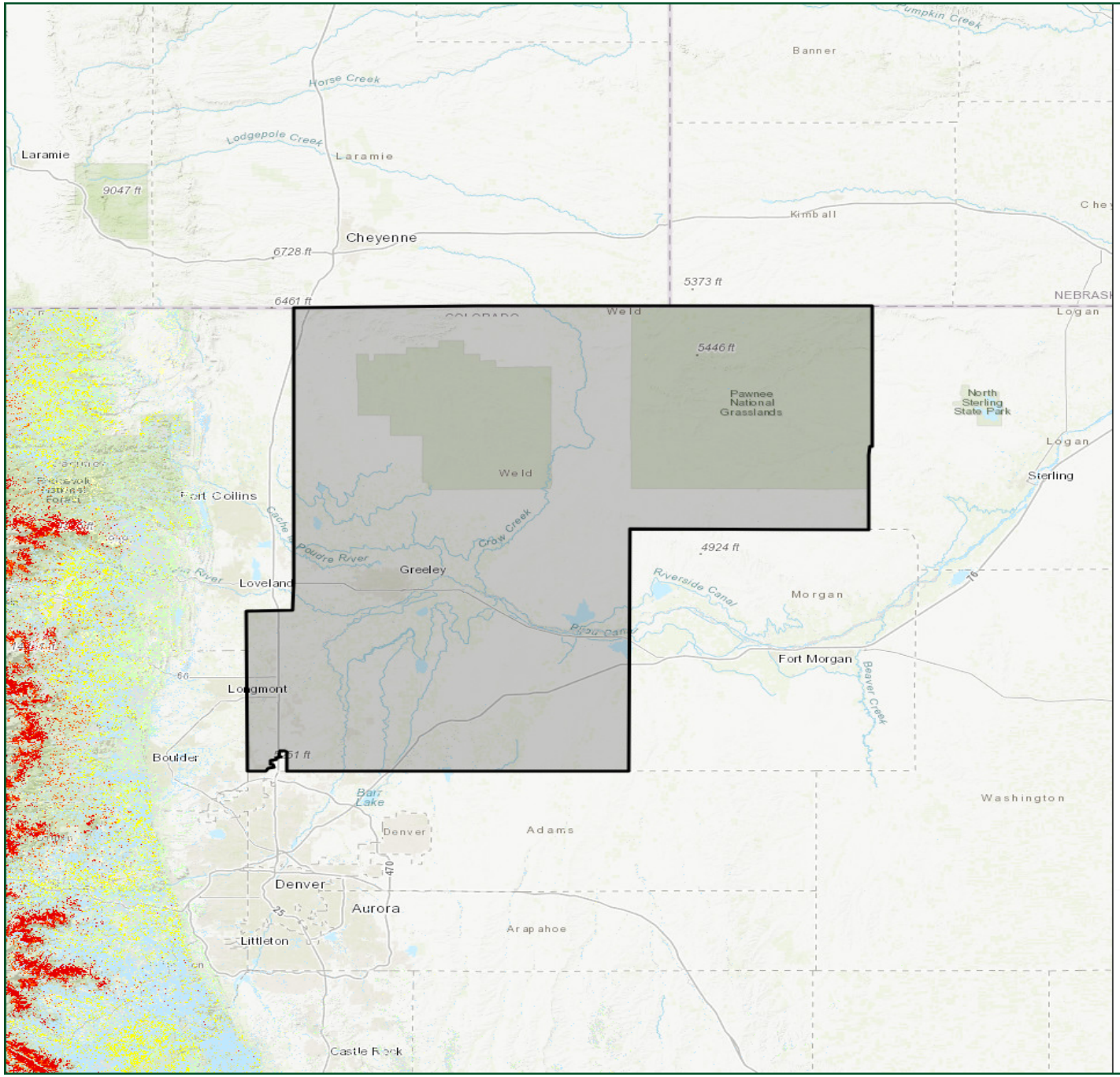
The range of values is from -1 to -9, with -1 representing the least negative impact and -9 representing the most negative impact.

The risk index has been calculated by combining the Forest Assets data with a measure of fire intensity using a Response Function approach. Those areas with the highest negative impact (-9) represent areas with high potential fire intensity and low resilience or adaptability to fire. Those areas with the lowest negative impact (-1) represent those areas with low potential fire intensity and high resilience or adaptability to fire.

This risk output is intended to provide an overall forest index for potential impact from wildfire. This can be applied to consider aesthetic values, ecosystem services, or economic values of forested lands.

Forest Assets Risk Class	Acres	Percent
-1 (Least Negative Impact)	8,364	77.7 %
-2	2,134	19.8 %
-3	22	0.2 %
-4	246	2.3 %
-5	0	0 %
-6	0	0 %
-7	0	0 %
-8	0	0 %
-9 (Most Negative Impact)	0	0 %
Total	**10,766**	**100 %**


Weld HMP
Forest Assets Risk Index
Acres
9k
8k
7k
6k
5k
4k
3k
2k
1k
0
8 364
2 134
22
246
0
0
0
0
0
-1 (Least Negative Impact)
-2
-3
-4
-5
-6
-7
-8
-9 (Most Negative Impact)



Weld HMP

Forest Assets Risk Index

- -1 (Least Negative Impact)
- -2
- -3
- -4
- -5
- -6
- -7
- -8
- -9 (Most Negative Impact)

20 mi

N
S

Colorado Wildfire Risk Assessment
www.ColoradoForestAtlas.org

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COLORADO STATE
FOREST SERVICE
COLORADO STATE UNIVERSITY

11 Appendix F: FEMA Approval & Local Adoptions

Town of Johnstown

MEMORANDUM

TO: Honorable Mayor Lebsack and Town Council Members

FROM: Matt LeCerf, Town Manager

DATE: November 1, 2021

CC: Town Staff
Local Media

SUBJECT: Town Manager's Report

Upcoming Town Council Meetings & Work Sessions – If there are topics that the Council would like staff to schedule for discussion, please let me know. The following topics are recommended for Council discussion (all meetings will be held in the Town Council Chambers unless otherwise indicated):

- 11/8/2021 – Council Work Session – 6 p.m.
- 11/15/2021 – Regular Town Council Meeting
- 11/29/2021 – Council Work Session – 6 p.m.
- 12/06/2021 – Regular Town Council Meeting

Administration, Finance, Planning, & Human Resources

- *Open Enrollment* – We held open enrollment meetings for staff in October. As a participant, employees are required to pay their proportionate share for the program management.
- *HRIS System* – We are working through implementation for our new human resource information and payroll system.
- *Hiring* – The Town is actively recruiting a Public Works Director. Ellen Hilbig was promoted to the position of Utilities Director.
- *Planning & Zoning Commission* – Larry Storms has resigned from the Commission after serving the community for five years. The Town will post this volunteer opening on social media and the website and allow citizens a few weeks to respond before scheduling

candidate interviews. PZC has held multiple hearings in recent months, with upcoming Nov 17 and Dec 15 hearings closing out the 2021 year.

- *Johnstown Cash Program* – There are currently 48 businesses enrolled in the Johnstown Cash Program and over $54,600 has been redeemed in certificates. The program will run until December 31, 2021 and certificates will no longer be valid after that date.
- *September Biz Walk* – September's Biz Walk included the Town Manager and Economic Development Manager who visited with Cristiana Salon. Biz Walks are scheduled monthly by the Economic Development Department.
- *Christmas Tree Sponsorship* – The Town wrapped up the Christmas Tree Sponsorship program and was able to raise over $3,600 through contributions from existing businesses in the community. The tree is set to be installed later this year in the downtown corridor and will feature ornaments from businesses who contributed.
- *Town Website Data* – It has officially been a year since the Town launched its new website, and it has been a successful year. Overall, the site appears to be more consistent used (both internally and externally) and there are more returning users than on the previous platform. The goal of the new website when it was created (and still today) is to provide residents an easier to navigate and user-friendly online portal to conduct business with the Town and be informed of Town events, initiatives, and information. In the past year the site has had over 65k users conducting more than 105,000 sessions with a 20% return rate (these data points are about par with peer's website data).
- *Town Clean Up Voucher Program 2021* – The Town's 2021 Clean Up (Day) voucher program is currently happening. Residents can pick up a voucher to be redeemed for 1 trip in a car/SUV/truck or with a small trailer of up to 3 cubic yards of the approved general items for disposal now until November 10. Vouchers will be redeemed at the Larimer County Landfill from November 12-27. The Town is excited to be able to partner with Larimer County Landfill again this year for this program and serve our residents who contract with the Town for waste collection services. Public Works and Communications staff are working together on bringing the program back to the Public Works facility in the future and partnering with Waste Connections per the RFP and contract.
- *Town Participation in Trick or Treat Street* – Town Staff participated in this year's Trick or Treat Street hosted by the JDDA. This was a great opportunity for the Town to continue to get involved in community events and provide an opportunity to answer resident questions. Town staff handed out candy, and to those interested, the Johnstown Recycles magnets.
- *Johnstown Garbage and Recycling App with Waste Connections* – The WasteConnect app with Waste Connections now includes correct recycling dates for residents. This is a great tool for residents as they are able to see the schedule of their recycling day as well as use the "Look Up" tab to type in any items that they might need guidance on to recycle.
- *Solar Panel System RFP at Recreation Center* – The bid opening was delayed due to conflicts in the bidding and advertising documents regarding the bid opening date. The

date was adjusted to November 2, 2021. We expect to make a recommendations on November 15, 2021 to Council.

- *Broadband Presentation* – Magellan Advisors and our Owner's Representative – Peak Enterprises presented findings of the initial Financial Feasibility and Needs Assessment for Broadband Services in Johnstown. Ultimately representatives from each of the communities participating in the study supported the desire to move forward and perform a deeper dive of three firms that might provide services to our region.

Police Department

Training:

- *Legal Updates* – The entire department attended a legal updates training provided by the Larimer County District Attorney's Office. The officers were educated in the numerous changes to Colorado Statutes that had taken place in the State legislature and on recent case law, as it pertains to criminal investigations.

Community Policing, Outreach & Miscellaneous Items:

- *Civic Day* – The Johnstown Police Department participated in the 3rd grade Civic Day. 3rd grade students were given a tour of the police department and two of the police cars. The students also received stickers and baseball cards from the officers on duty.
- *Homecoming Parade* – Officers from the Johnstown Police Department led the Roosevelt High School homecoming parade.
- *New Code Enforcement Officer* – The Johnstown Police Department welcomed Officer Robert Richards onboard as the new code enforcement officer. Officer Richards is currently going through his field training program with Sergeant Williams and Sergeant Timme.

Public Works Department

Streets, Stormwater, Fleet & Parks

- *Streets* – Crews continue to pick-up trash totes for full service and recycling opt outs and delivering cans for new services. County Roads 3, 20C, 46, 44 and 42 were all graded. Staff helped with 3rd Grade Civic Day and showed students a variety of equipment including a street sweeper and snowplow. Internal training for pre-trip CDL inspections with hands on walk through was completed.
- *Facilities* – An exterminator was contacted for the Police Station.
- *Fleet* – Staff hosted internal training and walk throughs of equipment to prep for snow removal. They repaired chains and lights on snowplows and ordered first aid kits and fire extinguishers to have on hand. Staff replaced rear tires on the 2019 street pickup and the air bag for recall on 2009 water pickup as well as the dual on the freight liner.
- *Parks* – Staff removed all the flowerpots for the season in Downtown. New trees were planted in the Ace Hardware parking lot and in Clearview Park. Irrigation systems at the parks and cemetery are complete and the final grass cutting was finished for the season.

Water Plant & System

- *Water Source* – Staff turned the feed from Town Lake off due to reduced demand. Plant is running on Lonetree only with no issues and sufficient time to backwash with the surge tank.
- *Lone Tree Pump Station* – A check valve recently failed and a 3" PVC waterline break occurred from the ditch. The contractor installed a blind flange to allow station to run with two pumps until the new check valve is delivered. Staff was able to repair the 3" PVC break internally.
- *Fire Hydrants* – The damaged fire hydrant at 4700 Market Place was repaired. Fire hydrant flushing is scheduled to begin the week of October 25.

Wastewater Plants

- *Central WWTP* – Staff is experiencing new SCADA issues at the plant. Browns Hill sent someone to look at the SCADA antenna. We are currently dependent on the old system for operations and are working to transition to the new system permanently.
- Low Point WWTP – A reactor blower belt melted and smoked at Low Point causing a Fire Department visit. The belt was replaced and oil changed and is now operating smoothly. Staff also experienced an issue with the IP address and PLC. The blowers and decanters lost communication with logic. The plant was run manually until the Contractor arrived on site and reset the PLC/logic connection.

Development & Project Updates

- *Active Developments* – Johnstown Farms Public Improvements, Johnstown Heights Public Improvements, The Ridge 1 & 2 Public Improvements, TRR County Road 3 Improvements, TRR 12 Public Improvements, Mallard Ridge Phase 3 Grading, Revere Public Improvements, 2534 Site Plans.
- *I-25 Waterline Project* – Contractor is substantially complete with the Cathodic Protection work outstanding due to material sourcing challenges. Staff is compiling paperwork to prepare for the reimbursement request to CDOT per the contract agreement.
- *Johnstown Reservoir Dam Repair* – Staff is presenting dewatering, dredging and Minor Contract Revisions due to State review of design at the November 1 Council meeting. Reservoir is drained to the pump station inlet and the Colorado Department of Wildlife (CDW) has been contacted to assist in fish removal if the dewatering schedule aligns with CDW Staff availability.
- *South Water Tank* – Our Design Engineer is working through comments from the CDPHE with the Contractor. Working through quality assurance testing contracting for the project.
- *South Water Tank Distribution Pipeline* – The project bid closed October 14, 2021 and an award will be presented for consideration at the November 1 Council Meeting. Town sent the design and agreement review check and paperwork to the Hillsborough Ditch and are working through design elements with Weld County.
- *Central Interceptor Phase 1* – The contractor is finishing up the structural construction at the Lift Station and in the process of installing the fusible sewer pipe along the north side of SH60. Waiting on CDOT permit to complete bore crossing at SH60.

- *Central Interceptor Phase 2* – The Town received 100% drawings and are receiving final pricing for the GMP from the Contractor and cost comparison by the 3rd Party Independent Estimator by mid-November Anticipated Council date for Construction award is December 6.
- *Charlotte Street* – Staff and the design engineer discussed project changes and collected ROW landscaping information. Feedback focused on speeding which was unable to be addressed with the design due to the wide street and limiting use of bump outs.
- *Old Town* – Construction flyers were created by the Town and delivered by the Contractor to residents. Columbine St. is temporarily closed between 2nd St. and Charlotte St. to provide construction staging as DeFalco installs stormwater pipe from Columbine to Estes Ave.
- *N 2nd St Bridge Widening* – The Town sent the design and agreement review check and paperwork to the Hillsborough Ditch. The Contractor executed the contract with the Design Engineer and is collecting environmental, survey and utility potholing data.
- *HWY 60 Watermain Project* – Services are complete and finishing up the paperwork to prepare for the reimbursement request to CDOT as per the contract agreement.

Town of Johnstown

TOWN COUNCIL AGENDA COMMUNICATIONS

AGENDA DATE: November 1, 2021

SUBJECT: 2021 Johnstown Area Comprehensive Plan

ACTION PROPOSED: Public Hearing and Consideration of Resolution 2021-42 Approving the 2021 Johnstown Area Comprehensive Plan

ATTACHMENTS:
1. Resolution 2021-42
3. Final Draft of 2021 Johnstown Area Comprehensive Plan
4. PZC Staff Report (10/13/21)

PRESENTED BY: Kim Meyer, Planning & Development Director

AGENDA ITEM DESCRIPTION:

The proposed plan is a culmination of the efforts invested in 2020 and 2021 by the Steering Committee, Town Staff, and our consultant, Logan Simpson, to update the existing Johnstown Area Comprehensive Plan, 2006. Please see the attached staff Report presented to Planning & Zoning Commission (PZC) for their October 13, 2021, hearing.

This plan is utilized as a foundation and guiding policy document to inform future land use decisions of the Town.

Several iterations of the Discussion Draft of the plan update have been available via the town website for nearly a year, with substantial public input gathered and incorporated throughout the course of the public engagement efforts. No additional public comment has been received since this Final Draft was posted in mid-September 2021, nor was forthcoming at the PZC hearing.

The Commission unanimously approved the plan and recommends adoption by the Town Council.

LEGAL ADVICE:

The Town Attorney drafted the Resolution.

FINANCIAL ADVICE:

NA

RECOMMENDED ACTION:

Approve Resolution 2021-42 approving 2021 Johnstown Area Comprehensive Plan.

SUGGESTED MOTION:

To Approve:
I move to Approve Resolution 2021-42 approving 2021 Johnstown Area Comprehensive Plan.

ALTERNATE MOTIONS:

To Continue the Public Hearing to accommodate Requested Revisions:
I move to continue the public hearing on this issue to the regular Council meeting on [DATE], to allow an opportunity to incorporate the following changes:

a.

To Remand back to the Planning & Zoning Commission for Reconsideration and Revision:
Based on information presented in this hearing, I move to remand this proposed draft of the 2021 Johnstown Area Comprehensive Plan back to the Planning & Zoning Commission for further Reconsideration and Revision related to the following concerns:

a.

Reviewed and Approved for Presentation,

Town Manager

TOWN OF JOHNSTOWN, COLORADO
RESOLUTION NO. 2021-42

RESOLUTION APPROVING THE
2021 JOHNSTOWN AREA COMPREHENSIVE PLAN

WHEREAS, the Town of Johnstown, Colorado (the "Town") is a Colorado home rule municipality, duly organized and existing under the laws of the State of Colorado and the Town's Home Rule Charter; and

WHEREAS, the Town Council constitutes the legislative body of the Town with authority to set the policies of the Town; and

WHEREAS, pursuant to Section 2-186 of the Johnstown Municipal Code, and consistent with Section 31-23-206, C.R.S., the Town's Planning and Zoning Commission is authorized to prepare a master plan for the Town and, after a public hearing, refer such approved master plan to the Town Council for consideration; and

WHEREAS, in preparing the master plan, the Planning and Zoning Commission is required to make careful and comprehensive surveys and studies of present conditions and future growth of the Town with due regard to its relations to neighboring territory and to prepare the master plan with the general purpose of guiding and accomplishing a coordinated, adjusted and harmonious development of the Town and its environs in accordance with present and future needs, best promote health, safety, order, prosperity and general welfare as well as efficiency and economy in the process of development; and

WHEREAS, after conducting its due diligence and in compliance with the foregoing, on October 13, 2021, the Planning and Zoning Commission conducted a public hearing to consider a master plan for the Town, known as the *2021 Johnstown Area Comprehensive Plan*; and

WHEREAS, subsequent to the public hearing, the Planning and Zoning Commission approved the *2021 Johnstown Area Comprehensive Plan* and referred such plan to the Town Council; and

WHEREAS, on November 1, 2021, the Town Council conducted a public hearing to consider adoption of the *2021 Johnstown Area Comprehensive Plan*; and

WHEREAS, based on the recommendation of the Planning and Zoning Commission and the evidence presented at the public hearing, the Town Council desires to adopt the *2021 Johnstown Area Comprehensive Plan*; and

WHEREAS, the Town Council also desires to affirm that the Town's three-mile plan, as contemplated by Section 31-12-105(1)(e)(I), C.R.S., shall be incorporated in and updated by the *2021 Johnstown Area Comprehensive Plan*; and

WHEREAS, the Town Council finds that adoption of this Resolution is in the best interests of the Town.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF JOHNSTOWN, COLORADO, THAT:

Section 1. The Town Council hereby adopts the *2021 Johnstown Area Comprehensive Plan*, including all of the maps and other descriptive matters contained therein, which is attached hereto and incorporated herein by reference as Exhibit A, as the Town's master plan.

Section 2. The *2021 Johnstown Area Comprehensive Plan* shall supersede and replace the *2006 Johnstown Area Comprehensive Plan* and all amendments thereto.

Section 3. The Town's three-mile plan, as contemplated by Section 31-12-105(1)(e)(I), C.R.S., is hereby incorporated in and updated by the *2021 Johnstown Area Comprehensive Plan*.

Section 4. All Resolutions, or parts thereof, in conflict with this Resolution are hereby repealed, except that such repealer shall not repeal the repealer clauses of such Resolutions nor revive any Resolution thereby.

Section 5. The Town Clerk is hereby directed to send a certified and attested copy of the *2021 Johnstown Area Comprehensive Plan* to the Larimer County and Weld County Board of County Commissioners.

PASSED, SIGNED, APPROVED, AND ADOPTED THIS ___ day of November, 2021.

ATTEST:

By:_____
Diana Seele, Town Clerk

TOWN OF JOHNSTOWN, COLORADO

By:_____
Gary Lebsack, Mayor

2021 JOHNSTOWN AREA COMPREHENSIVE PLAN

November 2021

ACKNOWLEDGMENTS

COMMUNITY MEMBERS

Thanks for your continued dedication throughout the planning process. Your input was invaluable in the creation of this plan.

MAYOR AND COUNCIL MEMBERS

Mayor Gary Lebsack
Mayor Pro Tem Chad Young
Amy Tallent
Bill Stephens
Damien Berg
Jesse Molinar, Jr.
Kevin Lemasters (former member)
Troy Mellon

STEERING COMMITTEE/ PLANNING & ZONING COMMISSION

Alex Sauer, Rural/Ag Liaison
Amy Tallent, Town Council Liaison
Bruce Weber
David Puccetti
Isaiah Flores
Jason Grentz
Jessica Salo
Larry Storms
Lila Montez (former member)
Patricia Kiovsky (former member)
Paul Kingsolver (former member)
Scott Hayward

TOWN STAFF

Matt LeCerf, Town Manager
Kim Meyer, AICP, Planning & Development Director
Jamie Desrosier, Communications Manager

LOGAN SIMPSON DESIGN INC.

Bruce Meighen, Principal
Jennifer Gardner, Project Manager
Emily Morales, Assistant Project Manager
Melissa Ruth, Planner
Kristy Bruce, GIS Analyst
Maria Michieli-Best, Graphics

PLAN AT A GLANCE

THE PROCESS

This Plan was a community driven process that listened to and responded to those that live, work, and play in Johnstown; ultimately giving the community an opportunity to develop policies and programs that are shaped by them and for them.

COMMUNITY INPUT

19 STAKEHOLDER INTERVIEWS

1,238 ON-LINE QUESTIONNAIRE & QUICK POLL RESPONSES

1,200 FACEBOOK PARTICIPATION (SHARES, LIKES, COMMENTS, ETC.)

7 PLAN AUDITORS

7 STEERING COMMITTEE & **2** COUNCIL WORK SESSIONS

VIRTUAL TOWN HALL WITH **700** VIDEO VIEWS

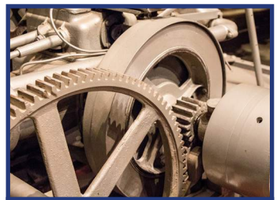
THEME IDENTIFICATION

DIVERSE (COMMUNITY, ECONOMY, & LAND USES)

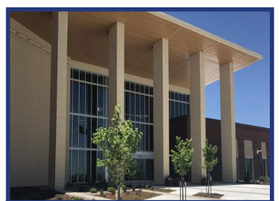
SMALL TOWN, FAMILY FRIENDLY

ALTERNATIVE & SAFE TRANSPORTATION MODES

PRESERVED HERITAGE, FARMLAND, & OPEN SPACE


FORWARD THINKING, ADAPTIVE

VIBRANT HISTORIC DOWNTOWN


CONNECTED (PEOPLE & PLACES)

IMPROVED OUTDOOR RECREATION

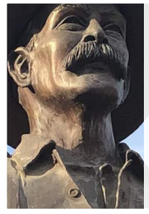
WHAT WE HEARD: OPPORTUNITIES TO MAKE OUR TOWN MORE...

RESILIENT	VIBRANT	CONNECTED
Maintain natural buffers around town. *Encourage a balance of land uses.* *Diversify housing stock.* *Preserve agricultural heritage.* *Enhance cultural experiences.* *Preserve historical architectural heritage.* *Work to support strong fire and school districts.* *Mitigate floods and natural hazards.*	*Needed services:* » *Grocery store/drug store* » *Light industrial/Employment* » *Big box commercial* » *Medical* *Attract more retail, restaurant, and entertainment options.* *Promote outdoor cafes, art galleries, hobby shops.* *Develop sustainable business opportunities.*	*Strong neighborhoods, connected to the larger community and to a wide range of recreational and wellness opportunities.* *Safe and accessible motorized and non-motorized transportation options* *Neighborhoods and businesses supported by reliable infrastructure, including broadband.* *Small town feeling of being welcome, safe, and engaged.* *Community activities and spaces that bring neighbors of all ages together.* *Relationship to surrounding natural lands and agricultural uses.*

GUIDING PRINCIPLE

Johnstown celebrates our small-town heritage built from strong agricultural roots. We promote dynamic approaches to innovation and new trends while maintaining our quality of life. Johnstown is a resilient, vibrant, and connected community that offers diverse and inclusive opportunities for generations of residents to live, work, and play.

THREE INTEGRAL THEMES



1. Johnstown is Resilient

Johnstown's culture, values, and mix of land uses, services, and natural amenities cultivate our high quality of life and adaptability as a resilient community.

2. Johnstown is Vibrant

Johnstown is a vibrant community that leverages our walkable, historic downtown, and traditional neighborhoods, with new innovative commercial and residential areas, offering diverse opportunities to enjoy and create lively and thriving business areas, neighborhoods, and civic spaces.

3. Johnstown is Connected

Johnstown provides a purposefully-designed and connected network of neighborhoods, transportation routes, events, services, and spaces to create a safe and inclusive environment for our diverse and growing community.

THE RESULT

Using the Guiding Principle and Integral Themes as a foundation for the Johnstown Area Comprehensive Plan, the community-informed opportunities were turned into the below overarching policies statements to direct the future of our town. As Johnstown continues to grow, it is important that residents, businesses owners, and governmental and non-governmental groups, among others, keep these policy statements present in their day-to-day work to ensure that conversations and actions contribute to making Johnstown a more resilient, vibrant, and connected community.

OVERARCHING POLICY STATEMENTS

WHERE WE LIVE

Where we live should be a safe and connected network of neighborhoods that offer all residents opportunities to live, work, and play in Johnstown.

WHERE WE WORK & SHOP

Where we work and shop should capitalize on our historic downtown, agricultural heritage, and strategic location along the I-25 to cultivate businesses that can offer diverse jobs and services —strengthening our community resilience and maintaining our vibrant community character.

WHERE WE PLAY

Where we play should incorporate natural and cultural values to develop and support year-round recreational opportunities that are inclusive of and accessible to all and that contribute to the health and wellbeing of our diverse and growing community.

HOW WE MOVE

How we move should rely on safe and inclusive multi-modal transportation options that connect residents and visitors with each other and to jobs, services, and recreation opportunities within and beyond town boundaries.

WHERE WE SERVE

How we serve should provide an efficient and consistent level of public services and amenities that are conducive to making our town resilient, vibrant, and connected.

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Available on Town Website:
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Appendix D: Phase 3 Community Involvement Summary

CHAPTER 1: INTRODUCTION

WHY THE PLAN UPDATE?

Much has changed since the Town's last Comprehensive Area Plan, adopted in 2006. As one of the fastest growing municipalities in the Front Range, Johnstown has grown from approximately 8,900 residents in 2006 to an estimated 18,000 in 2020. While prior developments were dominated by residential subdivisions near the Town's traditional core, more recent developments have been dominated by mixed-use, retail, and employment projects in the Town's northwest. This updated plan anticipates and accommodates future growth within the Town's Growth Management Area (GMA) while working to connect and harmonize the traditional and newer areas of the town.

The development and adoption of a Comprehensive Plan is mandated through Colorado Revised Statutes (C.R.S. 31-23-206) to be used as a long-range guiding documents that provide the policy framework for implementing regulatory tools like zoning, subdivision regulations, annexations, and updates to Town codes and standards. Colorado State Statute also stipulates that Comprehensive Plans must remain relevant. For this reason, the Johnstown Area Comprehensive Plan (the Plan) is intended to be flexible, adapting to changing conditions and unanticipated events. The Plan is recommended to be annually audited for progress, and reviewed and updated every five years. Minor modifications may occur in interim years whenever major demographic shifts or policy changes occur that would impact the accuracy and direction of the elements in this Plan.

WHILE COLORADO'S LAW IDENTIFIES COMPREHENSIVE PLANS AS ADVISORY ONLY,

Zoning and land use regulations are meant to be developed in accordance with the Comprehensive Plan. Proposed land use changes are reviewed for compliance with the future land use map and goals in this Plan.

WHO IS THIS COMPREHENSIVE PLAN FOR?

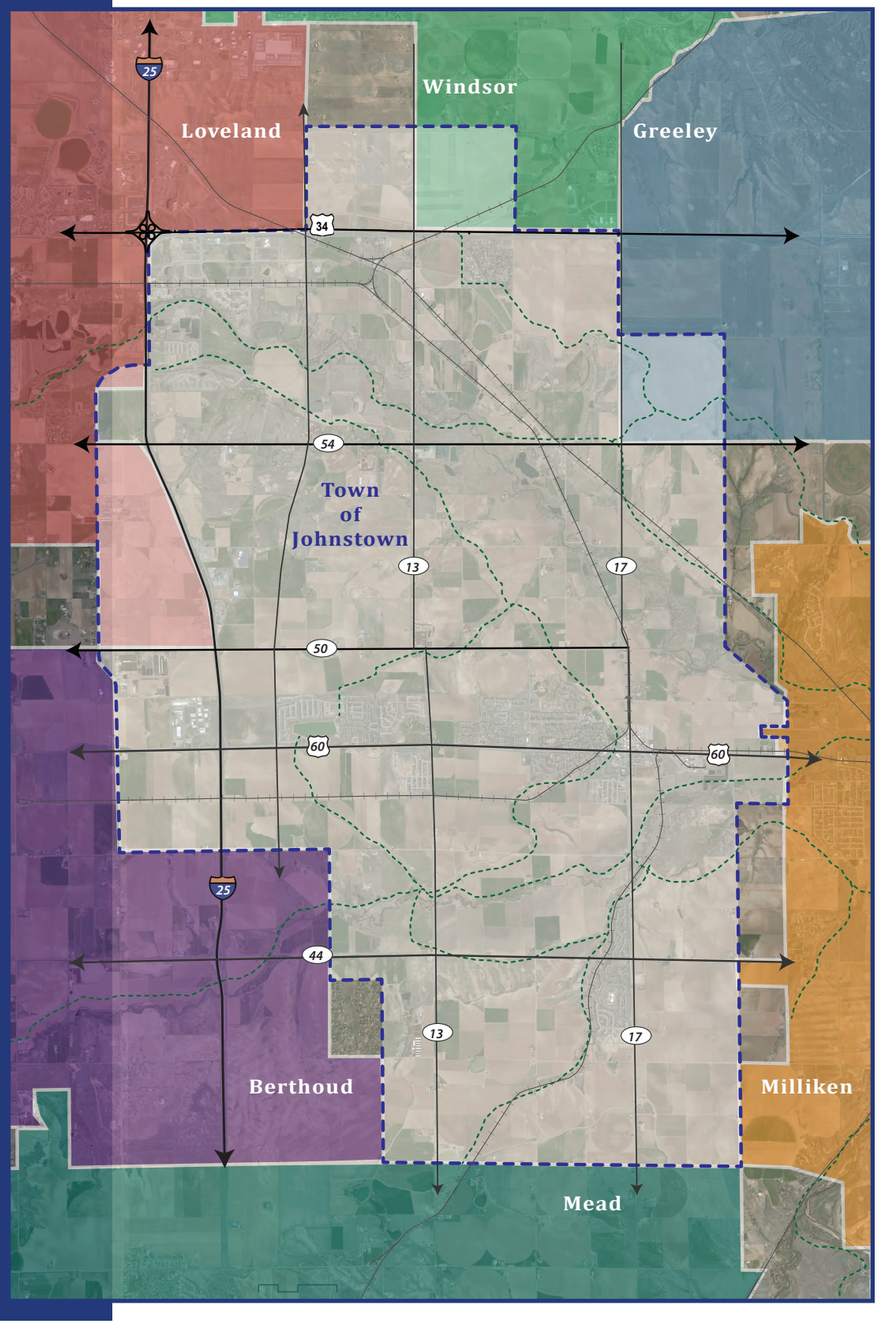
This Plan provides high-level direction for the future for the 48-square mile Growth Management Area (Map 1). This Plan is designed for Town leaders to guide and for community members to understand future development and redevelopment considerations for the Johnstown area from now into the next 20 years.

The Plan is designed for:

- Planning & Zoning Commission, Town Council, and Town staff to make decisions regarding:
  - Development applications
  - Provision and extension of community services and infrastructure
  - Regional coordination efforts with other jurisdictions and agencies
- Residents or potential buyers interested in the location of new streets, parks, trails, or community facilities and services; or how neighboring lands might develop.
- Business, property owners, or prospective developers interested in land use recommendations or development policies for their property.
- Adjacent jurisdictions interested in collaborating with the Town and managing their own growth and land uses.

The Plan can be used to inform updates and decisions based on Town plans for location and size of streets, parks and trails; improving our economic and activity centers; and guiding water, sewer, and other necessary infrastructure investments and improvements.

MAP 1. GROWTH MANAGEMENT AREAS

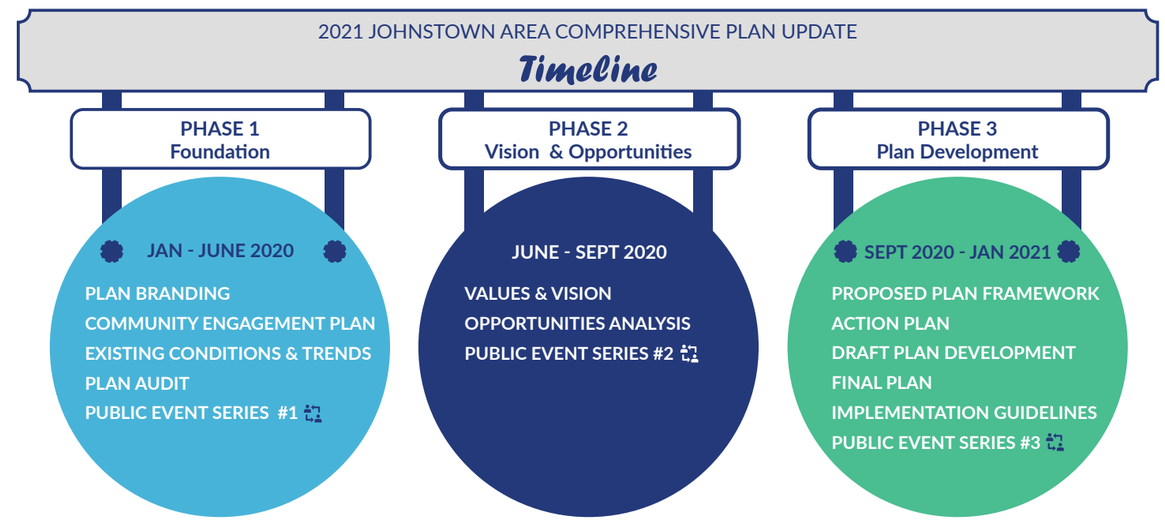


DEVELOPMENT OF THE PLAN

This Plan was developed with input from the community and the Planning & Zoning Commission, and will be adopted by Town Council. This work was done in three phases over a period of 13 months; from January 2020 to January 2021. As illustrated in Figure 1, all phases involved a public event series to listen to and respond to those that live, work, and play in the town. Community input served to substantiate existing policies and inform new ones, and to prioritize and direct implementable strategies. More importantly, it gave town residents an opportunity to develop policies and programs that are shaped by them and for them.

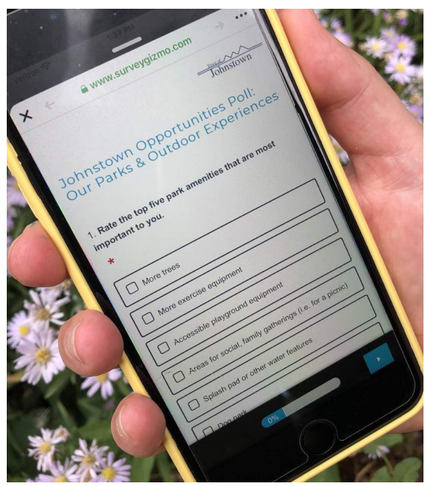
Outreach efforts were made possible thanks to contributions from key town staff who offered their invaluable support with day-to-day coordination, particularly as they navigated a heightened digital reality with the onset of the COVID-19 pandemic. Town staff supported the design and distribution of communication materials on the project's website and on the Town's social media platforms. They also assisted in distributing other tangible materials like yard signs and posters throughout the community.

FIGURE 1. PLAN TIMELINE



WHILE ENGAGEMENT EFFORTS TOOK PLACE PRIMARILY ON-LINE,

The community was notably adept in keeping connected and engaged. The Appendix includes a summary of the different planning phases, including the methods of and results from the community engagement activities.



Another group that played an instrumental role in supporting and informing the process, was the Steering Committee (SC). SC Members (below) were a sounding board during the planning process, ensuring that every step of the process was consistent with the character of the community. They accomplished this by being active participants throughout the planning process; providing thoughtful ideas and valuable feedback; weighing-in on decisions; collaborating with other groups, and evaluating and editing the final plan draft proposed to the Planning & Zoning Commission. The Town Council also had multiple opportunities to contribute to the planning process at different stages throughout the development of the Plan.

STEERING COMMITTEE MEMBERS

NAME	ORGANIZATION/ROLE
Alex Sauer	Rural/Ag Liaison
Amy Tallent	Town Council Liaison
Bruce Weber	Planning and Zoning Commission
Isaiah Flores	Planning and Zoning Commission
Jason Grentz	Planning and Zoning Commission
Larry Storms	Planning and Zoning Commission
Lila Montez	Planning and Zoning Commission
Patricia Kiovsky	Planning and Zoning Commission
Paul Kingsolver	Planning and Zoning Commission

ORGANIZATION OF THE PLAN

Chapter 2. Plan Foundation, highlights the elements that set the intention behind the Plan. Chapter 3. Johnstown Today, portrays a snapshot of existing conditions, accomplishments since the last Plan, desires from the community, and opportunities going forward. Chapter 4. Johnstown Tomorrow, presents the goals and strategies to achieve the Plan's guiding principle and integral themes. Chapter 5. Future Land Use, offers a conceptual framework for the location, density and intensity of future development. Lastly, Chapter 6. Implementation Plan, outlines the implementation strategies, anticipated timeliness, and resources to steer the future of Johnstown.

RELATIONSHIP TO OTHER PLANS

This Plan is connected to other local and regional planning efforts. Coordination with these efforts is important and could inform the development and refinement of other plans. The plans of Larimer and Weld Counties, the North Front Range Metropolitan Planning Organization, and adjacent municipalities, such as Berthoud, Greeley, Loveland, Mead, Milliken, and Windsor should be taken into account to achieve the desired future for the larger North Front Range region. Coordination with regional entities may focus on regional transportation, land use compatibility, open space and wildlife protection, resource conservation, provision of water and sewer, and education and economic development, to mention a few. The Town also coordinates with our local special districts, such as fire, school, and library districts to help plan their future system improvements.

To access the most recent version of the plans listed below and other resources, please visit the Town's Planning and Development Department website at www.johnstown.colorado.gov/planning.

- Zoning Map
- Various Design Guidelines
- Johnstown Transportation Master Plan
- Downtown Johnstown Improvement Master Plan
- Landscape Standards and Specifications
- Parks, Trails, Recreation and Open Space Master Plan

FIGURE 2. ORGANIZATION OF THE PLAN

CHAPTER 2:
PLAN FOUNDATION

This Plan is the result of extensive community input. Initial outreach efforts sought to capture the community's values (Figure 3), from which a series of ideas were distilled to develop the Plan's preliminary Guiding Principles and Integral Themes (previously shown on page III). Before these could be finalized, a work session was held with the Steering Committee to ensure alignment with the Town's Mission, Vision, and Values (MVV) (Figure 4). Together, these community-driven components served as the foundation for the plan.

FIGURE 3. COMMUNITY'S VALUES WORD CLOUD
Words submitted by the community.
The larger the font, the more times it was repeated.

FIGURE 4. TOWN OF JOHNSTOWN'S MVV

MISSION	VISION	VALUES
Enhancing the quality of life of our residents, businesses, and visitors through community-focused leadership.	Connecting community with opportunity.	Johnstown **CARES**: **C**ommunication **A**ccountability **R**espect **E**xcellence **S**tewardship

Five elements, along with their respective policies, goals, and strategies were further distilled from community input to support the Plan's Guiding Principle and Integral Themes. The interconnection of all these foundational pieces is illustrated on the Plan's Foundation graphic (Figure 5) on the next page.

FIGURE 5. PLAN'S FOUNDATION

COMMUNITY'S VALUES

TOWN'S MVV

PLAN'S GUIDING PRINCIPLE*

PLAN'S INTEGRAL THEMES*

**Plan's guiding principle and integral themes are described on page III.*

WHERE WE LIVE

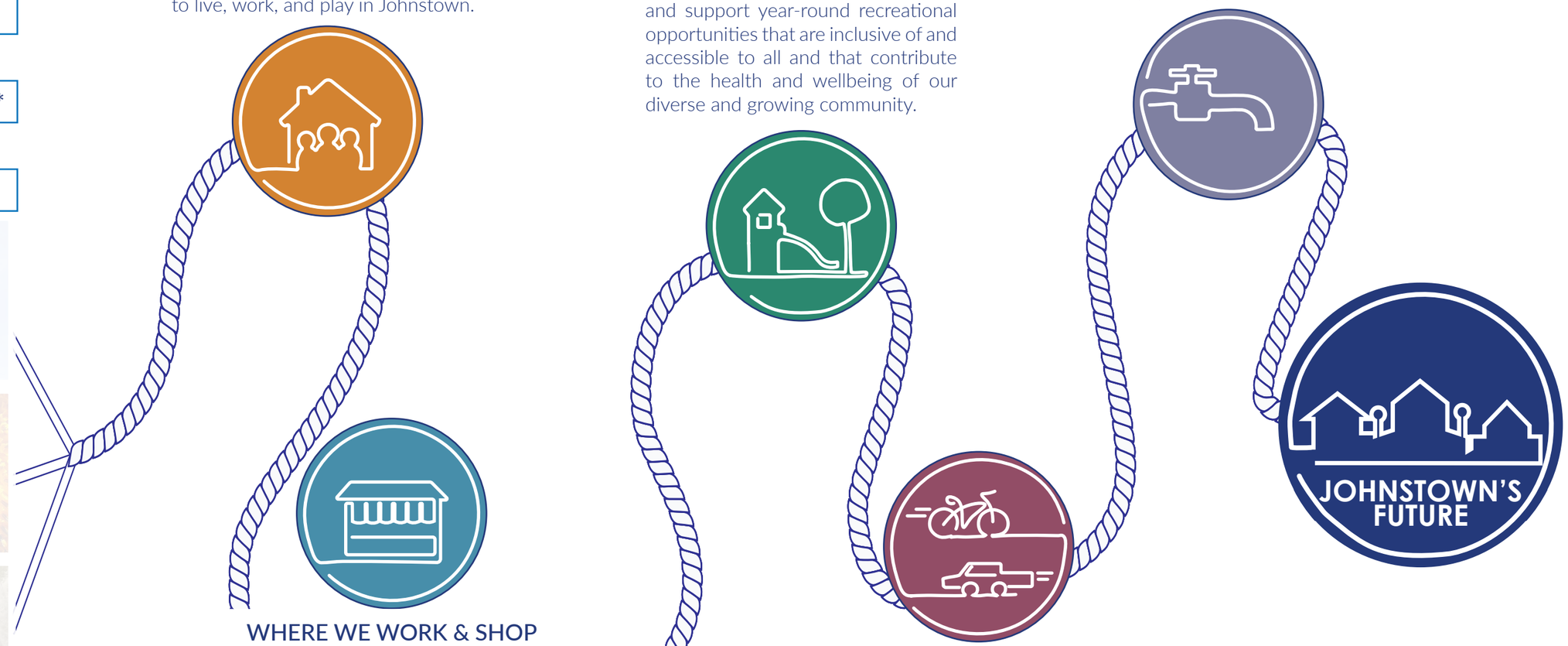
Where we live should be a safe and connected network of neighborhoods that offer all residents opportunities to live, work, and play in Johnstown.

WHERE WE PLAY

Where we play should incorporate natural and cultural values to develop and support year-round recreational opportunities that are inclusive of and accessible to all and that contribute to the health and wellbeing of our diverse and growing community.

HOW WE SERVE

How we serve should provide an efficient and consistent level of public services and amenities that are conducive to making our town resilient, vibrant, and connected.



WHERE WE WORK & SHOP

Where we work and shop should capitalize on our historic downtown, agricultural heritage, and strategic location along the I-25 to cultivate businesses that can offer diverse jobs and services —strengthening our community resilience and maintaining our vibrant community character.

HOW WE MOVE

How we move should rely on safe and inclusive multi-modal transportation options that connect residents and visitors with each other and to jobs, services, and recreation opportunities within and beyond town boundaries.

CHAPTER 3: JOHNSTOWN TODAY

OVERVIEW

This chapter presents a series of existing conditions "snapshots" to illustrate where the Johnstown community is today. The snapshots are based on the best and most recent available data from the Town of Johnstown, Weld and Larimer Counties, the Census, and other sources, including 'what we heard' from over 300 community submissions during the Plan's first phase.

POPULATION DEMOGRAPHICS

Johnstown's population and land area are split between Weld and Larimer counties, with most of the Town located in Weld County. Johnstown, like other Front Range communities, has experienced rapid population growth over the past decade; growing from a population of 10,096 in 2010 to an estimated 18,000 in 2020—a 78% increase. Future projections for Larimer and Weld Counties estimate a 2.5% annual growth rate from now into 2030 (Colorado State Demographer). This increase is likely to impact Johnstown due to its location and available land. As shown in Figure 6, Johnstown's largest age group (32%) is under 18 years, indicating that Johnstown is attractive to families.

Furthermore, as shown below, while Johnstown is primarily White (80%) there is also a substantial Hispanic community (15%). This is a larger Hispanic representation than Larimer County (12%), although lower than Weld County (29%) or Colorado State (21%) (ACS 5-Year Estimates, 2019).

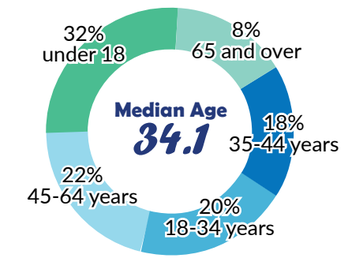


FIGURE 6. POPULATION BREAKDOWN BY AGE GROUP

(Source: ACS 5-Year Estimates, 2019)

TABLE 1. ETHNICITY

(Source: ACS 5-Year Estimates, 2019)

GROUP	PERCENT
White alone	80
Hispanic (of any race)	15
Asian alone	3
Two or more races	1
Black or African American alone	1
American Indian alone	0
Native Hawaii & other Pacific Islands alone	0
Some other race alone	0

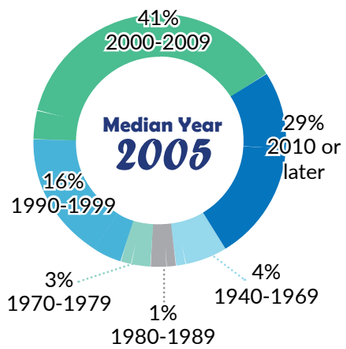


FIGURE 7. YEAR HOME BUILT

(Source: ACS, 5-Year Estimates, 2019)

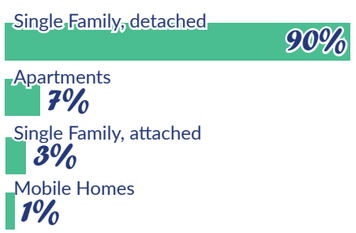


FIGURE 8. HOME TYPES

(Source: ACS, 5-Year Estimates, 2019)

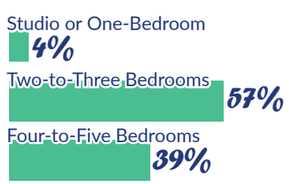


FIGURE 9. AVERAGE NUMBER OF BEDROOMS

(Source: ACS, 5-Year Estimates, 2019)

EXISTING CONDITIONS

Housing Demographics

Johnstown is a family-oriented community with 3,872 families, about 75% of town residents. Johnstown's average household size is 2.87 people—a little bigger than the state's average at 2.56.

As of 2019, Johnstown had a total of 5,329 housing units. The housing stock is fairly new, with nearly three-quarters of the homes built in 2000 or later.

The median property value in Johnstown is $283,400 and over 75% of the housing stock is valued between $200,000-$400,000.

Housing Types

As of 2019, 90% of housing units in Johnstown were single-family, detached homes on individual lots. Approximately 5% of housing was apartment-style housing, 3% were single-family, attached, and 1% were mobile homes. Over half of Johnstown's housing units are two and three-bedroom homes. A majority of the other homes are four-to-five bedrooms. Very few studio and one-bedroom units have been built. The predominant housing type in Johnstown is a two- or three-bedroom single-family detached home. These types of homes are generally occupied by families with children still in the house. However, the lack of smaller studio and one-bedroom units as well as apartment or attached units such as townhouses, creates a barrier for lower- or fixed-income and first-time home buyers looking to establish in Johnstown. It is noteworthy that residential development continues to grow at a relatively high rate, and newer high-density multifamily projects have been built in recent years near activity centers—with more than 700 new units added in the past two to three years.

Occupancy & Vacancy Rate

Vacancy status is an indicator of the housing market and is used to assess the demand for housing and identify housing turnover. Johnstown's homeowner vacancy rate is .8%, meaning that over 99% of homes are currently occupied. Additionally, Johnstown's owner-occupancy rate is high (89%). These numbers indicate a very stable housing situation for most residents, but also highlights the possibility that those new to Johnstown, seeking a different lifestyle (i.e., low maintenance living, newlywed/empty-nester), or seeking housing for the first time may have difficulty finding appropriate and affordable housing. This scenario would be even more difficult when looking for rental properties as the vacancy rate is 0%, meaning the whole rental stock is currently occupied.

Housing Affordability

One indicator of housing affordability is the ability of residents to purchase a home. Housing is considered affordable if it costs about one-third or less of what the people living in the area earn, also known as the Area Median Income (AMI). The median income for all cities across the country is defined each year by the U.S. Department of Housing and Urban Development (HUD). The 2018 AMI for Johnstown area is $90,240 for a three-person family (100% AMI). However, as shown on Table 3, households that make 50% or less of AMI, would only have access to 9% of Johnstown's housing stock.

TABLE 2. AFFORDABLE HOUSING STOCK BASED ON AMI

AMI Percentage	30%	50%	80%	100%
AMI	*$27,072*	*$45,120*	*$72,192*	*$90,240*
Max. Monthly Rent	*$377*	*$828*	*$1,505*	*$1,956*
Max. Affordable Home Price	*$81,802*	*$179,757*	*$326,688*	*$424,642*
Total Housing Stock Affordable	*About 1%*	*About 9%*	*About 65%*	*About 86%*

(Source: ACS, 2018)

Another indicator of housing affordability is the percentage of cost-burdened households. These are households "who pay more than 30% of their income for housing" and "may have difficulty affording necessities such as food, clothing, transportation, and medical care." (US Department of Housing and Urban Development). With a median monthly mortgage cost in Johnstown of $1,876 and a median monthly rent of $1,589, approximately 16% of owners and 29% of renters reported spending 30% or more of their income on housing in Johnstown.

In addition to the Johnstown Housing Authority that oversees a 24-unit elderly apartment complex, two other organizations that work in the Johnstown area to help residents find and maintain a place to live are NeighborToNeighbor (serving Larimer County) and the Greeley-Weld Housing Authority.

Ratio of Residential to Commercial

Johnstown has several existing commercial and mixed use districts: Downtown, near the I-25 and Highway 34 ("2534") interchange, and the I-25 interchange at Hwy 60. As seen on Map 2, there is a stark difference in the acreage occupied by commercial/industrial and residential spaces. Additional analysis of commercial and retail areas is provided in the next section, 'where we work & shop'.

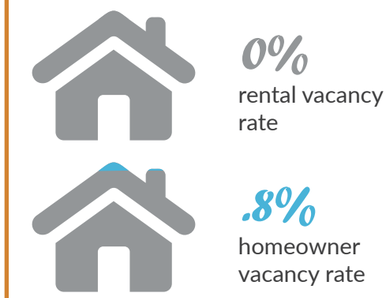


FIGURE 10. VACANCY RATES

(Source: ACS, 5-Year Estimates, 2019)

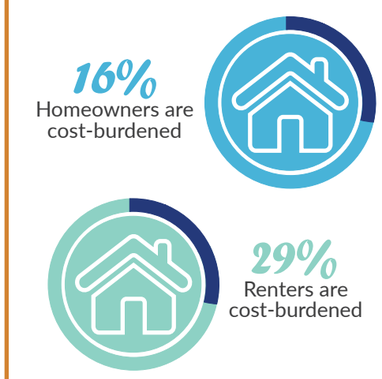


FIGURE 11. COST-BURDENED HOUSEHOLDS

(Source: ACS, 5-Year Estimates, 2019)

WHAT WE HEARD FROM THE COMMUNITY

"Having family friendly neighborhoods where kids can play outside and ride bikes."

"Having a King Soopers Marketplace or other grocery store would be nice."

"Add more retail, restaurants, and a grocery store near the center of town."

"More mixed-use neighborhoods with emphasis on walkability and diversity."

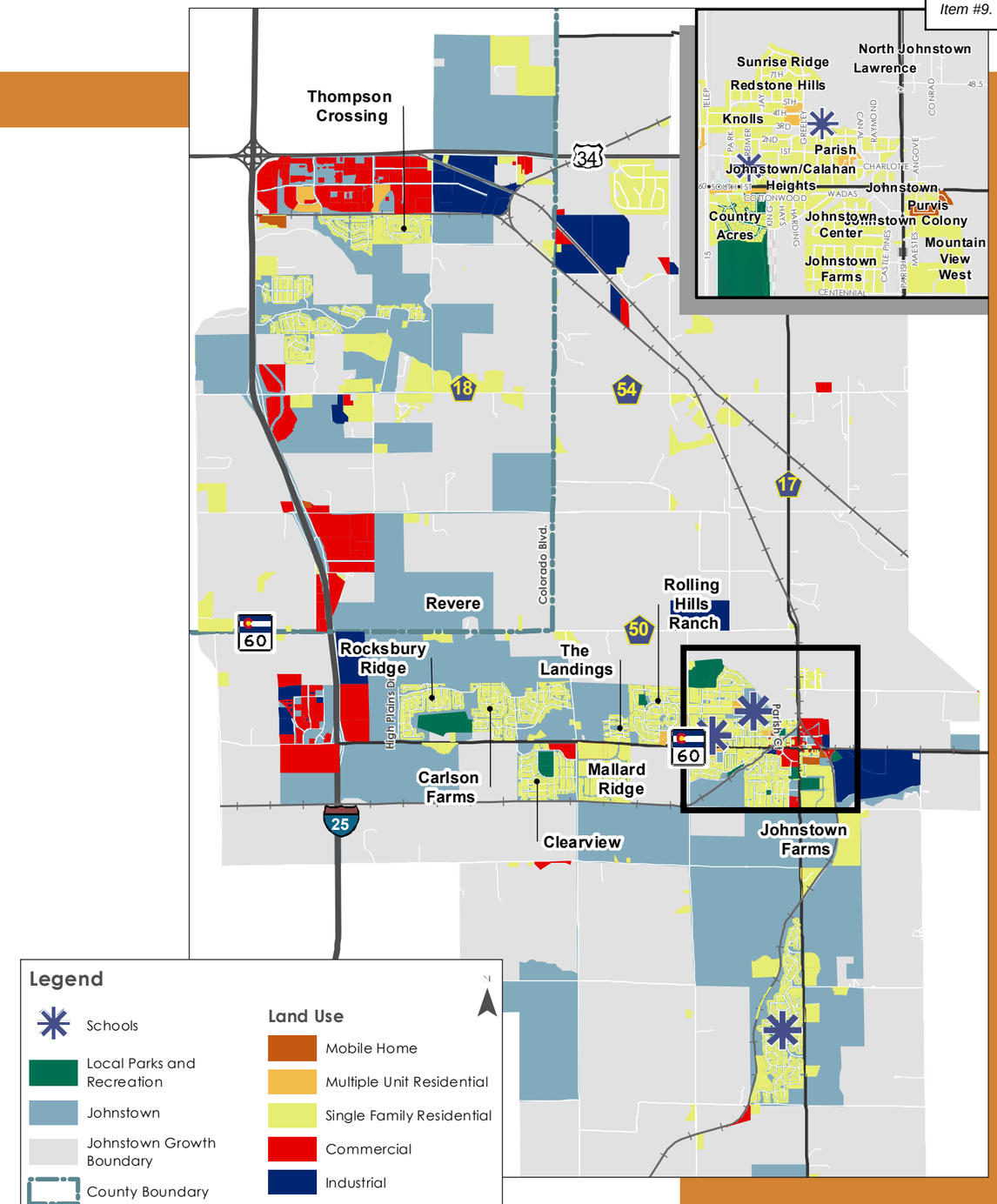
ACCOMPLISHMENTS SINCE THE LAST PLAN

As recommended in the 2006 Plan, different housing types have been encouraged to support the housing needs of diverse residents. In particular, the Town has seen an increase in high density multifamily housing in recent years, with more than 700 new units built near activity centers in the past two to three years.

Johnstown's overall housing stock is fairly new, with nearly three-quarters of the homes being built in the last twenty years. New residential neighborhoods continue to be built at a relatively high rate, and given the 2.5% annual growth rate for Larimer and Weld Counties from now into 2030, it can be expected that residential development pressures will continue to grow. As Johnstown responds to these pressures, it must ensure that the housing stock not only continues to respond to increasingly diverse housing needs, but also that it is balanced with employment and service opportunities; overall, making neighborhoods more resilient, vibrant, and connected.

OPPORTUNITIES MOVING FORWARD

- Diversify housing and neighborhoods to provide a wider variety of unit types (from apartment living to large estate lots) and accommodate different lifestyles and income levels.
- Ensure that adequate infrastructure and facilities, such as roads, parks/trails, services, water quality, and other utilities, are provided with new development.
- Promote the development of new homes (or provide incentives to retrofit old homes) for residents who want to age in place.
- Ensure new housing developments meet infrastructure standards.
- Improve connections within neighborhoods, to schools, to downtown, and other destinations.
- Balance residential with commercial land uses to promote local job opportunities as the town grows and develops.
- Support new residential developments to build more "complete" neighborhoods with housing near services, parks, transportation, and employment opportunities with neighborhood-scale activity/commercial centers.



MAP 2. NEIGHBORHOOD AREAS

(Source: Logan Simpson, 2020)

WHERE WE WORK & SHOP

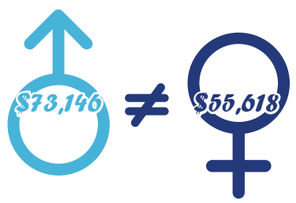


FIGURE 12. AVERAGE MALE/ FEMALE SALARIES IN COLORADO

(Source: datausa.io, 2019)

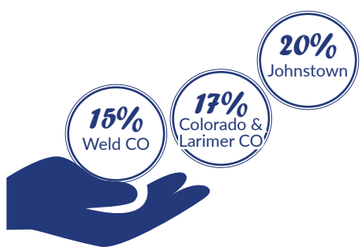


FIGURE 13. RETIREMENT INCOME COMPARISON

(Source: ACS, 5-Year Estimate, 2018)

FIGURE 14. TOP 3 INDUSTRIES EMPLOYING THE MOST RESIDENTS

(Source: Datausa.io, 2019)

EXISTING CONDITIONS

Employment Demographics

According to the 2019 American Community Survey (ACS), Johnstown has 9,565 residents aged 16 and over, 85% of which are in the labor force. Also, the town has a median per capita income of $39,265 and a median household income of $100,025, these numbers are significantly higher than Larimer and Weld Counties' per capita income (between $31-$37K) and median household incomes (between $71-$74K). While gender-specific data is not available for Johnstown, State-level data indicates that in 2019, full-time male employees in Colorado made 1.32 times more than female employees (Datausa.io, 2019). With 13% of town residents being seniors 65 and over, it is not surprising that the percentage of households with retirement income (20%) is higher than Weld and Larimer County, and Colorado as a whole (15-17%) (ACS, 2018).

Industries

The most common employment sectors for those who live in Johnstown are Retail Trade, Health Care & Social Assistance, and Manufacturing. The highest paying industries in Johnstown, by median earnings are Computer & Mathematical Occupations ($116,800); Installation, Maintenance, & Repair Occupations ($88,646); and Computer, Engineering, & Science Occupations ($81,111) (Datausa.io, 2019). ***Note:*** *Census data is tagged to a residential address*, not a work address.

Key local employers include the Weld RE-5J School District, Coca-Cola, FedEx, Canyon Bakehouse, and Scheels. As shown on Map 3 (page 19), the areas with the largest concentration of employees are: Downtown, Johnstown Plaza, and the Mountain View area.

Commuting Patterns of Primary Workers

Of the 6,232 Johnstown residents in the workforce (based on individuals holding a primary job -the highest paying job for a worker), only 420 work in Johnstown and the rest leave the town for work. Average commute time for those driving out of town for work is 30 min. This is 5-7 more minutes than the mean commute time for workers from all of Larimer and Weld counties, and across the state.

FIGURE 15. COMMUTING PATTERNS OF PRIMARY WORKERS

(Source: On the Map, 2018)

Local Businesses

A history of local entrepreneurship dates to Johnstown's first days when two important industries developed: a milk condensory and a unique year-round sugar factory that used "discard" molasses to produce high quality sugar. The Mohawk Milk Company, later the Carnation Milk Company, was built in 1913, and the Great Western Sugar Factory was built in 1925.

In 2017, Johnstown had 275 businesses or roughly one business per 52 residents (Table 4). These establishments range from home businesses to manufacturers and large national retailers. Several of these businesses in and around Johnstown are agriculture-related, including irrigation, feed, and supply retailers.

Commercial Land Uses

Commercial and employment development has grown rapidly over the past 10 years. In particular, the 2534 and Johnstown Plaza developments have provided the opportunity for a variety of retailers and businesses to capitalize on the desirable I-25/US 34 interchange and frontage. Also, Iron Horse provides additional land for large employers and manufacturing along US 34.

Areas that provide opportunities for additional commercial and employment uses include existing and rapidly-developing properties along the I-25 and US 34 corridors. The industrial area adjacent to downtown also houses several successful long-time businesses. The mix of uses and zoning in the historic downtown area and adjacent undeveloped lands offer attractive opportunities for commercial, employment, and mixed-use projects.

As shown on Map 2 (page 15), the land occupied by commercial (623 acres) and industrial (55 acres) areas reveals some imbalances when compared to residential areas (3,675 acres). Table 5 provides a more detailed comparison of residential to commercial ratios based on parcels tagged with a land use. As Johnstown continues to grow, it would be useful to guide development towards a desired ratio.

Oil & Gas

The oil and gas industry is a major economic driver for Weld County. While mineral extraction in the area does fluctuate, the industry has consistently been a major employer. While always changing, the Colorado Oil and Gas Conservation Commission (COGCC) showed 280 active wells in the Johnstown Growth Management Area as of August 2020. Horizontal drilling has allowed these wells to be consolidated into smaller footprints; however ongoing debates over safety and appropriate setbacks at the state level may impact development over time.

TABLE 3. SURROUNDING COMMUNITIES' RATIO OF EMPLOYER BUSINESSES TO RESIDENTS

MUNICI-PALITY	RESI-DENTS	BUSI-NESSES	RATIO
Johnstown	***14,386***	***275***	***52***
Milliken	*6,362*	*129*	*49*
Windsor	*23,386*	*739*	*31*
Firestone	*12,282*	*197*	*62*
Mead	*4,315*	*124**	*35*

(Source: ACS Statistics for Employer Firms, 2017)

**Business directory used as Census data was not available.*

TABLE 4. INCORPORATED AREAS' RATIO OF RESIDENTIAL TO COMMERCIAL

	ACRES		
MUNICI-PALITY	RES.	COMM.	RATIO
Mead	*1,341*	*182*	*7.4: 1*
Milliken	*855*	*133*	*6.4:1*
Berthoud	*1,441*	*330*	*4.4:1*
Wellington	*1,126*	*281*	*4.0:1*
Fort Collins	*10,633*	*3,174*	*3.4: 1*
Windsor	*3,823*	*1,244*	*3.1:1*
Greeley	*6,678*	*2,285*	*2.9: 1*
Timnath	*1,232*	*475*	*2.6:1*
Johnstown	***1,307***	***585***	***2.2: 1***
Firestone	*1,237*	*601*	*2.1: 1*
Loveland	*6,120*	*3,235*	*1.9: 1*

(Source: Weld and Larimer County Assessor Parcels (tagged with a land use.), 2020)

WHAT WE HEARD FROM THE COMMUNITY

"Focus on sustainable industr[ies] and honor our agricultural heritage by being good stewards of the land."

"Encourage the establishment of more locally-owned restaurants, breweries and retailers."

"New commercial areas to build job opportunities and more diverse industry here so that families don't have to rely on jobs in nearby communities."

OPPORTUNITIES MOVING FORWARD

- Assess which industries to attract to existing and emerging commercial clusters to best support the community.
- Seek to balance larger, more intense commercial uses along the periphery of town and major corridors, while encouraging smaller, more local, "boutique" commercial uses in Downtown.
- Assess the desire and potential location for different industrial types (i.e. manufacturing end user goods) that may help promote local employment.
- Attract businesses and services to support senior residents.
- Identify ways to more holistically involve senior residents in community affairs.

Transporting Goods and Services

Johnstown's location adjacent to the I-25 and to a key Great Western Railroad (GWRR) interchange, gives the Town a strategic advantage for transporting goods and services across the region. More detailed information about Johnstown's regional transportation is found on pages 24-27 of this document.

ACCOMPLISHMENTS SINCE THE LAST PLAN

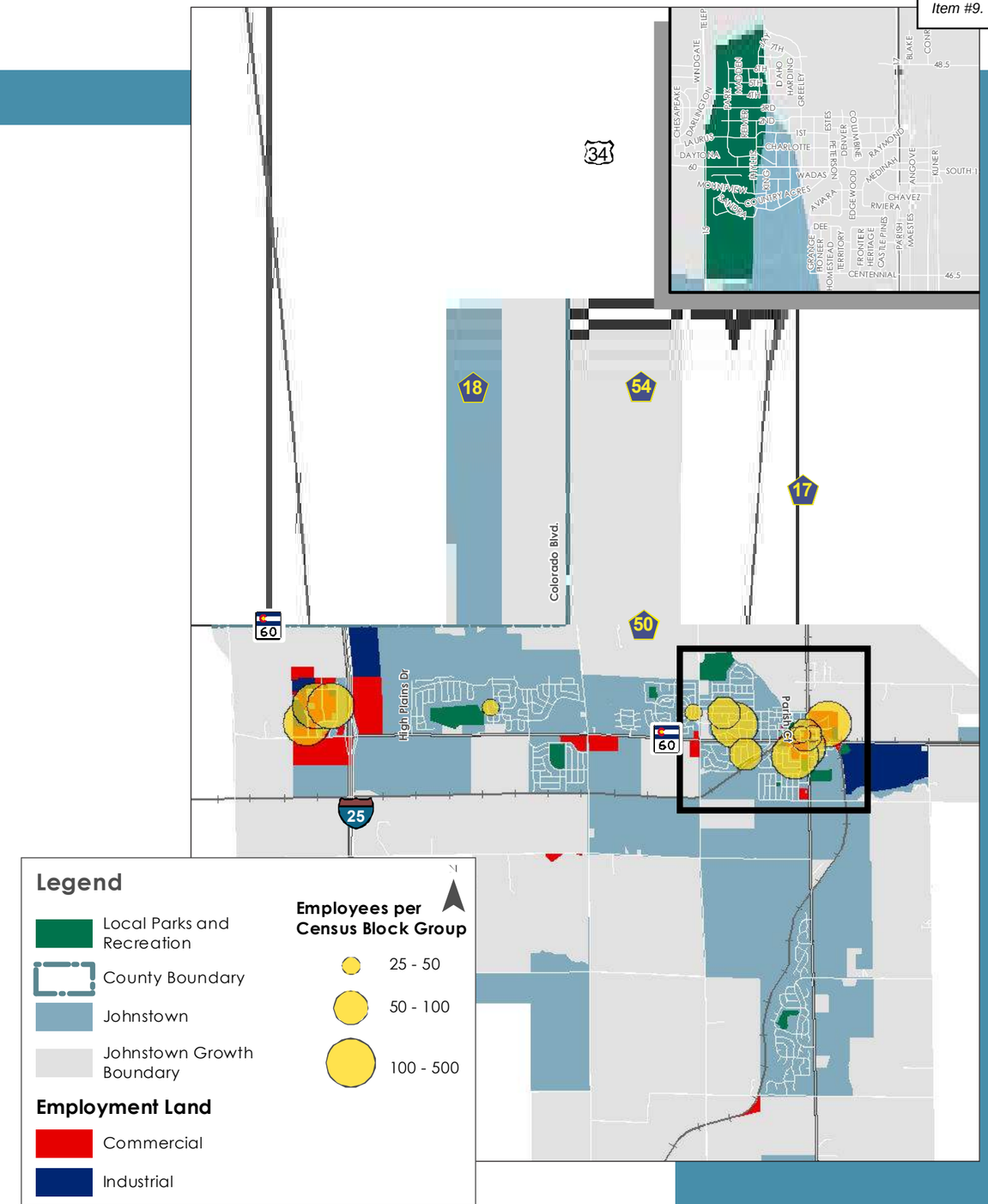
Consistent with the direction set in the 2006 Plan, the Town of Johnstown identified the 2534 area as a key location to capitalize on the market, transportation corridors, and the provision of utilities. The 2534/Johnstown Plaza project, located at the intersection of I-25, U.S. 34, and the GWRR, includes 600-acres of mixed-use development with a strong focus on big box commercial and multifamily residential uses. Its strategic location draws local and regional shoppers from Northern Colorado and beyond. In addition to its contribution to tax revenue, the 2534 area is appreciated by many in Johnstown as it allows for higher intensive uses on the periphery of town, while keeping low intensity and small scale uses in the Historic Downtown.

Despite this balance, growth and popularity of the 2534/Johnstown Plaza project brought some additional growth pressures to Johnstown's Historic Downtown. From additional entertainment alternatives, to parking, amenities, and character concerns, residents asked for improvements to their valued downtown. To address these and other concerns, the Downtown Improvements Master Plan was developed in 2007.

Many elements of the 2007 Downtown Plan have been implemented including a major shift from diagonal to parallel parking along Parish Ave. resulting in increased sidewalk space with a complementary palette of site furnishings. Additionally, gateway signage was established near the north entrance to the downtown area. The plan called for redevelopment of the old Town Hall location which was completed as well with the construction of a new Town Hall south of Hwy 60 along Parish Ave.

Another accomplishment was the 2016 establishment and 2020 update of an Economic Development Incentive Policy in "to sustain the fiscal health of the community, promote employment opportunities and enhance the quality of life in the Town." Based on long-term benefits that a business may bring to Johnstown, the Town has a list of potential incentives for interested business owners. To further this effort, the Town has budgeted for one staff member to be devoted to economic development activities to expand opportunities for new businesses and retain existing business in the Town.

The value that Johnstown places on its businesses was evident in relation to the 2020 global corona virus pandemic (SARS-CoV-2/COVID-19). The Town Council responded swiftly with substantial grant funding ($1 million) to help sustain local businesses.



MAP 3. EMPLOYMENT LAND USES

(Source: Logan Simpson, 2020)

HOW WE PLAY

FIGURE 16. NATURAL AREAS

(Source: Cotrex, Weld County Parcels, Comap (2020) and Johnstown Area Comprehensive Plan (2006)

6 Species of Mammals **(2 Threatened, 1 Endangered)**

5 Species of Birds **(1 Threatened)**

5 Species of Fish **(4 Threatened, 1 Endangered)**

4 Species of Flowering Plants **(2 Threatened, 1 Endangered)**

FIGURE 17. LARIMER AND WELD COUNTIES SPECIES

(Source: U.S. Fish and Wildlife Service, 2020)

EXISTING CONDITIONS

Parks & Open Spaces

Johnstown's eight public parks encompass 77 acres of public recreational land. This equates to 5.35 acres of public-dedicated recreational area per 1,000 residents. In addition, there are three private conservation easements in the GMA with the intent of maintaining natural areas. When comparing this level of service with other similar Colorado communities (Table 66) Johnstown's level is lower. However, Johnstown does have an expansive growth area conducive to increasing the level of service with more parks and open space as it develops.

TABLE 5. PARKS AND OPEN SPACE ACRES/1,000 RESIDENTS COMPARISON

MUNICIPALITY	PARKS	OPEN SPACE
Mead	*38.4*	*48.2*
Greeley	*7.0*	*5.7*
Firestone	*6.8*	*52.1*
Loveland	*6.4*	*56.8*
Windsor	*5.4*	*9.8*
Johnstown	***5.3***	***0***

(Source: Comap, 2020)

An important distinction to make is that while "parks" are generally maintained by a municipality, metro district, or HOA for public access, open space is often state land or under a conservation easement, and public access can be limited. In fact, this is the case for the Johnstown GMA's existing open spaces, which are under private conservation easements with no public access.

While some of Johnstown's more traditional residential areas provide playgrounds and natural areas, some are dedicated to and managed by home-owner associations (HOAs). Newer developments in recent years tend to have common areas managed and owned by metropolitan districts. Open areas, parks, and trails managed by these entities are considered public areas.

Farmlands and Vegetation

The overall Johnstown community has historically been an agricultural community, based primarily on sugar beets and wheat. These two crops continue to be common today, in addition to others like beans, onions, alfalfa, and sunflowers.

As shown on Map 4, most of the undeveloped areas within Johnstown's GMA, 48,636 acres, are in agricultural production. In 2020, in-town agricultural land decreased by approximately 325 acres (13% of total agriculture) due to new development construction.

Wildlife Corridors

Johnstown's river corridors and irrigation ditches extend for approximately 86 miles through the GMA. These important habitats provide food and shelter to a host of wildlife. Approximately 75% of species known or likely to occur in Colorado are dependent on wetland and riparian areas. Therefore, it is important to continue to protect these corridors, particularly when they make up only about 1.5% of the State's surface area (Colorado Division of Wildlife).

Another important habitat for wildlife species is farmlands. With approximately 4,461 acres of agricultural land within town limits and 19,700 acres in the overall GMA areas, many species depend on the food and shelter found in these areas, which are also often located along ditch corridors. (USDA Cropscape, 2019). With diminishing farmlands (6,500 acres less today than 10 years ago) and continued development pressures, it is important to address opportunities for conservation and protection of these lands for environmental benefits and to maintain the open and agriculturally-connected character of the town.

Trails

Today, within its GMA, Johnstown has 11 mile of existing public trails and 39 miles of proposed trails that will ultimately connect along the main river corridors—Loveland to Milliken and Berthoud to Milliken. Additional trails are envisioned for safe school access and along ditch corridors.

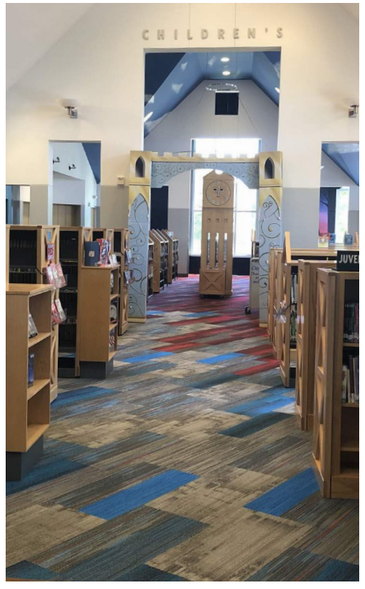
Indoor Recreation

As for indoor recreational facilities, Johnstown residents benefit from the new Johnstown Community YMCA, built in 2020. The 70,000-square-foot facility is owned by the Town and operated by the YMCA of Northern Colorado. The "Y" houses a full service gym and pool, as well as a preschool and other fitness and wellness programs. Also, it has a lighted multi-sport field for local events. The Community YMCA is a membership-based facility that strives to support all residents; they offer financial assistance to those unable to afford the full fee.

More indoor recreation options are offered by the Thompson Rivers Parks & Recreation District (TRPR) that maintain six facilities across the Johnstown-Milliken area.

Both the YMCA and the TRPR District host events and provide health and fitness programs, recreational sports, and activities for all ages, from toddlers to seniors.

Johnstown Community YMCA
(Source: Logan Simpson)



Glenn A. Jones, M.D. Memorial Library
(Source: Logan Simpson)

WHAT WE HEARD FROM THE COMMUNITY

"Outdoor life is necessary to the mental and physical well-being of people. Also, we are Colorado and people love to enjoy the scenery here and the weather. Let's make this an important part of the framework we are building."

"We need dog parks," and "parks that provide gathering and play spaces for all ages."

"Would love to have safe trails off of 60 that connect our neighborhoods and schools together."

"[Trails] need to be considered as a system"; "Alternative exercise equipment added to trails."

Other Indoor Community Facilities

Part of the High Plains Library District and supported by the Town, the Glenn A. Jones, M.D. Memorial Library is frequented by Johnstown's residents of all ages to borrow books, participate in interactive learning activities, or make use their print/copy services and meeting rooms. Also, Johnstown's older adults (55+) benefit from the many helpful services offered by the Johnstown Senior Center. Older adults visiting or calling the center can get assistance and information on housing, social activities, nutrition, recreation, transportation, referral services, and community programs. The center also serves nutritious meals once a week.

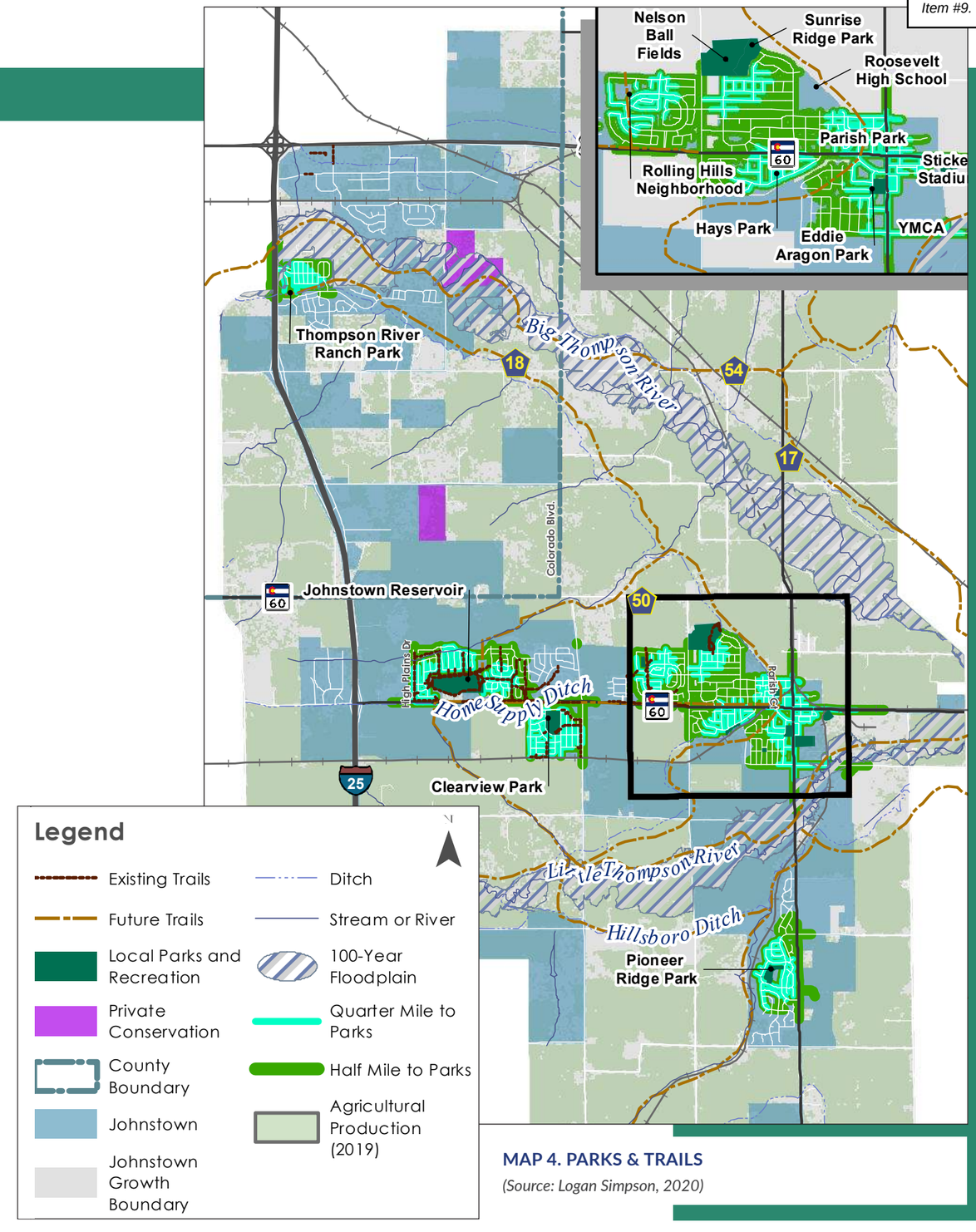
ACCOMPLISHMENTS SINCE THE LAST PLAN

In 2003, just three years before adopting the last Comprehensive Plan, Johnstown and Milliken collaborated to develop the Johnstown/Milliken Parks, Trails, Recreation and Open Space Master Plan with the intention to establish a road map for "nurturing the social and economic connection[s] by providing a safe, integrated physical connection via a trail system." The plan proposed a trail network along with definitions and standards for four trail types: arterial transportation corridor trail, river corridor trail, neighborhood trail, and discovery trail. While the joint plan has provided much direction and resulted in trail enhancements, Johnstown's residents find there are still many opportunities for improvements. Many comments received in the development of this Comprehensive Plan centered on the need for safe, adequate, and accessible trail connections.

Another Town accomplishment that has allowed Johnstown's residents 'to play' is the construction of the new, state-of-the-art community recreation center, the Johnstown Community YMCA, discussed above. Opened in May 2020, local YMCA offers fitness, wellness, sports, and aquatics programs for all ages, as well as camps and education programs from toddlers to teenagers.

OPPORTUNITIES MOVING FORWARD

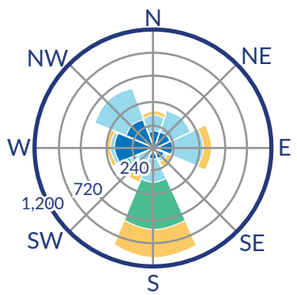
- Update the Parks Open Space and Trails Plan to identify needs for different types, sizes, and locations of parks and connections, and leverage new development and park dedication requirements. Part of this work could also involve working with the Colorado Division of Wildlife on understanding and protecting sensitive areas as well as ways to manage disruption to migration corridors, seasonal use areas, and keystone species from new development.
- Assess adding more direct trail connections between Downtown and the "2534" area.
- Explore ways to work with farmers and landowners to preserve the farming landscape and traditions valued by many in the community.



MAP 4. PARKS & TRAILS

(Source: Logan Simpson, 2020)

HOW WE MOVE



	Count	Share
Total primary jobs	4,242	100%
<10 miles	1,527	36%
10-24 miles	1,601	38%
25-50 miles	585	14%
> 50 mils	529	13%

FIGURE 18. COMMUTING DIRECTIONS

Source: On the Map, 2017

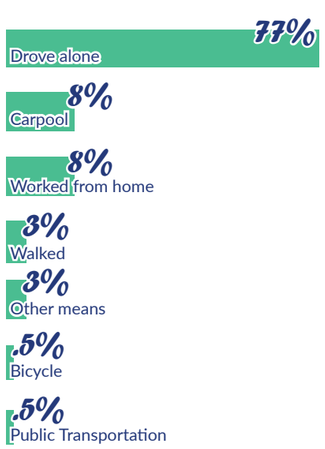


FIGURE 19. JOHNSTOWN'S RESIDENTS TRANSPORTATION TO WORK

(Source: ACS, 5-Year Estimate, 2019)

EXISTING CONDITIONS

Time at the wheel

While the mean travel time for Johnstown residents who commute to work is 30 minutes (1 hour /day), 13% of residents spend 1 hour or more at the wheel each direction (2 hours/day.)

With 5,623 residents leaving town for work and 3,824 non-residents coming into town for work (on the Map, 2017), our local and regional transportation networks see a lot of traffic on a weekly basis. This situation is exacerbated when 79% of Johnstown residents drive alone to work.

Regional Roadways

Johnstown's location is mostly east of I-25, surrounded by neighboring communities, and adjacent to a Great Western Railroad interchange. This positions many area roads as significant regional connections to other North Front Range communities and the Denver metropolitan area. These regional roadways include I-25, US 34, SH 56, SH 60, SH 257, and SH 402. In the past several years traffic along the I-25 corridor and along US 34 have increased significantly. New developments in northwest Colorado, have brought increased traffic volumes to US 34.

Walking and Biking

Much of the existing inventory of walking and bicycle paths is thanks to the vision of the Johnstown and Milliken communities who collaborated in 2003 to develop a Parks, Trails, Recreation and Open Space Master Plan. Additionally, the Town's street design standards specify the width and surface for sidewalks and bikeways depending on the street type (i.e. arterial, collector, local, and on residential or commercial areas) and whether they should be attached to the main road.

Walk Score (Walkscore.com) offers an insight into a area's walking and biking conditions. This tool, initially developed for the real estate industry, assesses walking based on the distance to amenities such as schools, parks, and grocery stores; and biking, based on features such as bike lanes and trails, hills, road connectivity, and destinations. While Johnstown's neighborhoods around the historic downtown score better than those around 2534 area (Figure 20), the Town can find ways to improve walking and biking for residents overall. Community input has indicated a desire for enhanced walking and biking connections between neighborhoods, to downtown, and to the larger region, including safe routes to school.

Other Trails

Johnstown currently has 11 miles of trails and 39 miles of proposed trails. More detailed information around trail conditions can be found in the previous section, 'how we play'.

Railroad

The Great Western Railroad passes through the center and north of Johnstown. It has been in operation in the area for over 100 years. It was originally built to serve the Great Western Sugar Company and was also used as passenger rail from Loveland to Johnstown. While today, it is only used for commercial purposes, several groups are working on passenger rail solutions to mitigate current commuting and traffic issues.

Other Modes of Transportation

Alternative means for individuals to get around and beyond Johnstown (other than by driving a car) are currently limited. Some of the available options are:

- The CDOT managed Bustang bus has stops in Fort Collins and Loveland—transporting passengers to Denver for $9-$10 one-way trips (2020).
- Neighboring Park & Ride options (also managed by CDOT) at the intersection of 1-25 and: US 34, SH 392, and SH 56.
- An appointment-based van service for elderly and handicapped residents and Transportation for the senior nutrition program, are both provided by the Weld County Area Agency on Aging.
- Additionally, there are three Park and Ride lots located along I-25 at interchanges (SH 56, SH 60, and SH 402) to facilitate car-pooling.

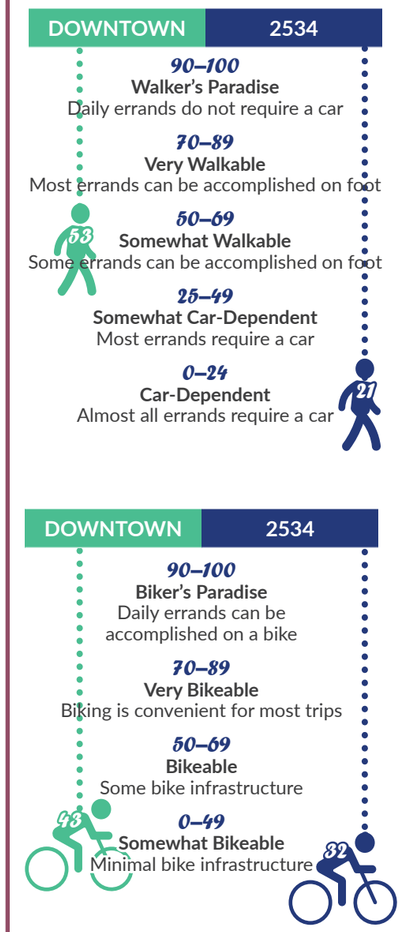


FIGURE 20. JOHNSTOWN WALKING (ABOVE) AND BIKING (BELOW) SCORES

(Source: Walkscore.com, 2019)

WHAT WE HEARD FROM THE COMMUNITY

"Speed bumps put in on heavily-trafficked areas with children." "Sidewalks should be a standard for common routes to schools."

"More convenient and direct access to 2534 and Centerra from Downtown Johnstown and the growing residences around Hwy 60 and County Rd 13."

"Have a local, small, daily bus that picks up on Parish or near the new rec center and takes you up near Scheels and vice versa."

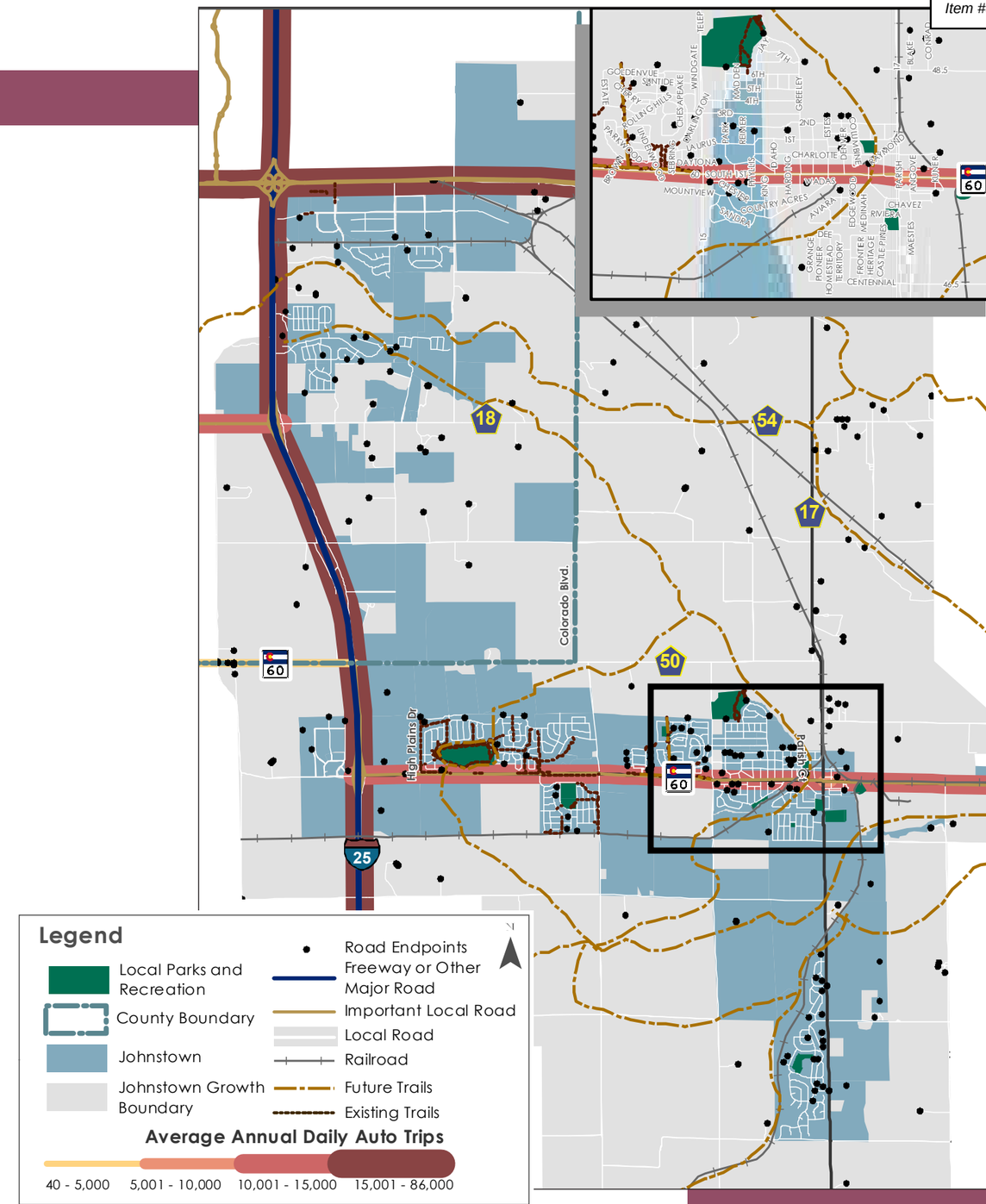
"Consider regional connectivity (Bustang, RTD, buses to Greeley, Fort Collins, Rail options, etc). Getting people out of cars is necessary."

ACCOMPLISHMENTS SINCE THE LAST PLAN

Soon after adopting the last Comprehensive Plan, the Town of Johnstown started working on its Transportation Master Plan. Adopted in 2008, the Plan included a series of short (2008-2013), mid (2014-2020), and long-range (2021-2035) projects addressing intersection improvements, widening sections of roadways, constructing the I-25 parallel arterials, paving of county roads, and completing missing roadway links and railroad crossings. As development occurs, roadway, walk, and trail improvements are constructed by developers to address development's impact on the transportation system.

OPPORTUNITIES MOVING FORWARD

- Residents of Johnstown currently rely primarily on cars for transportation (within and outside of town). However, Johnstown has the opportunity to provide additional multi-modal transportation services to encourage active transportation options and promote the community's health, equity, and wellbeing.
- Residents have indicated connectivity as a major issue. Whether by car, bike, foot, or transit, traveling is made difficult by a lack of straight connecting roads, railroad tracks, and dead-ends. Reviewing trails, roads, and overpass connections will be important to keeping a unified community character.
- Given the high traffic count on Hwy 60 and its proximity to neighborhoods and schools, improving traffic safety and walking and biking paths along this road should be a top priority for the Town.
- Two of the Town's guiding documents impacting transportation, the Street Design Standards (2004) and the Parks, Trails, Recreation and Open Space Master Plan (2003), were last updated almost 20 years ago. During the same time, the Town's population has more than doubled. The Town has an opportunity to update these two documents and ensure they not only address today's context and trends but also the resident's strong desire for enhanced connectivity.



MAP 5. TRANSPORTATION ROUTES AND ROAD CLASSIFICATIONS

(Source: Logan Simpson, 2020)

HOW WE SERVE

Taste of Johnstown, 2019

BBQ Day, 2019

National Night Out, 2018

(Source: Town of Johnstown Facebook Page)

EXISTING CONDITIONS

Schools

The 3,872 Johnstown families are currently served by two school districts: Weld County School District RE-5J (Johnstown-Milliken) and Thompson School District R2-J, which also serve Loveland, Fort Collins, Milliken, and Berthoud. In January 2021, the School Board approved replacements for its one high school and one of the two elementary schools located in Johnstown, expanding capacities and facilities for the Johnstown student body. The other high school is being tuned into a future middle school.

Senior Center

The Johnstown Senior Center is another group resource for the community. The center offers seniors the opportunity to join friends and meet others through programmed events, support groups, exercise classes, games, and meals. The center also serves as a community meeting space.

Community Events

Community events take place largely in the warmer, summer months, and are organized by the downtown business community. The Town of Johnstown supports these events and encourages these and other gatherings that bring the community together and strengthens social ties. Johnstown community events are well attended and supported by the local and neighboring communities.

Johnstown Historical Society

In 1998, the Town of Johnstown and the Johnstown Historical Society began a cooperative effort to establish Johnstown's first museum by purchasing the historic Parish House (710 Charlotte St.) from a private seller. The Parish House was the last house built by Town Founders Harvey and Mary Parish in 1914 and is an important piece of Johnstown's history. The house has been restored to preserve the structure's integrity and currently hosts public exhibits and programs throughout the year. While owned by the Town, the Parish House Museum is run by the Historical Society. There are other buildings of historic significance in Johnstown, similar to the Parish House; however, the Town does not yet have an historic buildings inventory nor regulations to celebrate and protect this legacy.

Fire Districts & Police

Johnstown has and regularly reviews an IGA with two fire districts: the Front Range Fire Rescue Protection District and the Loveland Fire Rescue Authority. Johnstown has a dedicated Police Department which serves all of Johnstown. Additionally, the Larimer and Weld County Sheriffs' Departments support the unincorporated areas around Johnstown. All emergency responders in the area have agreements for mutual aid and prioritize responses to those closest and most able to respond quickly to ensure the best service possible.

Natural Hazards

The Big Thompson River floodplain runs from the northwest portion of the Town, where the river intersects I-25, east and south through the northern half of Johnstown, just north of the Thompson River Ranch neighborhood, and exiting the GMA around CR 19 and CR 48 ½. The Little Thompson River corridor and floodplain traverse the southern portion of the Johnstown GMA, southwest (near the Hwy 56/I-25 interchange), heading east and north to CR 19 and just north of Centennial Dr. (CR 46½). Both of these river corridors experienced severe flooding in 2013, which led to new regulatory floodplain Mapping by FEMA effective in 2021. Development and main transportation routes in these areas may be at risk during major flooding events. Town ordinances, as well as FEMA standards, require any development in the floodplain to provide documented elevations that elevate structures above the 1% (100-year) base flood elevation. The Town participates in the National Flood Insurance Program (NFIP) which provides the ability for homeowners to obtain flood insurance, and works closely with state floodplain officials to ensure timely updates to information.

Emergency Preparedness & Hazard Mitigation

The Town participates in preparedness planning with both Larimer and Weld Counties and the fire districts, who offer excellent resources for decision makers and the public. Both counties maintain Hazard Mitigation Plans that include all the municipalities and identify potential hazards and mitigation measures. They also each operate an Emergency Operations Center, from which coordinated efforts and responses can be executed.

Internet & Broadband

Johnstown's broadband coverage of 89% falls on the lower end of service coverage when compared to neighboring communities (Figure 21). Moreover, of the connected households in Johnstown, 19% have access to only one, or no, wired internet providers. Wired internet, as opposed to wireless internet, is the fastest and most reliable option. Johnstown's internet speed through current service providers is reported to provide at least 25 Megabytes per second (mbps), with average speeds dramatically fluctuating over time. In Johnstown, like in all of Colorado, internet reliability is linked to affordability. According to Broadbandnow, Colorado is struggling to keep up with the rest of the U.S., only 3% of the state's residents have access to a standalone internet plan under $60 per month.

On a 2020 election, Town residents voted to opt-out of SB-152. At the moment, the Town has partnered with neighboring towns to actively pursue an assessment of regional broadband options.

EMERGENCY PLANNING RESOURCES INCLUDE

Emergency alert systems on the radio, phones, and television.

Outdoor Warning Systems, particularly to warn for tornados.

Individual family preparedness guidance on emergency kits, and family plans.

Specific plans for vulnerable communities.

Pre-planning for evacuation, pre-identified disaster shelters, and practicing for various scenarios.

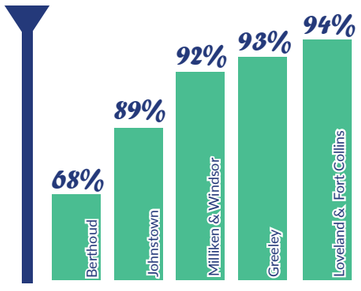


FIGURE 21. BROADBAND COVERAGE IN JOHNSTOWN AND NEIGHBORING COMMUNITIES

Source: Broadbandnow, 2020)

WHAT WE HEARD FROM THE COMMUNITY

"Enhance internet/ networking capabilities."

"The success of vehicle trip reduction during the pandemic has hinged on the accessibility to work from home with reliable internet connection."

"Water quality could be improved."

Regarding historical preservation, we "need surveys, codes, reviews of demos, and exterior alterations, etc."

"Encourage the use of electric vehicles with charging stations."

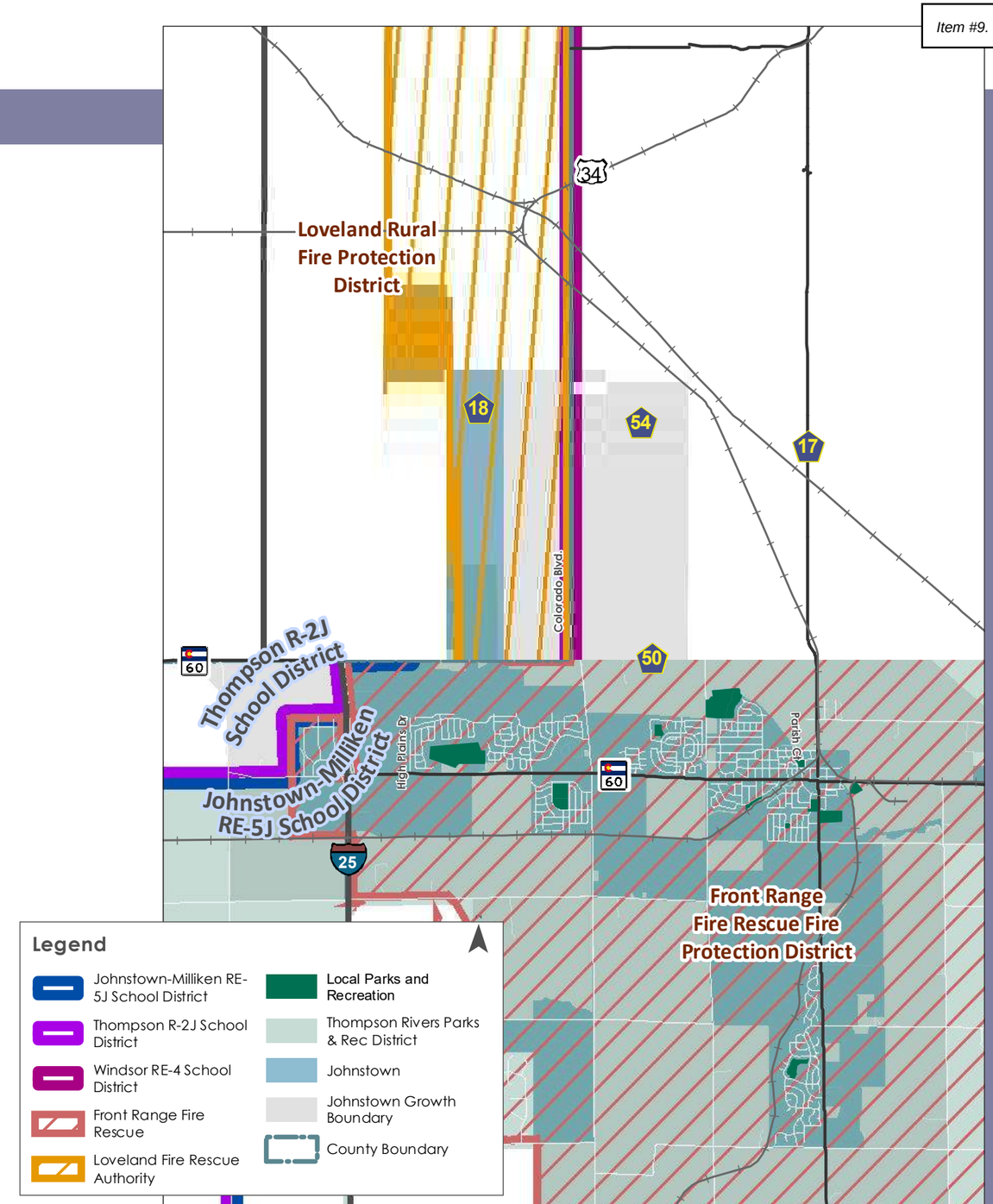
ACCOMPLISHMENTS SINCE THE LAST PLAN

Weld and Larimer Counties developed their own Multi-Jurisdictional Hazard Mitigation Plan in 2016 and are in the process of updating them in 2020. The two plans outline the risks and mitigation strategies for municipalities under their jurisdiction. The Weld County Emergency Preparedness Guide is a separate document and provides an overview of disaster information as well as detailed tips to help people get started with individual emergency plans during and after a disaster.

As for local efforts, Larimer County recently completed a new regulatory floodplain Mapping project for large sections of the Big Thompson River, following the Federal Emergency Management Agency's 2020 guidelines. The Town updates the Town ordinances, in conjunction with these updated studies, as needed.

OPPORTUNITIES MOVING FORWARD

- Develop regulations to honor and protect buildings of architectural and historical significance.
- Ensure that adequate infrastructure and facilities, such as roads, parks/ trails, services, water quality, and other utilities, are provided with new development.
- Discourage construction in and disturbance of the floodplain to protect wildlife and hydrological systems, and to minimize risk to life and property.
- Assess ways to improve internet connectivity for residents, not only enhancing business and school development but also overall communication for services to emergency response, making the town technologically competitive for decades to come.



MAP 6. COMMUNITY RESOURCES

(Source: Logan Simpson, 2020)

CHAPTER 4: JOHNSTOWN TOMORROW

OVERVIEW

This chapter is organized by the five Plan Elements. Each section highlights the policies, goals, and implementation strategies to steer the future of Johnstown.

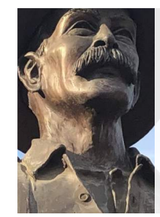
- **Policies:** These are five clear and concise policy statements, one for each element, that set the stage for the day-to-day operations of Town Leadership, Staff, and other decision makers.
- **Goals:** There are 12 goals spread across the five overarching policies. Goals illustrate the desired future ideals the Town strives to achieve.
- **Implementation Strategies:** There are 59 implementation strategies that outline the course of action to achieve the goals. Strategies are listed in more detail in Chapter 6: Implementation, where they are illustrated on a Implementation Table that includes the anticipated champions, partners, and resources, among other considerations needed to achieve the goals.

As explained in Chapter 2: Foundation, efforts were made to ensure that each and every policy, goal, and strategy is consistent with the Plan's Guiding Principle and Integral Themes, contributing to making Johnstown a more resilient, vibrant, and connected Town to live, work, and play.

GUIDING PRINCIPLE

Johnstown celebrates our small-town heritage built from strong agricultural roots. We promote dynamic approaches to innovation and new trends while maintaining our quality of life. Johnstown is a resilient, vibrant, and connected community that offers diverse and inclusive opportunities for generations of residents to live, work, and play.

THREE INTEGRAL THEMES



1. Johnstown is Resilient

Johnstown's culture, values, and mix of land uses, services, and natural amenities cultivate our high quality of life and adaptability as a resilient community.

2. Johnstown is Vibrant

Johnstown is a vibrant community that leverages our walkable, historic downtown, and traditional neighborhoods, with new innovative commercial and residential areas, offering diverse opportunities to enjoy and create lively and thriving business areas, neighborhoods, and civic spaces.

3. Johnstown is Connected

Johnstown provides a purposefully-designed and connected network of neighborhoods, transportation routes, events, services, and spaces to create a safe and inclusive environment for our diverse and growing community.

WHERE WE LIVE

Overarching Policy

Where We Live should be a safe and connected network of neighborhoods that offer all residents opportunities to live, work, and play in Johnstown.

Goals & Implementation Strategies

GOAL L1 | ENSURE NEIGHBORHOOD CHARACTER AND AMENITIES CONTRIBUTE TO THE HEALTH AND WELLBEING OF DIVERSE RESIDENTS.

L1.1. Update land use regulations to address balance of residential and non-residential development consistent with the Future Land Use Plan; to create complete neighborhoods within and surrounding activity centers; to include design guidelines and wireless design standards for high quality developments; and to promote creative and diverse housing types and neighborhoods.

L1.2. Require connectivity of street and trail networks into and beyond new development, ensuring connection opportunities for future development on adjacent undeveloped lands, and creating safe routes to schools.

L1.3. Create a measurable standard to require affordability/attainability, and universal design, in a certain percentage of housing units within new residential developments, or seek other techniques to address long term affordability in the community. Ensure updated code efforts include collaboration with local equitable housing advocates to identify and promote options and tools to create appropriate housing for senior and low-to-medium income households.

L1.4. Address long-term livability options for seniors by encouraging developments with universal design features and continuing care retirement communities (CCRCs). Additionally, by working with local housing advocates and entities to include options for low-to-medium income seniors and to promote a retrofit assistance program to keep seniors in their homes.

GOAL L2 | REVITALIZE AND MAINTAIN DOWNTOWN AS THE HEART OF THE COMMUNITY.

L2.1. Update Downtown Design Guidelines to reflect current community values and needs (e.g. enhanced streetscape, curbside management, and gathering places, among others); to promote the preservation, renovation, and adaptive reuse of historic structures; to review development requirements for downtown projects (parking, open space, landscaping, etc); and to provide clear regulatory guidance for decision-making.

L2.2. Update land use regulations to encourage mixed-use structures and higher density housing types in and adjacent to the Downtown Area.

L2.3. Seek to expand the extents of Downtown as development and redevelopment near the current core area is proposed, utilizing more urban design standards to encourage an active streetscape and mix of uses.

GOAL L3 | HONOR THE AGRICULTURAL HERITAGE OF THE JOHNSTOWN AREA.

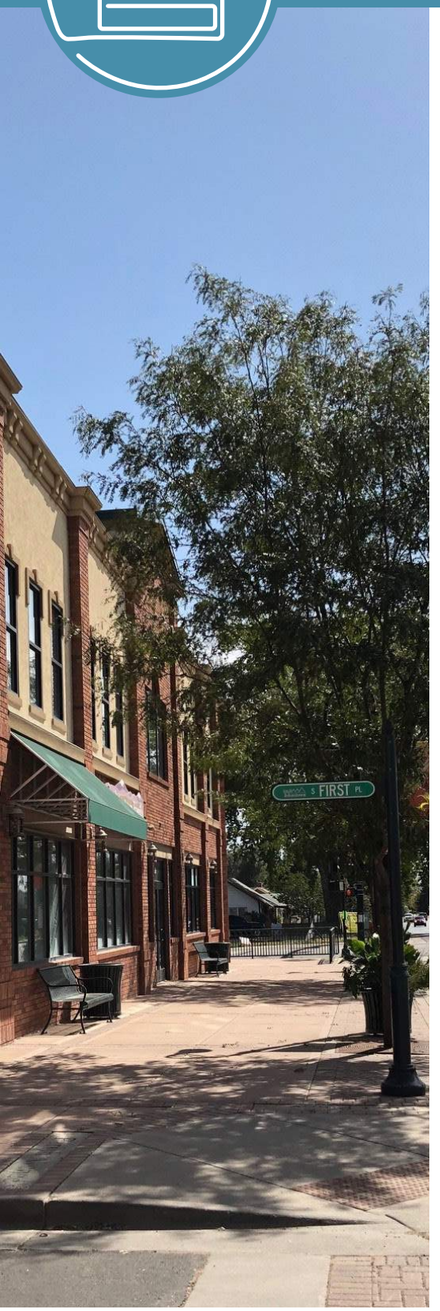
L3.1. Assess the potential for implementation of agricultural preservation and conservation programs (e.g. easements, Transfer of Development Rights (TDR), etc.).

L3.2. Update land use regulations to encourage development to have agricultural elements and themes (e.g. orchards, community gardens, re-purposing agricultural structures, etc.) into their design. Alongside this effort, collaborate with new and existing neighborhoods, special districts, and other community partners to implement agricultural elements and themes in neighborhoods and facilities.

L3.3. Establish relationships and collaborate with local agricultural producers, community partners and the business community in order to create new opportunities to connect local residents with local agricultural products and to develop an Agricultural Day to raise awareness of and build pride for local agriculture.

L3.4. Promote awareness about the presence of farm vehicles and enhance farm-related signage to encourage appropriate driving behavior in emerging areas of development with significant active agricultural lands.

WHERE WE WORK & SHOP



Overarching Policy

Where We Work and shop should capitalize on our historic downtown, agricultural heritage, and strategic location along the I-25 to cultivate businesses that can offer diverse jobs and services—strengthening our community resilience and maintaining our vibrant community character.

Goals & Implementation Strategies

GOAL W1 | STRENGTHEN EMPLOYMENT CENTERS TO DIVERSIFY THE TOWN'S ECONOMIC BASE AND PROVIDE JOBS.

W1.1. Collaborate interdepartmentally to create flexible regulations that accommodate evolving economic trends and industries, and attract new business interests and investment (e.g. renewable energy, business incubators, artists/makers spaces, synergistic businesses, etc.).

W1.2. Assess incentives and business programs to attract and retain industries that provide high quality jobs (i.e. salaries and benefits) as well as needed goods and services to the community.

Some ideas suggested by the community are:

- Businesses and services for diverse age groups and needs.
- Destination businesses (e.g. microbreweries and dine-in galleries among others) that contribute to social gathering and recreation spaces.
- Businesses and partners that can help diversify and enhance Downtown options for restaurants, shops, and entertainment.

W1.3. Highlight and align economic development programs and tools to include opportunities for local agricultural, tourism, and recreation industries. This effort should also include working with local groups to develop, establish, and maintain a repository of available resources for interested parties to engage in agritourism activities.

GOAL W2 | BALANCE MORE INTENSE COMMERCIAL USES ALONG MAJOR HIGHWAY CORRIDORS WHILE HAVING NEIGHBORHOOD-SCALE COMMERCIAL IN THE DOWNTOWN AND THROUGHOUT THE COMMUNITY TO ENSURE CONVENIENT ACCESS TO JOBS, GOODS, AND SERVICES FOR ALL RESIDENTS.

W2.1. Analyze the potential impact and utilization of new incentive areas to encourage development, redevelopment, and investment in key locations (i.e., URA, TIF, DDA), in collaboration with area businesses, owners, and other Town departments.

W2.2. Work with Downtown businesses, property owners, and residents to develop a strategy and design approach for Downtown that includes public improvements, encourages private investment, and favors home occupation businesses (that demonstrate that they will not have adverse effects on surrounding properties).

W2.3. Promote appropriate, mixed-density residential development in and adjacent to employment and commercial centers to enliven these areas, and provide options to live, play, and work in close proximity.

WHERE WE PLAY

Overarching Policy

Where We Play should incorporate natural and cultural values to develop and support year-round recreational opportunities that are inclusive of and accessible to all and that contribute to the health and wellbeing of our diverse and growing community.

Goals & Implementation Strategies

GOAL P1 | ENHANCE, MAINTAIN, AND INCREASE RECREATIONAL SPACES AND AMENITIES TO BE ENJOYED BY ALL AGES AND ABILITIES.

P1.1. Review and update the Parks, Recreation, Open Space and Trails Plan.

P1.2. Develop an ADA and community informed checklist for the review, maintenance, and update of Town parks and ensure priority projects are included in the Town's Capital Improvements Plan.

P1.3. Develop a Multi-Purpose Regional Park Master Plan.

P1.4. Establish standards for the consistent integration of thematic and educational elements in the design of recreational areas and trails. Some considerations suggested by the community are: having signs and markers that identify species, farms, floodplains, etc.

P1.5. Assess opportunities to take advantage of local water features (i.e. Big Thompson and Little Thompson Rivers and the Johnstown Reservoir) for diversifying recreation options —to provide fishing and non-motorized water sports, among other activities.

P1.6. Update land use regulations to incorporate pocket parks and natural areas in all commercial and employment centers to create public spaces and to offset environmental impacts, ensuring continuity of parks, trails, and open spaces wherever possible.

P1.7. Assess opportunities, partnerships, and funding to prioritize the acquisition and/or conservation of key open space and greenway corridors, including those shared with neighboring municipalities.

P1.8. Update land use regulations to facilitate improvements to Downtown public spaces that create inviting and flexible gathering options and that support year-round cultural and entertainment activities.

P1.9. Create an advisory group for community members to contribute to parks and recreation planning ensuring efforts are consistent with community desires.

WE PLAY EVERYWHERE...

While the list of goals and strategies for Where We Play may seem short in comparison to other elements, all other elements (where we live, work, and shop, and how we move and serve) address the importance of recreational spaces and amenities, including the connectivity of neighborhoods and trails, increasing safety for non-motorized travelers (pedestrians and bicyclists), and protecting natural assets, among others.

HOW WE MOVE

Overarching Policy

How We Move should rely on safe and inclusive multi-modal transportation options that connect residents and visitors with each other and to jobs, services, and recreation opportunities within and beyond town boundaries.

Goals & Implementation Strategies

GOAL M1 | PROVIDE AN EFFICIENT, SAFE, AND COMPREHENSIVE TRANSPORTATION SYSTEM INTEGRATING MOTORIZED AND NON-MOTORIZED TRANSPORTATION OPTIONS.

M1.1. Regularly update the Transportation Master Plan to reflect changing needs and trends and to include a bike and pedestrian circulation plan as well as the efficient integration of micromobility.

M1.2. Collaborate with railroad and irrigation ditch companies to enhance existing and create new pedestrian connections while honoring the historic character of the rail lines and the irrigation ditches.

M1.3. Conduct a comprehensive analysis and update of the Street Design Standards (consider Larimer County Urban Area Street Standards (LCUASS)); the Transportation Plan; and the Parks, Recreation, Open Space and Trails Plan to ensure updated strategies are coordinated with each other.

M1.4. Update land use regulations to include requirements for bike lanes and multi-modal trails to ensure connectivity with current and future development—within and adjacent to Town boundaries. Alongside this effort, analyze options to expand impact fees to support multi-modal transportation options.

M1.5. Collaborate with local agencies and school districts to develop a clear implementation plan to create safe routes for cyclists and pedestrians to local schools. Update development codes to require this connectivity with new or redevelopment.

M1.6. Update land use regulations to incentivize or require parking lots for high density and non-residential uses to incorporate EV charging stations.

GOAL M2 | ALIGN TRANSPORTATION AND ECONOMIC EFFORTS TO SUPPORT AND PROMOTE THE LOCAL ECONOMY.

M2.1. Conduct a feasibility study to assess opportunities and funding options for a local shuttle or micro-transit service to connect residents and visitors to local destinations (e.g. from Downtown to 2534 area and vice versa).

M2.2. Assess and update sign design standards (consider Tourist-Oriented Development signage—blue signs) for major corridors and activity centers to ensure high quality, cohesive, and compatible designs that promote local businesses and reduce the need for large signage.

GOAL M3 | BUILD AND STEWARD PARTNERSHIPS TO COLLABORATIVELY ADDRESS TRANSPORTATION IMPROVEMENTS OF REGIONAL IMPACT.

M3.1. Collaborate with regional agencies and neighboring communities to develop and maintain a transportation system that separates different modes of transportation (e.g. vehicular, bicycle, equestrian, pedestrian, etc.) and that enhance connectivity and safety of shared trails.

M3.2. Work locally and with adjacent jurisdictions to reduce trail gaps by prioritizing the construction of proposed trails and sidewalks that create needed connections for people to actively and safely move within and beyond town boundaries.

M3.3. Work with the community to improve seniors' transportation options (consider the NFRMPO One-Call One-Click Center).

M3.4. Identify partnerships and resources for joining existing and emerging North Front Range public transportation services and projects.

M3.5. Identify partnerships with joint funding that subsequently allow the Town to annex appropriate county roads into the Town and upgrade and realign as needed for the most efficient regional transportation system possible.

M3.6. Collaborate with CDOT to proactively and efficiently address traffic volumes, intersections, points of access, and overall safety on SH 60 and US 34.

M3.7. Leverage the I-25 designation as an Alternative Fuels Corridor to plan for the provision of EV infrastructure at interchanges.

M3.8. Proactively work with area railroad groups to coordinate safe and appropriate rail crossings for current and future transportation needs.

HOW WE SERVE

Overarching Policy

How we serve should provide an efficient and consistent level of public services and amenities that are conducive to making our town resilient, vibrant, and connected.

Goals & Implementation Strategies

GOAL S1 | DIRECT COMMUNITY GROWTH IN A MANNER THAT WILL PROVIDE FOR THE EFFICIENT AND EFFECTIVE EXTENSION OF PUBLIC SERVICES AND FACILITIES.

S1.1. Develop a measuring/monitoring and reporting system for Town infrastructure to ensure efficient upgrades and maintenance.

S1.2. Host regular meetings with school, fire, and parks districts to collaborate on upgrades to existing facilities and on securing locations for new facilities.

S1.3. Continue encouraging the community-scale development of health services for diverse age groups and needs (e.g. Day Care Centers for medically compromised persons).

S1.4. Create an implement a consistent design theme for new and existing Gateways.

GOAL S2 | ENSURE TOWN PLANNING EFFORTS AND INVESTMENTS ARE SUSTAINABLE AND CONTRIBUTE TO THE COMMUNITY'S QUALITY OF LIFE.

S2.1. Pursue more regional, state, and federal grant opportunities and seek grant writing assistance to capitalize on funding opportunities.

S2.2. Prioritize and seek out public and private partnerships and appropriately located and designed development proposals that maximize positive fiscal impacts and contribute to this Plan's guiding principle.

S2.3. Collaborate with neighboring towns to enhance connectivity with adjacent existing and future developments for the efficient development of utility infrastructure and emergency response.

S2.4. Identify and pursue local and regional projects for the improvement of public services, including alternative and multi-modal transportation options and other technological advancements (e.g. broadband, small cell connectivity, advanced metering, electric vehicles, etc.).

S2.5. Leverage public engagement opportunities to educate on, discuss, define, and prioritize sustainability goals. Once goals are established, ensure their alignment across all Town efforts. Along this effort, promote water conservation approaches and practices in the community.

S2.6. Assess community desire to update land use and building codes to require (or incentivize) development to meet updated quality, sustainability, and infrastructure standards (e.g. universal design, green and solar infrastructure, radon mitigation, etc.). Alongside this effort, investigate override of PUD and HOA documents to allow the use of and retrofits for environmentally friendly infrastructure.

S2.7. Collaborate with local and regional schools to create a civic leadership curriculum and internship opportunities for individuals of all ages to learn about and contribute to Town affairs and to cultivate a community of leaders. Alongside this effort, work with the community to create a community corps of volunteers that can support community efforts.

GOAL S3 | ENSURE ALL DEVELOPMENTS IS IN BALANCE WITH THE NATURAL ENVIRONMENT.

S3.1. Identify and geographically define natural hazards and sensitive areas and recommended setbacks or mitigation to more appropriately incorporate these areas into planning efforts (e.g. hazard mitigation, environmental conservation, recreation and access) and to reference them in development reviews.

S3.2. Update development standards to minimize disruption and restrict development within regulatory wetlands and the floodplain.

S3.3. Work with the community to facilitate the formation of an emergency planning group (including public works, emergency responders, and interested community members) to conduct regular meetings.

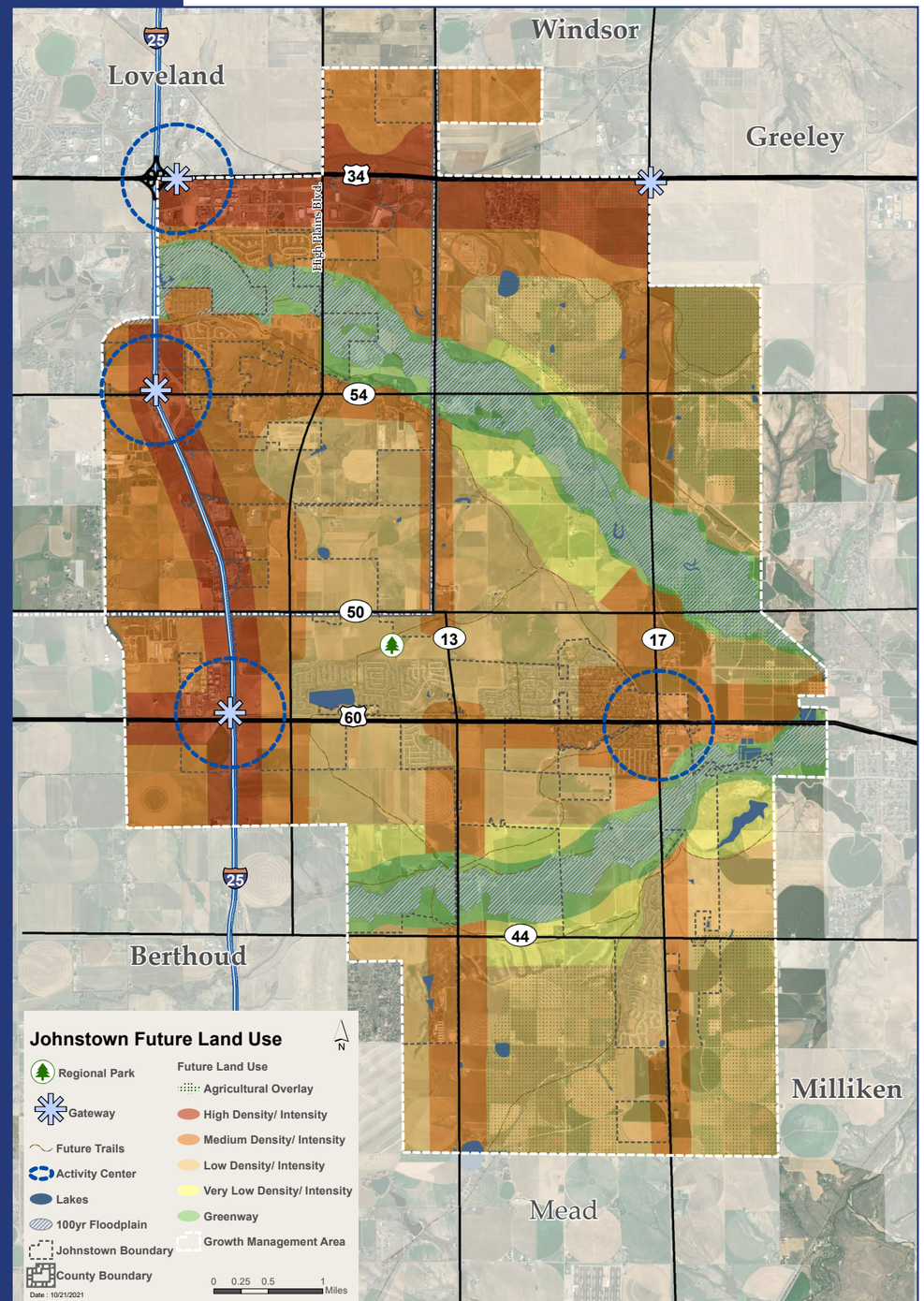
S3.4. Update development standards to include right-of-way landscaping requirements that use green infrastructure—to protect, restore, and mimic the natural water cycle.

S3.5. Assess opportunities to protect vital viewsheds along major corridors and gateways to highlight Johnstown's unique natural features (e.g. rivers, mountains, protected agricultural lands, etc.).

S3.6. Update current lighting code requirements and consider upgrading it to encourage Dark Sky approaches—for the efficient and safe utilization of outdoor lighting technologies with minimal disruption to the environment.

MAP 7. FUTURE LAND USE MAP

(Source: Logan Simpson, 2021)



CHAPTER 5: FUTURE LAND USE MAP

OVERVIEW

The Future Land Use (FLU) Map helps direct desired growth patterns by identifying the characteristics of land use categories and where those categories are distributed across the Town's 48-square mile growth management area. The FLU Map reflects the locational and spatial direction of the Comprehensive Plan's Goals and Strategies and is consistent with the integral themes ensuring all uses contribute to making Johnstown more vibrant, resilient, and connected. Also, the FLU Map takes into consideration the adjacency of uses; natural features and environmentally sensitive areas such as agricultural lands, greenways, rivers, and floodplains; and multi-modal transportation access and circulation, including the Town's gateway entrances and activity centers. When the Planning and Zoning Commission and Town Council are presented with land use decisions for residential and commercial development, subdivision of land, or zoning changes, the following future land use categories should be discussed and applied.

The Future Land Use of the adjacent communities of Greeley, Windsor, Milliken, Loveland, Berthoud, and Mead have been consulted to ensure consistency with regards to compatible land uses, transportation corridors, and resource protection. To ensure coordinated development in the **3-Mile Planning Area** surrounding Johnstown's proposed growth management area, intergovernmental agreements are in place with Loveland and Berthoud and a cooperative planning agreement is in place with Weld County.

Three-Mile Planning Area

The 3-Mile Area responds to a state requirement whereby municipalities must describe where and how they may annex land within three miles of its town boundaries. Johnstown's potential annexations are anticipated to occur between Town boundaries and the GMA, and fall short of the 3-mile boundary. This Comprehensive Plan shall satisfy State requirements for the "Three Mile Plan" and the "3- Mile Area" boundaries.

FUTURE LAND USE CATEGORIES & DESCRIPTIONS

The Future Land Use categories are meant to provide flexibility for future development, respond to economic changes, and reduce unnecessary plan amendments. Development trends are constantly changing and the once sought after suburb versus city style development is moving toward a greater mix of uses intended to distribute basic commercial and retail services among the neighborhoods.

The densities and intensities noted on the plan indicate a functional difference in how these areas might operate with relation to:

- compatible land uses
- traffic patterns and volumes
- size of the street network that might serve an area
- size and scale of buildings
- amount of activity and impacts generated by a use

Johnstown intends that these general areas of development will incorporate a mix of uses, integrating appropriate residential types and densities near or within areas of compatible commercial and employment to facilitate the opportunity to work, live, and play in the community and neighborhoods.

Additionally, with the COVID pandemic of 2020, the Town anticipates that many companies may reevaluate their space and employee needs, while homeowners may change their housing and lifestyle choices. Taking all of this into consideration, the Town decided to move away from land use categories in favor of defining densities and intensities assuming a mix of uses across the board.

The next pages describe the land use categories, general locations, intent, desired character, and other desired features. The land use categories are accompanied by character images and photos to illustrate the desired look and feel for the overall area and the building scale.

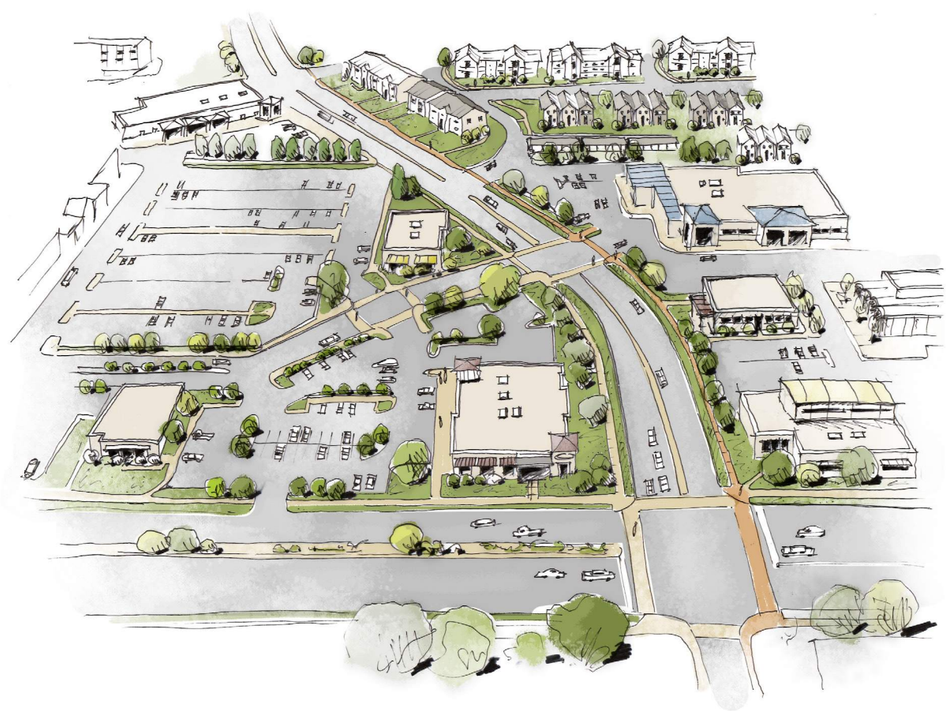
HIGH DENSITY/INTENSITY (HDI)

INTENT & DESIRED CHARACTER

A High Density/Intensity area (HDI) will be generally characterized by a high percentage of non-residential uses, with some residential possibly integrated into larger development areas. These HDI corridors and nodes will accommodate and experience larger volume of traffic and be located along busy arterial and highway corridors, and especially at interchanges and intersections.

These areas are intended to provide high-quality, high-visibility locations for retail, office, and employment activities, with some light industrial uses that can appropriately mitigate impacts and contribute to the employment base. These areas will have taller, larger-scale structures, a wider span of business hours, large parking areas, and a mix of uses that create economic synergies. Gathering spaces, entertainment venues, and walkable and enjoyable retail areas may be located adjacent to larger "big box" retailers. Town Gateways will also benefit from these HDI locations where most travelers may first be made aware that they are in Johnstown.

While HDI areas are largely served by vehicular transportation with speeds of 35 mph or more, these areas may also serve as ideal locations for transit facilities, and multi-modal trails that allow cyclists and pedestrians to safely connect to the services offered from neighboring residential areas. Residential may be integrated into mixed-use structures, or be provided as stand-alone complexes, whereby residents can easily access employment, entertainment, and shopping opportunities, as well as the nearby transportation network and any transit facilities.



RECOMMENDATIONS

Uses:

Mix of commercial, employment, and higher density residential uses to enliven the area.

Active and attractive streetscape along major corridors, with parking shared among multiple uses, and situated to the sides and rear of development to better accentuate the businesses and entryways.

Signage that is master planned for larger development for consistency and aesthetics.

Density Range:

No maximum.

Intensity:

Given range of uses, no specified floor-to-area ratio.

Approximate Land Use Balance:

80+% non-residential to a maximum of 20% residential.

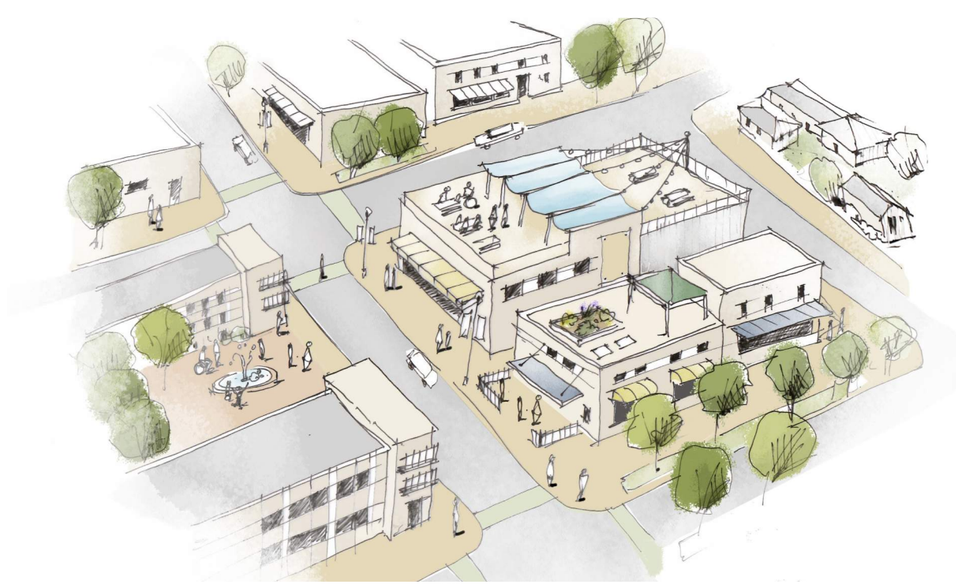
MEDIUM DENSITY/INTENSITY (MDI)

INTENT & DESIRED CHARACTER

A Medium Density/Intensity area (MDI) will generally be characterized by a more balanced, and wider-ranging mix of land uses—incorporating walk-up apartment buildings, townhomes, small lot (3,500-5,000 SF) attached and detached single-family housing, in close proximity to neighborhood-scale shopping, personal services, restaurants, small medical facilities, and facilities such as libraries and recreational centers. MDI areas may also occur along arterials and other major corridors, and may serve as the next layer away from the High Density/Intensity areas they may neighbor, as a transition to lower density neighborhoods. MDI's will offer complete neighborhoods with a diversity of shops and services, including schools and civic facilities, within walking or biking distance from residential areas; and offer good walking connections along with larger-scale multi-modal trails.

Commercial uses may be developed as stand-alone sites or be grouped in small 10 to 20-acre centers or campuses. Johnstown's Downtown would be ideal for this level of development. Reuse and redevelopment of existing structures may occur, with historic residences and structures changing to offices, boutiques, or personal services with alley-served parking. Commercial centers in an MDI will feature more walkability, perhaps offering covered arcades or awnings, pedestrian-scaled signage, shade trees and nice landscaping that helps slow traffic and break-up parking areas, and enjoyable outdoor spaces to gather. Rooftop and sidewalk patios, along with courtyard plazas offer patrons enjoyable places to meet and eat, gather and chat with friends.

Residential neighborhoods will provide a range of housing options and provide street and trail connections to adjacent neighborhoods. Housing will be encouraged to provide porches that extend closer to the sidewalks, and garages that are alley-loaded or setback to offer a safer, slower, and more interesting streetscape. Future considerations may include accessory dwelling or carriage house units to increase affordability and diversity. These are great neighborhoods to encourage and accommodate a diversity of lifestyles and income ranges, and allow active-agers to remain in Johnstown once larger family homes and yards may be less desirable.



RECOMMENDATIONS

Uses:

Mix of neighborhood-scaled commercial and civic areas with moderate density residential.

Attractive streetscape along major corridors, more suburban-style development, and walkable, pedestrian scale commercial areas that connect to adjacent neighborhoods.

Signage is pedestrian-scale along walking areas. Along streets, signs are monument-style or master-planned for larger development for consistency and aesthetics; large signs would serve as multi-tenant or development-scale monumentation and entry features.

Density Range:

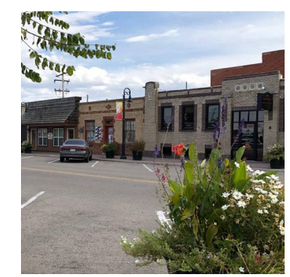
5-16 DU/Acre.

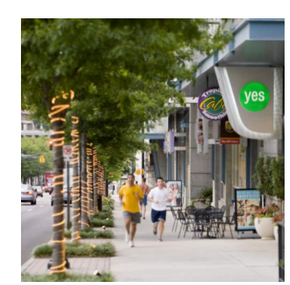
Intensity:

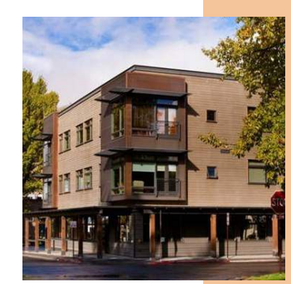
Max of 4 stories, 70% lot coverage,
20-foot setbacks from roadways with screened parking areas.

Approximate Land Use Balance:

30-40% non-residential to 60-70% residential uses.







LOW DENSITY/INTENSITY

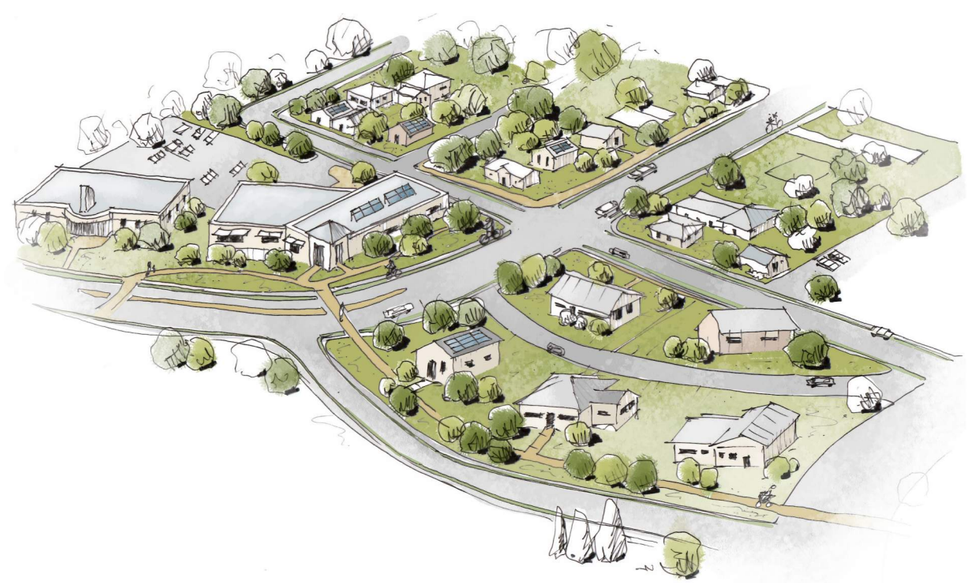
INTENT & DESIRED CHARACTER

A Low Density/Intensity area (LDI) will be generally characterized by a higher percentage of residential, predominantly lots for single-family detached homes, with some lower-density townhomes or duplex/patio homes. Commercial will be less prominent and focused on neighborhood-level services such as a convenience store, gas station, dance/karate studio, auto shop, salon, or restaurant, and civic uses (parks, library, schools).

Low Density/Intensity areas will occur along collector and local street corridors, and are likely to be adjacent to MDI and HDI areas, which serve to buffer LDIs from major street corridors and busier commercial areas. LDI's will strive to offer complete neighborhoods with easy access to neighborhood services, parks, schools, and be connected to adjacent neighborhoods and multi-modal corridors with trails and walks.

Commercial areas in LDIs will feature smaller building footprints (±3,000-30,000 SF), and be focused on providing smaller-scale retailers and services aimed at serving the immediate neighborhood and community, with more walkability and attractive landscaping that helps slow traffic and break-up parking areas, and enjoyable outdoor spaces to gather. Sidewalk patios and plazas offer patrons enjoyable places to meet and eat, gather and chat with neighbors. The commercial uses may occur in small commercial centers with multiple businesses, with cumulative commercial areas of around 100,000 SF.

Residential neighborhoods will provide multiple housing and lifestyle options within a more suburban setting. An LDI neighborhood may utilize winding internal streets and cul-de-sac configurations; perimeter fencing and landscaping for buffers, pocket parks and playgrounds within neighborhoods, connected to a trail system. These provide another great solution for integrating a range of lifestyles, incomes, and ages into a neighborhood.



RECOMMENDATIONS

Uses:

Streets and spaces support lower volumes of vehicles and people, with most homes and driveways accessing from local streets.

Attractive streetscape is presented along major corridors, with a more suburban-style development dominated by residential, but still allowing commercial uses and centers for small-scale uses that directly serve nearby neighborhoods and local residents.

Signage is pedestrian-scale along walking areas. Along streets, signs are monument-style or master-planned for commercial centers, and/or with adjacent neighborhoods, for consistency and aesthetics.

Density Range:

4-10 DU/Acre.

Intensity:

Maximum of 3 stories, 70% lot coverage, 20-foot setbacks from roadways with screened parking areas.

Approximate Land Use Balance:

15-20% non-residential to 80-85% residential uses.

VERY LOW DENSITY/INTENSITY

INTENT & DESIRED CHARACTER

Very Low Density/Intensity (VLDI) areas will typically develop adjacent to more natural corridors of floodplains, rivers, reservoirs, prime agriculture conservation, bluffs or highly-sloped area, and other natural features to better accommodate and allow the unique features to be integrated into the design of the development.

These neighborhoods and areas will be generally characterized by a mixture of larger-lot, estate-style residential, integrated with clusters of lower-density townhomes and duplex/patio homes to create additional housing opportunities, while conserving the natural features these VLDI areas are intended to integrate with and protect. Cluster-style development allows a mix of housing types, adjacent to expansive open spaces and natural areas intended to buffer these features from more intensely-developed areas.

The Town would expect to see low volume streets, open-style fencing, trails that connect through the neighborhood, and a more native/natural landscape and plant mix. VLDI's will rely on adjacent neighborhoods and corridors for access to services, parks, schools, and nearby services.

RECOMMENDATIONS

Uses:

Streets and spaces support low volumes of vehicles and people, with all homes and driveways accessing from local streets.

Significant open space and natural area conservation through the use of cluster development or specific building envelopes on estate lots.

Open rail fencing, natural grasses and landscape elements, protected natural features.

Density Range:

1-2 DU/Acre.

Intensity:

Maximum of 2 stories, building envelopes clarifying setbacks and intensity of development.

Land Use Balance:

100% residential uses

ACTIVITY CENTERS

INTENT & DESIRED CHARACTER

Activity centers have been identified as strategic areas that support local and regional transportation networks, living, employment, recreation, and services. These areas are intended to be mixed-use centers that make a highly efficient use of space by offering high-density residential areas supported by a diversity of shops and services and a vibrant public realm.

Activity Centers continue to develop at highway interchanges, Downtown, and generally in conformance with other characteristics of a High Density/Intensity area. While three of the four activity centers are located along the I-25 corridor making them convenient for motorized travelers, these centers should also connect to the Town's trail network, facilitating and encouraging active modes of transportation, and enhancing recreation opportunities for the community. These centers are ideal opportunities for the Town to consider future transit or other transportation services, and connections to nearby systems.

RECOMMENDATIONS

Uses: See High Density / Intensity category.

Density: No maximum.

Intensity: No specified floor-to-area ratio.

Approximate Land Use Balance: 85-90% non-residential to max 15% residential uses.

GATEWAYS

GENERAL LOCATION

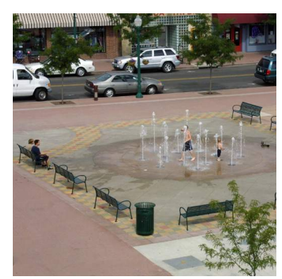
At key, high traffic entrance points.

INTENT & DESIRED CHARACTER

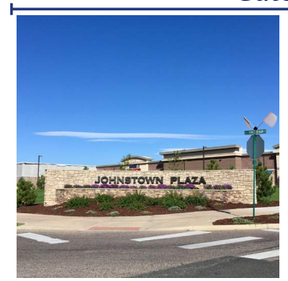
These are unique entrances into Town. Gateways are intended to define our community —both in terms of physical limits and identity, to welcome residents and visitors, and to slow traffic well outside Town limits.

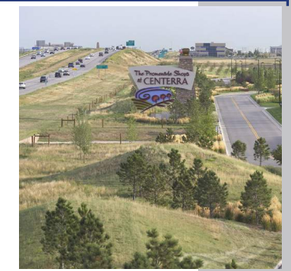
These gateways should be designed and landscaped to create cohesive, attractive, and celebratory landmarks that pay homage to Johnstown's character and values.

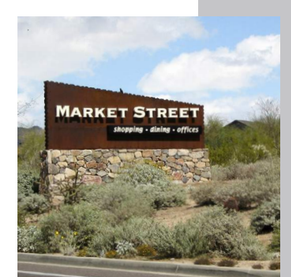
Activity Centers



Gateways







GREENWAY/FLOODPLAIN

INTENT & DESIRED CHARACTER

This designation is primarily intended for floodplain areas, as established by the adopted FIRM/FEMA maps and studies. These areas are natural areas for flooding—to capture and channel stormwater in large storm events, offer high habitat and ecosystem value, and should be avoided when considering areas for new development or redevelopment to protect life, property, and natural assets. These areas offer opportunities for conservation of natural areas and landscapes, as well as low impact recreational trails. Greenways may also be located adjacent to irrigation ditches, reservoirs, wetlands, and other ecologically-significant areas.

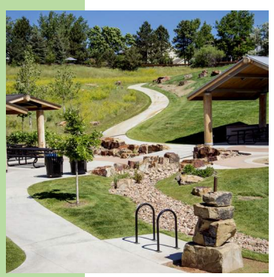
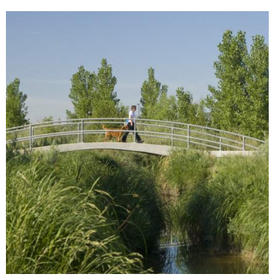
The greenway/floodplain areas include natural open space, trails, and river access. While sections of this land use may be on private land, efforts should be made to increase and maintain public access and to enhance connections for regional recreation and wildlife movement.

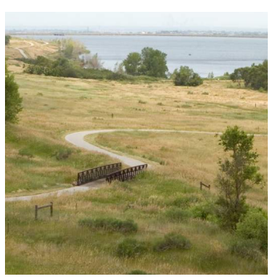
RECOMMENDATIONS

Uses: Passive recreation.

Density: N/A.

Intensity: N/A.



AGRICULTURE PRESERVATION OVERLAY

INTENT & DESIRED CHARACTER

This agriculture preservation overlay represents areas identified by the United States Department of Agriculture (USDA) as prime for agriculture. As a "Right to Farm County", Weld County recognizes the importance of maintaining productive agricultural lands to support the economies of scale required for agricultural operations. Johnstown concurs and welcomes the continued production of agricultural products within its Growth Management Area.

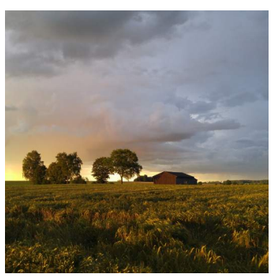
While many acres of Johnstown's prior surrounding agricultural lands have been converted to development, the Town is open to working with the community to preserve and conserve areas of ongoing production and prime agricultural lands. Innovative financing and land use tools exist and should be considered to assist those interested in maintaining their agricultural businesses and way of life.

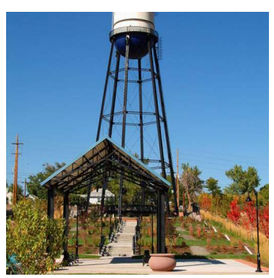
RECOMMENDATIONS

Uses: Large lot residential, ranch, farm, pastures, stables, and arenas. Special uses may be allowed for agri-tourism purposes (lodging, demonstrations, workshops, fairs, retail farm sales, special event facilities, etc.). Additional uses may be added to land use regulations that can enable the community to protect this resource while exploiting opportunities to extract the highest value for preserved agricultural lands.

Density: 2 DU/Acre

Intensity: Accessory/additional uses in harmony with and proportion to primary functioning agricultural use.





CHAPTER 6: IMPLEMENTATION

OVERVIEW

This chapter identifies a series of specific steps to be taken by the Town and community partners to achieve the Plan's Guiding Principle, Integral Themes, and its respective goals and implementation strategies.

IMPLEMENTATION STRATEGIES

Building on the 2006 Comprehensive Plan, the following implementation strategies were confirmed, refined, or expanded. Additionally, community input informed a series of opportunities that resulted in new strategies. These strategies are intended to influence future zoning and regulation changes, suggest potential financing tools, leverage partnerships, prioritize capital investments, and establish new programs and services. The resources and partnerships required for each implementation strategies should be considered in conjunction with annual budgeting and capital planning.

The implementation strategies presented in this document are dynamic and they may be adjusted over time based on availability of new or improved information, changing circumstances, resource availability, and anticipated effectiveness, so long as they remain consistent with the intent of the Comprehensive Plan.

Implementation strategies are outlined by the following characteristics:

Type

- **Regulatory Reform:** Some development regulations and standards will need to be updated to ensure consistency with the goals and objectives of the Comprehensive Plan.
- **Capital Projects:** These major infrastructure investments and funding partnerships are specifically relevant to the implementation of the Comprehensive Plan goals and objectives but should be considered in conjunction with other capital improvements and related plans to determine priorities, project efficiencies, and timing of capital improvement expenditures.
- **Plans and Studies:** Specific locations or initiatives that may require additional support and direction at a more detailed level than what is established in this Comprehensive Plan. These include site-specific development guidelines, master and/or subarea plans, and feasibility or funding studies.
- **Programs and resources:** These may include developing an educational program, marketing campaign, or a repository of resources to inform the public, encourage civic engagement, and overall, invite the community to contribute to the success of the Comprehensive Plan efforts. Programs and resources may also involve seeking or continuing collaborative efforts with local and regional organizations.

Champion & Partners

CHAMPION/PARTNERS	ACRONYM
Building	*Bldg.*
Public Works	*PW*
Planning & Development	*P&D*
Communications	*Comms.*
Economic Development	*ED*
Finance	*F*
Police	*P*
Town Clerk	*TC*
Town Manager	*TM*
Department of Local Affairs	*DOLA*
Colorado Department of Transportation	*CDOT*
Fire Districts	*FD*
School Districts	*SD*
Planning and Zoning Commission	*P&ZC*
Housing Authority	*HA*
Johnstown Senior Center	*JSC*
Johnstown Historical Society	*JHS*
Johnstown Housing Authority	*JHA*
Weld and Larimer Counties	*WLCC*
Greeley-Weld Housing Authority	*GWHA*
Thompson Rivers Parks & Recreation District	*TRPRD*
North Front Range Metropolitan Organization	*NFRMPO*
Great Western Railroad	*GWR*

Effectiveness/Impact

How effective a strategy is in generating tangible results:

- **Low:** somewhat effective, or slow to go into effect but still important
- **Medium:** more effective with some visible results shortly after implementation
- **High:** once completed, immediate results

Anticipated Cost

- **$:** an anticipated cost less than $20,000
- **$$:** an anticipated cost of $20,000 - $100,000
- **$$$:** an anticipated cost over $100,000

Anticipated Implementation Timeline

- **Short-term:** 0-5 years
- **Mid-term:** 5-10 years
- **Long-term:** 10-20 years or more

ROLES OF IMPLEMENTATION

Annual Workplan

Each year, the Town Manager and Planning and Development Director should collaboratively develop a workplan with key strategies for the year, based upon the Implementation Matrix. Resources and budgeting should be based upon implementing this Annual Work plan.

Tracking progress over time is crucial to ensuring the success of this Plan. It can be easy to lose track of how many improvements are made over time or to focus on strategies that steer away from identified priorities, targets, or resources. For this reason, Staff should identify accessible and important indicators and track their progress over time as part of the Annual Workplan to assess outcomes and maintain accountability.

The Town Manager and Planning & Development Director will have ultimate responsibility to coordinate audits and updates to the Plan and the Implementation of the Annual Work plan.

Town Council Prioritization Considerations

Ultimately, Town Council prioritizes the implementation of this Plan. Decisions are made based on a variety of changing conditions and priorities. Prioritization may change based on changing funding levels and/or sources (e.g., grant funding that must be used for a certain type of project); new opportunities for partnerships; and the emergence of new private development projects. The following criteria can help Town Council in determining the priority of strategies to implement:

- **Health, Safety, Welfare, and Code Compliance:** Strategy involves projects that improve public health, safety, welfare, or ensure code compliance.
- **Ease of Implementation:** Strategy capitalizes on opportunities to be easily implemented (i.e., low cost with large gains, staff capacity, development-ready projects, available property, etc.).
- **Community Significance:** Strategy provides benefit to a large number of people within the community, contributes to community vision and goals and to balancing needs across the community.
- **Partnerships for Funding:** Strategy leverages partnerships for funding (i.e., Regional Partners, federal or state grants, private sources, etc.).
- **Satisfies Urgent Need:** Strategy satisfies urgent needs within the community (i.e. transportation and safety improvements).
- **Completes Phasing of Current Projects:** Strategy completes phases of current projects that are yet to be completed.

Community Leadership

The community, and other governmental and non-governmental agencies, including community advisory committees, also have a role in the Johnstown Area Comprehensive Plan. Empowering them to take action will not only contribute to building civic leadership but also further the implementation of this Plan. The 'Community Leadership' Handout provides information and resources needed to take action. The goal is for community organizations to collaborate with the Town to find mutually beneficial solutions, pool resources, and assist in gathering data and monitoring the success of the implementation strategies. The Community Leadership Handout should be a live document that continues to evolve and improve based on community contributions, and should be made available on the Town's website, and promoted at community organizations and public facilities, including schools.

Plan Integration

Town Leadership and the Planning and Development staff should ensure consistency between the Johnstown Area Comprehensive Plan and development proposals, development regulations, and land use codes. Additionally, the Town should work to integrate the Plan's Implementation Strategies into the Town's Capital Improvement Plans to ensure implementation.

Plan Updates

Though the goals and strategies contained in this Plan were developed to guide the Town's decision-making into 2040, the Plan is intended to be flexible and adapt to changing conditions. The Plan should be reviewed and updated at least every 5 years. Minor modifications may occur in interim years whenever major demographic shifts or policy changes occur that would impact the accuracy and direction of the elements in this Plan. As change occurs, however, the Plan's Guiding Principle and Integral Themes should continue to provide the foundation for the Plan.

IMPLEMENTATION TABLE

The next couple of pages offer an illustration of the Implementation Table. Town Staff will work from a live version in an Excel Format. For the most up to date version of this table, please contact the Planning & Development Department.

WHERE WE LIVE

STRATEGY	TYPE	CHAMPION	PARTNERS	EFFECTIVENESS/ IMPACT	COST	TIMELINE
GOAL L1 | ENSURE NEIGHBORHOOD CHARACTER AND AMENITIES CONTRIBUTE TO THE HEALTH AND WELLBEING OF DIVERSE RESIDENTS.						
L1.1. Update land use regulations to address balance of residential and non-residential development consistent with the Future Land Use Plan; to create complete neighborhoods within and surrounding activity centers; to include design guidelines and wireless design standards for high quality developments; and to promote creative and diverse housing types and neighborhoods.	Regulatory Reform	P&D	Bldg.	High	$$	short-term
L1.2. Require connectivity of street and trail networks into and beyond new development, ensuring connection opportunities for future development on adjacent undeveloped lands, and creating safe routes to schools.	Regulatory Reform	P&D	Bldg., PW	Medium	$	on-going
L1.3. Create a measurable standard to require affordability/attainability, and universal design, in a certain percentage of housing units within new residential developments, or seek other techniques to address long term affordability in the community. Ensure updated code efforts include collaboration with local equitable housing advocates to identify and promote options and tools to create appropriate housing for senior and low-to-medium income households.	Plan/Study Regulatory Reform	P&D	Bldg., JHA, Habitat	Medium	$	on-going
L1.4. Address long-term livability options for seniors by encouraging universal design features and continued care amenities and facilities. Additionally, by working with local housing advocates and entities to include options for low-to-medium income seniors and to promote a retrofit assistance program to keep seniors in their homes.	Program/ Resource Regulatory Reform	P&D	Bldg., JHA	Medium	$	long-term
GOAL L2 | REVITALIZE AND MAINTAIN DOWNTOWN AS THE HEART OF THE COMMUNITY.						
L2.1. Update Downtown Design Guidelines to reflect current community values and needs (e.g. enhanced streetscape, curbside management, and gathering places, among others); to promote the preservation, renovation, and adaptive reuse of historic structures; to review development requirements for downtown projects (parking, open space, landscaping, etc); and to provide clear regulatory guidance for decision-making.	Regulatory Reform	P&D	PW	Medium	$$	on-going
L2.2. Update land use regulations to encourage mixed-use structures and higher density housing types in and adjacent to the Downtown Area.	Program/ Resource	P&D	PW, Bldg.	Medium	$	on-going
L2.3. Seek to expand the extents of Downtown as development and redevelopment near the current core area is proposed, utilizing more urban design standards to encourage an active streetscape and mix of uses.	Regulatory Reform	P&D		Medium	$	on-going

GOAL L3 | HONOR THE AGRICULTURAL HERITAGE OF THE JOHNSTOWN AREA.

L3.1. Assess the potential for implementation of agricultural preservation and conservation programs such as, easements, Transfer of Development Rights (TDR), and similar.	Plan/Study	P&D	Bldg., PW	Medium	$	mid-term
L3.2. Update land use regulations to encourage development to have agricultural elements and themes (e.g. orchards, community gardens, re-purposing agricultural structures, etc.) into their design. Alongside this effort, collaborate with new and existing neighborhoods, special districts, and other community partners to implement agricultural elements and themes in neighborhoods and facilities.	Regulatory Reform	P&D	Bldg., PW	Medium	$	on-going
L3.3. Establish relationships and collaborate with local agricultural producers, community partners and the business community in order to create new opportunities to connect local residents with local agricultural products and to develop an Agricultural Day to raise awareness of and build pride for local agriculture.	Program/ Resource	P&D	Comms.	High	$	short-term
L3.4. Promote awareness about the presence of farm vehicles and enhance farm-related signage to encourage appropriate driving behavior in emerging areas of development with significant active agricultural lands.	Program/ Resource	P&D	PW, Comms.	Low	$	on-going

WHERE WE WORK & SHOP

STRATEGY	TYPE	CHAMPION	PARTNERS	EFFECTIVENESS/ IMPACT	COST	TIMELINE
GOAL W1 | STRENGTHEN EMPLOYMENT CENTERS TO DIVERSIFY THE TOWN'S ECONOMIC BASE AND PROVIDE JOBS.						
W1.1. Collaborate interdepartmentally to create flexible regulations and standards that accommodate evolving economic trends and industries, and attract new business interests and investment (e.g. renewable energy, business incubators, artists/makers spaces, synergistic businesses, etc.).	Regulatory Reform	P&D	All Town Departments	Medium	$	mid-term
W1.2. Assess incentives and business programs to attract and retain industries that provide high quality jobs (i.e. salaries and benefits) as well as needed goods and services to the community.						
Some ideas suggested by the community are: • Businesses and services for diverse age groups and needs. • Destination businesses (e.g. microbreweries and dine-in galleries among others) that contribute to social gathering and recreation spaces. • Businesses and partners that can help diversify and enhance Downtown options for restaurants, shops, and entertainment.	Regulatory Reform	ED	TM, P&D	Medium	$	mid-term

W1.3. Highlight and align economic development programs and tools to include opportunities for local agricultural, tourism, and recreation industries. This effort should also include working with local groups to develop, establish, and maintain a repository of available resources for interested parties to engage in agri-tourism activities.	Program/ Resource	ED	TM	Medium	$	on-going
GOAL W2 | BALANCE MORE INTENSE COMMERCIAL USES ALONG MAJOR HIGHWAY CORRIDORS WHILE HAVING NEIGHBORHOOD-SCALE COMMERCIAL IN THE DOWNTOWN AND THROUGHOUT THE COMMUNITY TO ENSURE CONVENIENT ACCESS TO JOBS, GOODS, AND SERVICES FOR ALL RESIDENTS.						
W2.1. Analyze the potential impact and utilization of new incentive areas to encourage development, redevelopment, and investment in key locations (i.e., URA, TIF, DDA), in collaboration with area businesses, owners, and other Town departments..	Plan/Study	TM	F, P&D	Medium	$	mid-term
W2.2. Work with Downtown businesses, property owners, and residents to develop a strategy and design approach for Downtown that includes public improvements, encourages private investment, and favors home occupation businesses (that demonstrate that they will not have adverse effects on surrounding properties).	Plan/Study	ED	P&D, PW	Medium	$	short-term
W2.3. Promote appropriate, mixed-density residential development in and adjacent to employment and commercial centers to enliven these areas, and provide options to live, play, and work in close proximity..	Regulatory Reform	P&D	PW, Bldg.	Medium	$	on-going

WHERE WE PLAY

STRATEGY	TYPE	CHAMPION	PARTNERS	EFFECTIVENESS/ IMPACT	COST	TIMELINE
GOAL P1 | ENHANCE, MAINTAIN, AND INCREASE RECREATIONAL SPACES AND AMENITIES TO BE ENJOYED BY ALL AGES AND ABILITIES.						
P1.1. Review and update the Parks, Recreation, Open Space and Trails Plan.	Plan/Study	PW	P&D	Medium	$$	on-going
P1.2. Develop an ADA and community informed checklist for the review, maintenance, and update of Town parks and ensure priority projects are included in the Town's Capital Improvements Plan.	Program	PW	P&D	High	$	short-term
P1.3. Develop a Multi-Purpose Regional Park Master Plan.	Plan/Study	PW	P&D, Comms	Medium	$	mid-term
P1.4. Establish standards for the consistent integration of thematic and educational elements in the design of recreational areas and trails. Some considerations suggested by the community are: having signs and markers that identify species, farms, floodplains, etc.	Plan/Study	PW	P&D, Comms	Low	$	mid-term
P1.5. Assess opportunities to take advantage of local water features (i.e. Big Thompson and Little Thompson Rivers and the Johnstown Reservoir) for diversifying recreation options —to provide fishing and non-motorized water sports, among other activities.	Program/ Resource	P&D	PW, Comms.	Low	$	short-term
P1.6. Update land use regulations to incorporate pocket parks and natural areas in all commercial and employment centers to create public spaces and to offset environmental impacts, ensuring continuity of parks, trails, and open spaces wherever possible.	Program/ Resource	P&D	PW, Comms.	High	$	short-term

P1.7. Assess opportunities, partnerships, and funding to prioritize the acquisition and/or conservation of key open space and greenway corridors, including those shared with neighboring municipalities.	Plan/Study	PW	P&D, Larimer & Weld Counties	Medium	$	mid-term
P1.8. Update land use regulations to facilitate improvements to Downtown public spaces that create inviting and flexible gathering options and that support year-round cultural and entertainment activities.	Program/ Resource	P&D	PW, Bldg., ED	Medium	$	on-going
P1.9. Create an advisory group for community members to contribute to parks and recreation planning ensuring efforts are consistent with community desires.	Program/ Resource	PW	P&D, Comms.	Low	$	short-term

HOW WE MOVE

STRATEGY	TYPE	CHAMPION	PARTNERS	EFFECTIVENESS/ IMPACT	COST	TIMELINE
GOAL M1 | PROVIDE AN EFFICIENT, SAFE, AND COMPREHENSIVE TRANSPORTATION SYSTEM INTEGRATING MOTORIZED AND NON-MOTORIZED TRANSPORTATION OPTIONS.						
M1.1. Regularly update the Transportation Master Plan to reflect changing needs and trends and to include a bike and pedestrian circulation plan as well as the efficient integration of micromobility.	Plan/Study	PW	P&D, TE	Medium	$	on-going
M1.2. Collaborate with railroad and irrigation ditch companies to enhance existing and create new pedestrian connections while honoring the historic character of the rail lines and the irrigation ditches.	Capital Project	PW	P&D, DC, RRC	Low	$$$	long-term
M1.3. Conduct a comprehensive analysis and update of the Street Design Standards (consider Larimer County Urban Area Street Standards (LCUASS)); the Transportation Plan; and the Parks, Recreation, Open Space and Trails Plan to ensure updated strategies are coordinated with each other.	Plan/Study	PW	P&D, TE	Medium	$$	short-term
M1.4. Update land use regulations to include requirements for bike lanes and multi-modal trails to ensure connectivity with current and future development—within and adjacent to Town boundaries. Alongside this effort, analyze options to expand impact fees to support multi-modal transportation options.	Plan/Study	P&D	PW, TM	High	$	short-term
M1.5. Collaborate with local agencies and school districts to develop a clear implementation plan to create safe routes for cyclists and pedestrians to local schools. Update development codes to require this connectivity with new or redevelopment.	Capital Project	PW	P&D, SD	High	$$	on-going

STRATEGY	TYPE	CHAMPION	PARTNERS	EFFECTIVENESS/ IMPACT	COST	TIMELINE
M1.6. Update land use regulations to incentivize or require parking lots for high density and non-residential uses to incorporate EV charging stations.	Capital Project	P&D	PW, ED	Low	$$	long-term
GOAL M2 | ALIGN TRANSPORTATION AND ECONOMIC EFFORTS TO SUPPORT AND PROMOTE THE LOCAL ECONOMY.						
M2.1. Conduct a feasibility study to assess opportunities and funding options for a local shuttle or micro-transit service to connect residents and visitors to local destinations (e.g. from Downtown to 2534 area and vice versa).	Plan/Study	PW	P&D, ED	Low	$	mid-term
M2.2. Assess and update sign design standards (consider Tourist-Oriented Development signage —blue signs) for major corridors and activity centers to ensure high quality, cohesive, and compatible designs that promote local businesses and reduce the need for large signage.	Regulatory Reform	P&D	ED, PW, Comms.	Medium	$	short-term
GOAL M3 | BUILD AND STEWARD PARTNERSHIPS TO COLLABORATIVELY ADDRESS TRANSPORTATION IMPROVEMENTS OF REGIONAL IMPACT.						
M3.1. Collaborate with regional agencies and neighboring communities to develop and maintain a transportation system that separates different modes of transportation (e.g. vehicular, bicycle, equestrian, pedestrian, etc.) and that enhance connectivity and safety of shared trails.	Capital Project	PW	P&D, NFRMPO, CDOT	Medium	$$$	long-term
M3.2. Work locally and with adjacent jurisdictions to reduce trail gaps by prioritizing the construction of proposed trails and sidewalks that create needed connections for people to actively and safely move within and beyond town boundaries.	Capital Project	PW	P&D, Larimer & Weld Counties	Medium	$$	on-going
M3.3. Work with the community to improve seniors' transportation options (consider the NFRMPO One-Call One-Click Center).	Program	JSC	P&D, PW, Comms.	Low	$	on-going
M3.4. Identify partnerships and resources for joining existing and emerging North Front Range public transportation services and projects.	Plan/Study	PW	P&D, NFRMPO, CDOT	Low	$	mid-term
M3.5. Identify partnerships with joint funding that subsequently allow the Town to annex appropriate county roads into the Town and upgrade and realign as needed for the most efficient regional transportation system possible.	Capital Project	PW	P&D, Larimer & Weld Counties	Medium	$$$	mid-term
M3.6. Collaborate with CDOT to proactively and efficiently address traffic volumes, intersections, points of access, and overall safety on SH 60 and US 34.	Capital Project	PW	P&D	Low	$$$	on-going
M3.7. Leverage the I-25 designation as an Alternative Fuels Corridor to plan for the provision of EV infrastructure at interchanges.	Capital Project	PW	P&D	Low	$$	mid-term
M3.8. Proactively work with area railroad groups to coordinate safe and appropriate rail crossings for current and future transportation needs.	Capital Project	PW	GWR, UP	High	$$	mid-term

HOW WE SERVE

STRATEGY	TYPE	CHAMPION	PARTNERS	EFFECTIVENESS/ IMPACT	COST	TIMELINE
GOAL S1 | DIRECT COMMUNITY GROWTH IN A MANNER THAT WILL PROVIDE FOR THE EFFICIENT AND EFFECTIVE EXTENSION OF PUBLIC SERVICES AND FACILITIES.						
S1.1. Develop a measuring/monitoring and reporting system for Town infrastructure to ensure efficient upgrades and maintenance.	Capital Project	PW	TM	High	$$	on-going
S1.2. Host regular meetings with school, fire, and parks districts to collaborate on upgrades to existing facilities and on securing locations for new facilities.	Program	P&D	SD, FD, TRPRD	Medium	$	on-going
S1.3. Continue encouraging the community-scale development of health services for diverse age groups and needs (e.g. Day Care Centers for medically compromised persons).	Program/ Resource	P&D	ED, WLCC	Low	$	on-going
S1.4. Create an implement a consistent design theme for new and existing Gateways.	Capital Project	P&D	ED, PW	Medium	$$	mid-term
GOAL S2 | ENSURE TOWN PLANNING EFFORTS AND INVESTMENTS ARE SUSTAINABLE AND CONTRIBUTE TO THE COMMUNITY'S QUALITY OF LIFE.						
S2.1. Pursue more regional, state, and federal grant opportunities and seek grant writing assistance to capitalize on funding opportunities.	Program/ Resource	PW	P&D, E, Comms.	High	$	on-going
S2.2. Prioritize and seek out public and private partnerships and appropriately located and designed development proposals that maximize positive fiscal impacts and contribute to this Plan's guiding principle.	Program/ Resource	PW	P&D, ED	High	$	on-going
S2.3. Collaborate with neighboring towns to enhance connectivity with adjacent existing and future developments for the efficient development of utility infrastructure and emergency response.	Capital Project	PW	P&D, WLCC	High	$$$	on-going
S2.4. Identify and pursue local and regional projects for the improvement of public services, including alternative and multi-modal transportation options and other technological advancements (e.g. broadband, small cell connectivity, advanced metering, electric vehicles, etc.).	Capital Project	PW	P&D, Bldg.	High	$$$	on-going
S2.5. Leverage public engagement opportunities to educate on, discuss, define, and prioritize sustainability goals. Once goals are established, ensure their alignment across all Town efforts. Along this effort, promote water conservation approaches and practices in the community.	Plan/Study	PW	Comms., P&D	Medium	$	mid-term
S2.6. Assess community desire to update land use and building codes to require (or incentivize) development to meet updated quality, sustainability, and infrastructure standards (e.g. universal design, green and solar infrastructure, radon mitigation, etc.). Alongside this effort, investigate override of PUD and HOA documents to allow the use of and retrofits for environmentally friendly infrastructure.	Development	P&D	Bldg., PW	Medium	$	on-going

STRATEGY	TYPE	CHAMPION	PARTNERS	EFFECTIVENESS/ IMPACT	COST	TIMELINE
S2.7. Collaborate with local and regional schools to create a civic leadership curriculum and internship opportunities for individuals of all ages to learn about and contribute to Town affairs and to cultivate a community of leaders. Alongside this effort, work with the community to create a community corps of volunteers that can support community efforts.	Program/ Resource	Comms.	P&D, PW, TM	High	$	on-going
GOAL S3 | ENSURE ALL DEVELOPMENTS IS IN BALANCE WITH THE NATURAL ENVIRONMENT.						
S3.1. Identify and geographically define natural hazards and sensitive areas and recommended setbacks or mitigation to more appropriately incorporate these areas into planning efforts (e.g. hazard mitigation, environmental conservation, recreation and access) and to reference them in development reviews.	Plan/Study	P&D	PW	Medium	$	mid-term
S3.2. Update development standards to minimize disruption and restrict development within regulatory wetlands and the floodplain.	Regulatory Reform	P&D	Bldg., PW	High	$	on-going
S3.3. Collaborate with Weld and Larimer Counties to Develop a local Emergency Management Plan. Alongside this effort, work with the community to facilitate the formation of an emergency planning group (including public works, emergency responders, and interested community members) to conduct regular meetings and emergency related tabletop exercises.	Plan/Study	P, F	P&D, PW, WLCC	Medium	$	mid-term
S3.4. Update development standards to include right-of-way landscaping requirements that use green infrastructure —to protect, restore, and mimic the natural water cycle.	Regulatory Reform	P&D	Bldg., PW	Medium	$	short-term
S3.5. Assess opportunities to protect vital viewsheds along major corridors and gateways to highlight Johnstown's unique natural features (e.g. rivers, mountains, protected agricultural lands, etc.).	Regulatory Reform	P&D	Bldg.	Low	$	short-term
S3.6. Update current lighting code requirements and consider upgrading it to encourage Dark Sky approaches —for the efficient and safe utilization of outdoor lighting technologies with minimal disruption to the environment.	Regulatory Reform	P&D	Bldg., TM	Medium	$	short-term

APPENDIX A: GLOSSARY OF TERMS

Activity Center: a general term for mixed-use centers that integrate a range of uses and activities which complement and support each other. Typically, an activity center includes a predominant type of use, such as commercial or employment-related, that is then supported by a mix of one or more other uses, such as residential, civic, or institutional.

Agritourism: any activity carried out on a farm or ranch that allows members of the general public, for recreational, entertainment, or educational purposes, to view or enjoy rural activities, including farming, ranching, historic, cultural, harvest-your-own activities, or natural activities and attractions.

Americans with Disabilities Act (ADA): the ADA recognizes and protects the civil rights of people with disabilities and is modeled after earlier landmark laws prohibiting discrimination on the basis of race and gender. The ADA covers a wide range of disability, from physical conditions affecting mobility, stamina, sight, hearing, and speech to conditions such as emotional illness and learning disorders.

American Community Survey: A demographics survey program conducted by the U.S. Census Bureau. Data is collected for 1-year and 5-year periods.

Annexation: the process of bringing property into the Town limits. The Town may annex land one of two ways: by receiving a petition from a consenting property owner with land contiguous with the Town boundary, or when a property has been completely encircled by land located in the Town's jurisdiction (referred to as an "enclave") for a period of no less than three years.

Attainable/Affordable Housing: decent, attractive, safe, and sanitary accommodation that is affordable for the full spectrum of the Town's residents. While a cost of no more than 30% of gross household income is a good rule of thumb for affordability, there will be some circumstances where higher or lower thresholds may be more applicable.

Buffer: 1) a strip of land, fence, or border of trees, etc., between one land use and another, which may or may not have trees and shrubs planted for screening purposes, designed to set apart one use area from another. An appropriate buffer may vary depending on uses, districts, size, etc.; 2) districts established at or adjoining commercial-residential district boundaries to mitigate potential frictions between uses or characteristics of use.

Census: an official enumeration of the population, with details as to age, sex, occupation, etc.

Civic: relating to the duties or activities of people in relation to their town, city, or local area.

Compatible Land Use: a land use which may by virtue of the characteristics of its discernible outward effects, exist in harmony with an adjoining land use of differing character. Effects often measured to determine compatibility include, but are not limited to, noise, odor, light, and the presence of physical hazards such as combustible or explosive materials.

Comprehensive Plan: a community driven, long-range plan designed to guide decision-making for Town leaders and to help community members understand future development and redevelopment considerations over the next 20 years.

Connectivity: The degree to which roads and paths are connected and allow for direct travel between destinations.

Conservation Easements: a voluntary legal agreement between a landowner and another entity (usually a land trust) that places restrictions on the use of a piece of property. Common examples of use restrictions include prohibiting building on the property or preventing mining on the property. That said, landowners retain many of their rights, including the right to use the land (for purposes such as agriculture) and to sell it or pass it on to their heirs.

Cost-Burdened Households: households who pay more than 30% of their income for owning or renting a home and who may experience hardship affording necessities such as food, clothing, transportation, and medical care.

Crime Prevention through Environmental Design (CPTED): a multi-disciplinary approach of crime prevention that uses urban and architectural design and the management of built and natural environments. CPTED strategies aim to reduce victimization, deter offender decisions that precede criminal acts, and build a sense of community among inhabitants so they can gain territorial control of areas, reduce crime, and minimize fear of crime. CPTED is pronounced 'sep-ted' and it is also known around the world as Designing Out Crime, defensible space, and other similar terms.

Density: For residential areas, the number of homes per net acre of land. For non-residential areas, by floor area ratio: the number of square feet of building area per net acre of land.

Design Guidelines: written statements, explanatory material, graphic renderings and/or photographs intended to inform property owners and the public of specific examples of techniques and materials appropriate to achieve identified design goals and objectives.

Downtown: the core area of Johnstown that has a mix of residential, business, and civic uses.

Economic Development: establishing new businesses and increasing the number of economic growth practices that can grow a local economy through diversification, number, or partnerships.

Economic Profile System (EPS): a tool created by Headwaters Economics to build customized socioeconomic reports of U.S. counties, states, and regions. EPS uses published statistics from federal data sources, including the U.S. Census Bureau, Bureau of Economic Analysis, and Bureau of Labor Statistics. The Bureau of Land Management and Forest Service have made significant financial and intellectual contributions to the operation and content of EPS.

Floodplain/ 100-year floodplain: a floodplain is a generally flat area of land next to a river or stream. It stretches from the banks of the river to the outer edges of the valley. 100-year floodplain refers to any area that has a one percent chance of experiencing a base flood in any given year.

Gateway entrances: attractive and celebratory entrances that welcome residents and visitors into town. Key gateway entrances, like near the Downtown, may serve to help slow traffic well outside Town limits.

Goal: illustrate desired future ideals and are derived from the community vision and themes.

Green Infrastructure: the interconnected system of parks, open space, trails, waterways and other natural areas that connect the Town to its natural environment and which provides environmental functions and benefits like mitigating stormwater runoff.

Growth Management Area (GMA): an area beyond Town limits that can reasonably be expected to annex as growth continues. Properties within the GMA will only become a part of the municipality at the desire of the property owner, and as these areas become adjacent to an expanding Town boundary.

Growth Rate: a measure over time of the increase or decrease in Town population compared to the Town's population at a specified date. Growth rates are usually expressed as a percentage and applied to time increments of one, five, or ten years.

Hazardous Areas: areas prone to danger due to natural or man-made features. Often a floodplain is considered a hazardous area as damage to life and property can occur in the event of a flood.

Health: a state of physical, mental, and social well-being, and not merely the absence of disease or infirmity. Health is a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities.

Infrastructure: the basic facilities and installations that help a government or community run, including roads, schools, phone lines, sewage treatment plants, and power generation, among others.

Intensities (of Land Uses): refers to the extent to which a land parcel is developed in conformity with zoning ordinances, typically measured by the floor area ratios (FAR) to indicate the gross floor area divided by the lot area).

Intergovernmental Agreement (IGA): any agreement that involves or is made between two or more governments in cooperation to solve problems of mutual concern.

Land Use: Characteristic of the typical development or activity that occurs on the land.

Land Use Regulation (and Zoning): the municipal or local laws or regulations that indicate the permitted use of the property in accordance with the Town's regulations and guidelines.

Median Household Income: the income cut-off where half of the households earn more, and half earn less.

Micromobility: transportation using lightweight vehicles such as bicycles or scooters, especially electric ones that may be borrowed as part of a self-service rental program in which people rent vehicles for short-term use within a town or city.

Mitigate/Mitigation: measures required or taken to avoid, minimize, compensate for, or offset definable negative impacts of development on the environment, public facilities and services, or other issues of community concern defined by ordinance.

Mixed-Use Development: development that integrates two or more distinct land uses, such as residential, commercial, and office, with a strong pedestrian orientation.

Mobility: methods of getting from point of origin to point of destination. Monitoring: observe and check the progress or quality of (something) over a period of time; keep under systematic review

Multi-Jurisdictional: a group of cities, counties, or a combination of both.

Multi-Modal Transportation: a street or path that supports more than one type of transportation including walking, bicycling, busing, driving, or others.

Pandemic: an outbreak of a disease that occurs over a wide geographic area and affects an exceptionally high proportion of the population.

Primary Job: the highest paying jobs for an individual worker, this includes one job per worker and may be in the public or private sector.

Quality of Life: in planning terms, quality of life means the attributes or amenities that combine to make an area a good place to live. Examples include the availability of political, educational, and social support systems; good relations among constituent groups; a healthy physical environment; and economic opportunities for both individuals and businesses.

Resilient/ Resilience: The ability to change, adapt, or prepare for change that allows a return to normal to happen more quickly.

Retrofitted (homes or roads): to furnish or enhance homes or roads with new or modified parts or features not available or considered necessary during the original construction.

Stakeholders: a person or group who has a vested interest in the project.

Strategy: outlines a course of action to guide decision-making to achieve the goals.

Streetscape: the overall appearance of a street and the features related to both it and the directly associated public realm, including medians, street trees and other landscaping, street-facing building treatments, entry features, walls, fences, amenities including street furniture and public art, and associated facilities such as street lights, utilities, signage, sidewalks, and trails.

Transfer of Development Rights (TDR): is a voluntary, incentive based program that allows landowners to sell development rights from their land to a developer or other interested party who then can use these rights to increase the density of development at another designated location. While the seller of development rights still owns the land and can continue using it, a conservation easement is placed on the property that prevents further development. A TDR program protects land resources at the same time providing additional income to both the landowner and the holder of the development rights.

Universal Design: design of the built environment that promotes access, to the greatest extent feasible, for all people regardless of age, size, ability, or disability.

Walkable/Walkability: a physical design and environment with availability of safe, accessible, connected and inviting facilities that encourage and result in more pedestrian activity for a variety of purposes.

Town of Johnstown

PLANNING & ZONING COMMISSION
STAFF ANALYSIS REPORT

ITEM:	**Public Hearing and Consideration of Final Draft of the *2021 Johnstown Area Comprehensive Plan***
DESCRIPTION:	*2021 Johnstown Area Comprehensive Plan* is a complete update to all sections of the current plan document (2006).
LOCATION:	Town-wide and applies to the Growth Management Area (GMA)
APPLICANT:	Town of Johnstown – Planning & Development Department
STAFF:	Kim Meyer, Director
HEARING DATE:	October 13, 2021

ATTACHMENTS

1. Final Public Draft *2021 Johnstown Area Comprehensive Plan*
2. Logan Simpson 9-27-21 Presentation of Overview of the Plan

PROJECT SUMMARY

With the significant growth the Town has experienced in both commercial and residential land uses, extensive floods that occurred in 2013 and shifted the regulatory floodplains for major rivers, and some significant transportation planning actions in recent years, the Town chose to embark on a full update to the Johnstown Area Comprehensive Plan in Spring of 2020, with Logan Simpson used as the Town's consultant to assist the Town with this update. The onset of the COVID-19 global pandemic modified the project's timelines and community engagement plans. Through a variety of social media and digital outreach campaigns, 1238 community responses were received on-line, as well as information and perspectives gathered from more focused stakeholder interviews conducted via remote online meetings.

COMPREHENSIVE PLAN HISTORY

The Town of Johnstown appears to have started its foray into master / comprehensive planning in 1981 with the initial adoption of the Master Land Use Plan; at the time Johnstown encompassed approximately 2,184 acres, about 3.41 square miles. The planning area for growth included residential extending east from just east of Telep Ave, another quarter section – to where Rolling Hills Ranch sits today; north along WCR 50 (Veterans Parkway); south to about the RR tracks south of Hwy 60, and following the Little Thompson River; and heavy industrial uses filling in east to the Central Waste Water Treatment Plant.

A 1998 update followed, noting about 2500 residents at that time, and where the Town's planning area expanded greatly to "60 sections" of land, equal to 60 square miles – from north to US 34, west to WCR 7, south to WCR 38, with the east boundary generally along WCR 19, but extending to Hwy 257 in the north – an area that extends farther than the current ~48 Square mile "Growth Management Area" (GMA).

For the 2001 update, the estimated current population was approximately 3,800 residents (2000); with projections up to 10,000 by 2020. The Land Use Map starts to look more like the map being considered with the 2021 update, with a higher level of intensity and density at major corners and transportation corridors – using more traditional "commercial," and "residential" designations, but with a seemingly similar intent. With the 2006 Comprehensive Plan update, the Town starts to address recent growth pressures and considers such factors as process predictability, flexibility, land use balance and self-sufficiency. Reporting 8,900 residents, the 2006 plan projects the population to expand to 14,000 by 2015. The Land Use Framework Plan starts to acknowledge competing planning and development interests for land between neighboring municipalities, and pulls the GMA back to its near-current boundary.

PUBLICATION & AWARENESS

This project has experienced significant visibility on the Town's website and social media platforms, and has been able to engage a relatively large number of resident and businesses in the community. A Discussion Draft was available online from mid-November of 2020 through May of 2021, when significant revisions and updates were made. The Final Draft has been republished online – with the ability to comment directly on that link – since mid-September 2021; as well as included on the Town website, social media, and the newsletter. Notification of the public hearings for Planning & Zoning Commission and Town Council were published in the Johnstown Breeze on October 7th.

THE PROCESS

The Planning & Development Staff were actively involved in all aspects of this update and process, and feel that the proposed plan accurately reflects the sentiments shared through the extensive outreach efforts.

The Steering Committee was comprised of the Planning & Zoning Commission members, Councilwomen Amy Tallent, to provide a Council perspective, and Alex Sauer, as an Ag/Rural representative with deep roots in the community. Stakeholders interviewed included HOA representatives, staff from neighboring municipalities and counties, Downtown business representatives, and a youth perspective offered by several students of Roosevelt High School. Key town staff from the Town Manager's office, Public Works, and Communications also played key roles in helping craft the implementation strategies and ensuring a broad perspective overall.

OVERVIEW OF THE PLAN

The proposed Plan took into account the recent Mission, Vision, and Values discussion from Town Council and built on that foundation. From the public input received, some very consistent points emerged, leading the Plan to establish the primary themes of Johnstown being: Resilient, Vibrant, and Connected.

From this place, primary goals – 12 of them – and nearly 60 actionable "implementation strategies" were developed to specifically identify and target tasks that would start to move Johnstown towards realization of these ideals. Those strategies were broken down into sections that then influence:

- Where we Live
- Where we Work & Shop
- Where we Play
- How we Move
- How we Serve

The most impactful change may be moving away from directing specific land uses to specific areas, to acknowledging that much of the development Johnstown has to date, and is working to implement in the near future, involves a wider mix and meshing of land uses. Higher density residential areas adjacent to commercial areas and/or as a buffer between commercial and a lower density residential neighborhood; a desire for neighborhood goods and services closer to developing and existing residential neighborhoods for convenience and to lessen the need to drive, out of the way or at all, to grab essentials. Areas begin to be described as High to Very Low "Density / Intensity Areas" and discussion of high level characteristics related to the type of uses or densities one might expect to find there. There is also a hatch identifying where some prime agricultural lands may exist for future preservation action. The intent is to avoid the "line" between one use and another, and the need to amend the Lane Use Map as users/uses become known within a development – creating a more fluid and flexible approach to land use planning.

The Plan identifies and highlights the importance of agriculture to the area and to the cultural heritage of Johnstown, and identifies some initial strategies that might begin to actively address how this interaction may function, and that value be protected, over time.

The Implementation Strategies section is a restatement of strategies identified earlier in the Plan, in one place, with "Champions" and Partners identified to start creating an action plan for implementation of the Plan's policies and overall guidance. The intent is to create a workbook like section that can be written in, updated with regular accountability reviews, modified on an annual or bi-annual basis based on priorities and resources, and otherwise used as a quick "go-to" guide for "what do we do next?"

STAFF RECOMMENDATION

The Planning & Zoning Commission is tasked, by JMC §2-186, with preparing a master plan, holding a public hearing, and – once approved by the Commission – refer the plan to the Town Council for Adoption by Council Resolution.

Given the Commission's involved role in the Steering Committee that prepared this plan, the data and guidance provided by the consultants, and the public comments received to date, Staff believes this plan is an honest reflection of the comments and concerns of all parties involved in the process and should be Approved by the Commission, with a recommendation for Adoption to the Town Council.

RECOMMENDED MOTION

I move that the Planning & Zoning Commission approve this 2021 Johnstown Area Comprehensive Plan, and refer this plan to the Town Council for Adoption.

Planner:

Kim Meyer, Planning & Development Director

Town of Johnstown

TOWN COUNCIL AGENDA COMMUNICATIONS

AGENDA DATE: November 1, 2021

SUBJECT: Ordinance 2021-213 Approving the Rezoning of the Riverbend Estates to Planned Unit Development – Residential (PUD-R)

ACTION PROPOSED: Hold Public Hearing and Consider Ordinance 2021-213 Approving the Rezoning of the Riverbend Estates to Planned Unit Development – Residential (PUD-R)

ATTACHMENTS:
1. Vicinity Map
2. Ordinance 2021-213
3. Proposed Riverbend Estates Zoning Plat
5. PZC Staff Report (9/15/21)

PRESENTED BY: Kim Meyer, Planning & Development Director

AGENDA ITEM DESCRIPTION:

The Applicant has requested a change of zone (rezoning) to the PUD-R Zone District to clarify the intent to develop this property as a residential development. Along with this request, the Town received an updated Outline Development Plan for a residential subdivision development which is being considered concurrently.

The Planning & Zoning Commission held a public hearing on September 15, 2021. The Commission voted unanimously to recommend approval of the Riverbend Estates Change of Zone to the Town Council, with the findings that are contained in the attached staff report (Attachment 5) and reiterated in substance in the proposed Ordinance 2021-213 (Attachment 2).

LEGAL ADVICE:

The Town Attorney drafted the Ordinance.

FINANCIAL ADVICE:

NA

RECOMMENDED ACTION:

Approve Ordinance 2021-213 approving Riverbend Estates Rezoning to Planned Unit Develompent (PUD-R), on first reading.

SUGGESTED MOTIONS:

For Approval: Based on findings and analysis presented at this hearing, I move to approve Ordinance 2021-213 Approving the Riverbend Estates Rezoning to Planned Unit Develompent (PUD-R),

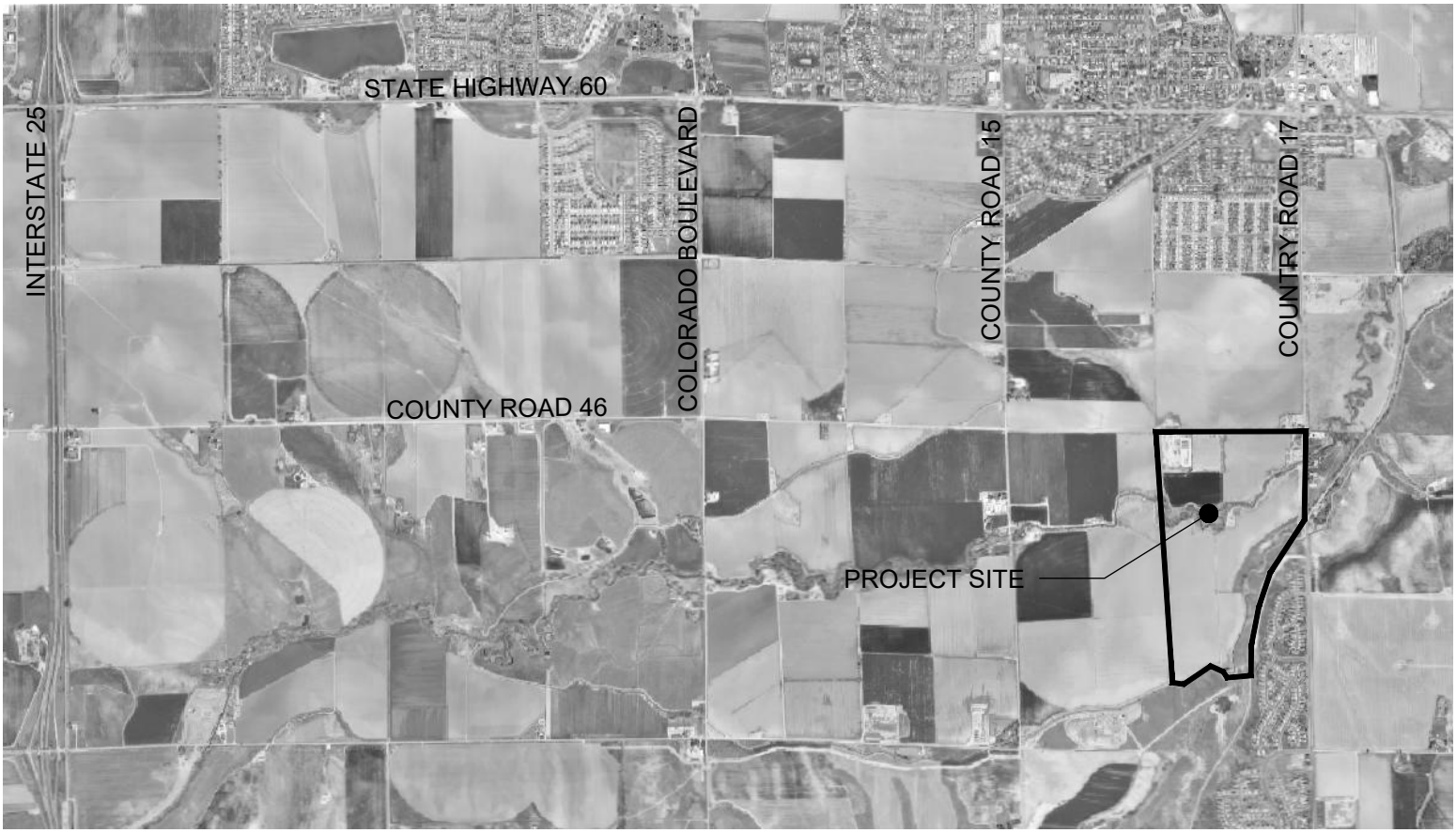
For Denial: Based on information presented in this hearing, I move to deny Ordinance 2021-213 as presented.

Reviewed and Approved for Presentation,

_____
Town Manager

VICINITY MAP

SCALE: 1" = 3,000'



NORTH

RIVERBEND ESTATES SUBDIVISION

OUTLINE DEVELOPMENT PLAN
MARCH 30, 2021

JOHNSTOWN, COLORADO

TOWN OF JOHNSTOWN, COLORADO
ORDINANCE NO. 2021-213

APPROVING REZONING OF THE PROPERTY KNOWN AS RIVERBEND ESTATES, LOCATED IN THE EAST HALF OF SECTION 17, TOWNSHIP 4 NORTH, RANGE 67 WEST OF THE 6TH P.M., COUNTY OF WELD, STATE OF COLORADO, CONSISTING OF APPROXIMATELY 171.414 ACRES, TO PLANNED UNIT DEVELOPMENT - RESIDENTIAL (PUD-R)

WHEREAS, the Town of Johnstown, Colorado ("Town") is a Colorado home rule municipality, duly organized and existing under the laws of the State of Colorado and the Town's Home Rule Charter; and

WHEREAS, the Town Council is vested with authority to administer the affairs of the Town; and

WHEREAS, Riverbend Estates Partners, LLC, a Colorado limited liability company, the property owner, applied to rezone the property known as Riverbend Estates, located in the East Half of Section 17, Township 4 North, Range 67 West of the 6th Principal Meridian, Town of Johnstown, County of Weld, State of Colorado, consisting of approximately 171.414 acres, being more particularly described on Exhibit A, which is attached hereto and incorporated herein by this reference ("Property"), from Planned Unit Development - Mixed Use ("PUD-MU") to Planned Unit Development - Residential ("PUD-R"); and

WHEREAS, the request to rezone the Property is based on the fact that the Riverbend Estates subdivision is anticipated to include only residential dwelling units; and

WHEREAS, on September 15, 2021, the Town Planning and Zoning Commission held a hearing and recommended approval of PUD-R zoning on the Property; and

WHEREAS, on November 1, 2021, the Town Council held a public hearing to determine appropriate zoning for the Property and, based upon the evidence received at the hearing, finds that the requested rezoning of the Property to PUD-R conforms to the *Johnstown Area Comprehensive Plan* and should be approved.

NOW, THEREFORE, BE IT ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF JOHNSTOWN, COLORADO, THAT:

1. Zoning of the Property known as Riverbend Estates and more particularly described on the attached Exhibit A shall hereby and hereinafter be designated as PUD-R.

2. This Ordinance, after its passage on final reading, shall be numbered, recorded, published and posted as required by the Home Rule Charter of the Town of Johnstown, Colorado ("Charter") and the adoption, posting and publication shall be authenticated by the signature of the Mayor and the Town Clerk and by the Certificate of Publication. This Ordinance shall become effective upon final passage as provided by the Charter.

3. Upon its effective date, the Town Clerk is hereby directed to file this Ordinance with the real estate records of the Weld County Clerk and Recorder.

INTRODUCED AND APPROVED on first reading by the Town Council of the Town of Johnstown, Colorado, this __ day of _____, 2021.

TOWN OF JOHNSTOWN, COLORADO

ATTEST:

By: _____ By: _____
Diana Seele, Town Clerk Gary Lebsack, Mayor

PASSED UPON FINAL APPROVAL AND ADOPTED on second reading by the Town Council of the Town of Johnstown, Colorado, this _____ day of _____, 2021.

TOWN OF JOHNSTOWN, COLORADO

ATTEST:

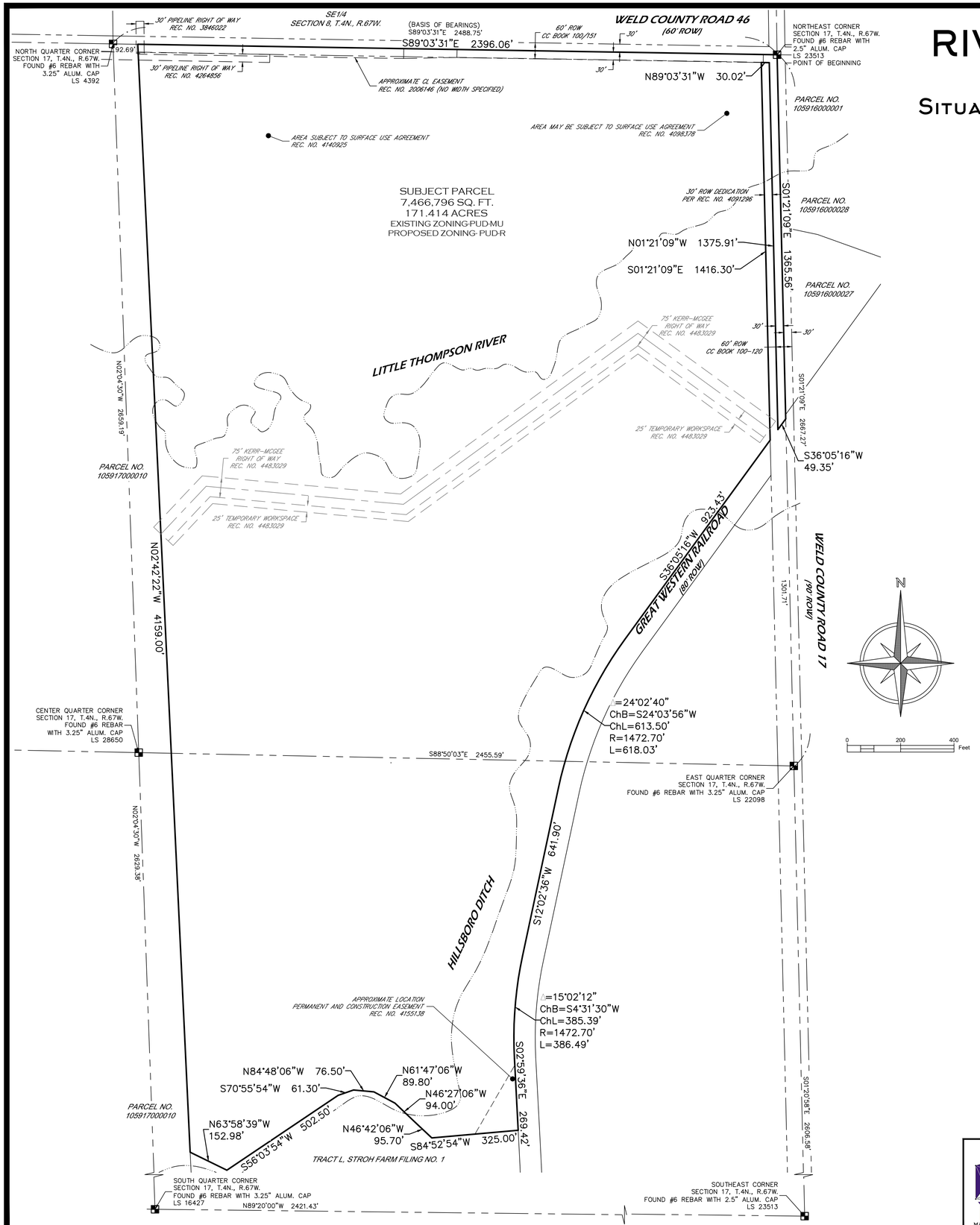
By:_____ By:_____
Diana Seele, Town Clerk Gary Lebsack, Mayor

RIVERBEND ESTATES P.U.D. ZONING PLAT

TOWN OF JOHNSTOWN, COLORADO

Situate in the East Half of Section 17, Township 4 North, Range 67 West of the 6th P.M. County of Weld, State of Colorado

171.414 acres



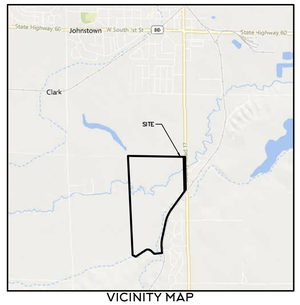
PROPERTY DESCRIPTION

A parcel of land, situate in the East Half (E1/2) of Section Seventeen (17), Township Four North (T.4N.), Range Sixty-seven West (R.67W.) of the Sixth Principal Meridian (6th P.M.), Town of Johnstown, County of Weld, State of Colorado and being more particularly described as follows:

BEGINNING at the Northeast corner of said Section 17 and assuming the North line of said NE1/4 as bearing South 89°03'31" East, being a Grid Bearing of the Colorado State Plane Coordinate System, North Zone, North American Datum 1983/2011, a distance of 2488.75 feet, monumented as shown on this drawing, and with all other bearings contained herein relative thereto;

THENCE South 01°21'09" East along the East line of said NE1/4 a distance of 1365.56 feet;
THENCE South 36°05'16" West a distance of 49.35 feet to the East line of that parcel as described in the Deed of Dedication as recorded March 18, 2015 at Reception No. 4091296 of the Weld County Clerk & Recorder (WCCR);
Thence along the East, North and West lines of said Reception No. 4091296 the following three courses:
THENCE North 01°21'09" West a distance of 1375.91 feet;
THENCE North 89°03'31" West a distance of 30.02 feet;
THENCE South 01°21'09" East a distance of 1416.30 feet to the North Right of Way (ROW) line of Great Western Railroad;
Thence along the North and West lines of said ROW the following five courses:
THENCE South 36°05'16" West a distance of 923.43 feet to a Point of Curvature (PC);
THENCE along the arc of a curve concave to the Southeast a distance of 618.03 feet, having a Radius of 1472.70 feet, a Delta of 24°02'40" and is subtended by a Chord that bears South 24°03'56" West a distance of 613.50 feet to a Point of Tangency (PT);
THENCE South 12°02'36" West a distance of 641.90 feet to a PC;
THENCE along the arc of a curve concave to the Southeast a distance of 386.49 feet, having a Radius of 1472.70 feet, a Delta of 15°02'12" and is subtended by a Chord that bears South 04°31'30" West a distance of 385.39 feet to a PT;
THENCE South 02°59'36" East a distance of 269.42 feet to the North line of Tract L, Stroh Filing No.1 as recorded December 6, 2000 at Reception No. 2811421 of the WCCR;
Thence along said North lines the following eight courses:
THENCE South 84°52'54" West a distance of 325.00 feet;
THENCE North 46°42'06" West a distance of 95.70 feet;
THENCE North 46°27'06" West a distance of 94.00 feet;
THENCE North 61°47'06" West a distance of 89.80 feet;
THENCE North 84°48'06" West a distance of 76.50 feet;
THENCE South 70°55'54" West a distance of 61.30 feet;
THENCE South 56°03'54" West a distance of 502.50 feet;
THENCE North 63°58'39" West a distance of 152.98 feet;
THENCE North 02°42'22" West a distance of 4159.00 feet to the North line of the NE1/4;
THENCE South 89°03'31" East a distance of 2396.06 feet to the POINT OF BEGINNING.

Said parcel contains 7,466,796 Square Feet or 171.414 Acres more or less by this survey.



VICINITY MAP
SCALE: 1" = 3000'

N

OWNER: RIVERBEND ESTATE PARTNERS, LLC

By:_____ As:_____

Witness my hand and seal this _____ day of _____, 20 ___.

NOTARIAL CERTIFICATE

STATE OF COLORADO)
ss
COUNTY OF WELD)
The foregoing instrument was acknowledged before me by _____ as _____ this _____ day of _____, 20___.
Witness my Hand and Official Seal.
My commission expires: _____.

LEGEND

- BOUNDARY LINE
- EASEMENT LINE
- RIGHT OF WAY LINE
- SECTION LINE
- CENTERLINE
- ALIQUOT CORNER AS DESCRIBED

TOWN COUNCIL APPROVAL

This Map to be known as RIVERBEND ESTATES P.U.D ZONING PLAT is approved and accepted to the Town of Johnstown, Colorado by Ordinance Number _____, passed and adopted on final reading at a regular meeting of the Town Council of the Town of Johnstown, Colorado held on the _____ day of _____, 20___.

_____ Attest:_____
Gary Lebsack, Mayor Diana Seele, Town Clerk

SURVEYOR'S CERTIFICATE

I, Steven Parks, a Colorado Licensed Professional Land Surveyor, do hereby state that this Annexation Map is an accurate representation of the property to the best of my knowledge, information, belief, and in my professional opinion. I further state that this certificate does not extend to any unnamed parties or the successors and/or assigns.

NOTICE

According to Colorado law you must commence any legal action based upon any defect in this survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of the certification shown hereon. (13-80-105 C.R.S. 2012)

BASIS OF BEARINGS AND LINEAL UNIT DEFINITION

Assuming the North line of the Northeast Quarter of Section 17, Township 4 North, Range 67 West of the 6th P.M., monumented as shown on this drawing, as bearing South 89°03'31" East, being a Grid Bearing of the Colorado State Plane, North Zone, North American Datum 1983/2011, a distance of 2488.75 feet and with all other bearings contained herein relative thereto.

The lineal dimensions as contained herein are based upon the "U.S. Survey Foot".

TITLE COMMITMENT NOTE

For all information regarding easements, rights-of-way and title of records, Majestic Surveying, LLC relied upon Title Commitment Number 100-N0031721-030-TH, Amendment No. 1, dated May 20, 2021, as prepared by Fidelity National Title to delineate the aforesaid information.
This survey does not constitute a title search by Majestic Surveying, LLC to determine ownership or easements of record.

PRELIMINARY

Steven Parks - On Behalf of Majestic Surveying, LLC
Colorado Licensed Professional Land Surveyor #38348

MAJESTIC SURVEYING
MAJESTIC SURVEYING, LLC 1111 DIAMOND VALLEY DRIVE #104, WINDSOR, CO 80550

PROJECT NO: 2021087	PROJECT NAME: RIVERBEND	REVISIONS:	DATE:	1
DATE: 9-8-2021	CLIENT: RIVERBEND ESTATES			
DRAWN BY: SIP	FILE NAME: 2021087ZONING			
CHECKED BY: SIP	SCALE: 1" = 200'			SHEET 1 OF 1

Town of Johnstown

PLANNING & ZONING COMMISSION
AGENDA MEMORANDUM

ITEM: **#1: Public Hearing of Riverbend Estates Change of Zoning**
#2: Public Hearing of Riverbend Estates Outline Development Plan Amendment (ODP)

DESCRIPTION: Proposed Change of Zone to PUD-R zoning, with an Outline Development Plan (ODP) for 172.39 acres of single-family residential homes. 119 dwelling units are proposed in Phase 1 (1.72 DU/AC) and 244 dwelling units are proposed in Phase 2 allowing (2.53 DU/AC) for potentially 363 dwelling (2.11 DU/AC) units on this property.

LOCATION: Portions of the Northeast Quarter (NE ¼) and The East Half (E ½) of Section 17, Township 4 North, Range 67 West.

APPLICANT: Lee M. Lowry/Riverbend Estates Partners, LLC

STAFF: Kristin Cote, Planner I

HEARING DATE: September 15, 2021

ATTACHMENTS

1- Vicinity Map
2- Application
3- Outline Development Plan
4- Zoning Map
5- Public Comment

BACKGROUND & SUMMARY

The applicant, Lee M. Lowry/Riverbend Estates Partners, LLC, is requesting consideration of the Outline Development Plan (ODP) and zoning of PUD-R for 172.39 acres of land located in Section 17, Township 4 North, Range 67 West. This property was annexed into the Town of Johnstown on June 20, 2001 (Ordinance No. 2001-661).

The subject property is bordered on all sides by land within the Town of Johnstown, except for several small parcels directly east of the most northerly extension of this property, which is located in

unincorporated Weld County and is zoned AG (Agricultural). All the contiguous land within Town limits is zoned PUD-R with the exception of the land to the north which is zoned Holding Agriculture (HA).

The surrounding land uses are primarily agricultural. The exception to this is the existing Stroh Farms Filing 2 Subdivision which is south of this property and three (3) residential sites directly east of northerly portion of this site located in unincorporated Weld County. This property is bordered by WCR (Weld County Road) 46 to the North and Parish Avenue (WCR 17) to the east. The Great Western Railroad and the Hillsborough Ditch borders this site on its south and southeastern sides. The Little Thompson River runs through this property and splits what the developers of this site are proposing for phases 1 and 2.

HISTORY

Historically, the use of this property has been as an agricultural site used for farming. There are existing Oil and Gas wells on the northwest corner of this site and several agricultural outbuildings on the northeast corner of WCR (Weld County Road) 46 and Parish Avenue (WCR 17). This property was annexed into the Town June 20, 2001, and designated as a PUD Mixed Use (PUD-MU) zone by Ordinance No. 2001-661. The property owner made application to develop a subdivision on the area north of the river in 2002. That application was denied by the Board of Trustees in September 2002. As part of the original review process, the Planning and Zoning Commission held a public hearing and voted to recommend approval with conditions. The Board subsequently held a public hearing on the request, and expressed several questions and concerns before denying the application. The applicant subsequently filed a lawsuit against the Town in Weld County District Court. The applicant and Town were able to address the conditions and concerns expressed during the initial review process. In December 2003 the applicant withdrew the lawsuit and worked with the Town Planner to re-submit plans and a narrative. Subsequently, the Town approved a Final Development Plan (FDP) for the northern portion of this property in 2005 that allowed for the construction of 123 single family detached dwelling units in phase 1, no final plats were ever finalized or recorded, and that approval has expired. No additional action was taken after 2005 to develop this property until 2021, being in excess of the typical three (3) year vesting provided under Colorado Revise Statutes and Johnstown Municipal Code.

This property is located in the Little Thompson River 1% ("100-year") floodplain and the floodway. In the catastrophic rain event that occurred in 2013, flooding occurred within the entire northern portion of this property, in the location of proposed phase 1. This prompted FEMA to designate additional land adjacent to the Little Thompson River as Regulatory Floodway and Floodplain (FIRM Panel 08069C1410G/Effective Date 1/15/21). FEMA defines the Regulatory Floodway as "the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height." The developers are currently in process of seeking FEMA approval of a Conditional Letter of Map Revision (CLOMR) which would, if deemed acceptable, remove portions of this land from the "Floodway" and "Floodplain" designation, permitting development to occur. Without FEMA granting either a CLOMR (Conditional Letter of Map Revision) or a Letter of Map Revision (LOMR) this property will not be able to be developed as is being proposed in this ODP. Staff has had conversations with the developer regarding this matter

and they understand that the potential to develop this site is dependent on meeting the Town and FEMA's Floodplain rules and regulations.

NOTICE

Notice for the Planning & Zoning Commission hearing was published in the local paper of widest circulation, the Johnstown Breeze, on Thursday, August 26, 2021. This notice provided the date, time, and location of the Planning and Zoning Commission hearing, as well as a description of the project. Notices were mailed to all property owners within 500 feet of the property in question. This notice included a map of the proposed ODP and zoning map.

ANALYSIS

Johnstown Comprehensive Plan Alignment

Goal CF-2: Beautiful Town gateways and entries at major intersections - Gateways.

This ODP sits at the intersection of WCR 46 and Parish Avenue (WCR 17). Both of these are significant roadways; Parish Avenue is the Town's main street. The Riverbend Estates ODP would further enhance this important roadway and the gateway into the Town from the south.

Goal PG-2: Provide a variety of recreational opportunities for all ages and abilities that will draw the community together.

The proposed ODP sets aside 72.11 acres of open space/park land as well as provides for the continuation of a regional trail from the northeast corner of the property to the west property line. This helps the Town move forward with the establishment of our safe and comprehensive trail system that will provide regional connections and links to neighborhoods.

Goal PG-3: Preserve wetlands, wildlife habitats and natural areas, especially in conjunction with development along the Little and Big Thompson River corridors.

The proposed ODP preserves a large area of permanent open space, which encompasses the Little Thompson River. This will help to protect and enhance the integrity and quality of the natural environment within that river corridor.

Zoning

The current zoning for the property is PUD-MU as was established in 2001. The applicant requests that zoning designation be changed to PUD-R. The ODP would allow for the construction of single family detached houses. The PUD-MU zone does not allow for the construction of single family detached homes, per municipal code. The overall density requested is 2.11 DU's per acre.

ODP Development Standards

This ODP sets forth some basic development standards regarding setbacks, building heights, and lot sizes. More detailed design guidelines will be completed with the subdivision and development plan process. Development standards for residential uses across both residential planning areas will be consistent with one another. A minimum lot size of 6,000 square feet is proposed to be established as part of this ODP.

Proposed Infrastructure Concept

An existing 12-inch Town waterline runs north to south along Parish Avenue (WCR 17). A 12-inch loop will be made within each future phase, and continuing the water line in CR 46 for future development to the west. Both filings will likely propose planting drought resistant native prairie grasses and shrubs with a xeric drip irrigation system as part of the 30-foot arterial landscape buffer at the project boundaries and along WCR 46 and Parish Avenue (WCR 17).

The project is located within the Central Interceptor sewer service area under current Town sewer planning. The proposed sewer service will discharge to a future offsite 21-inch sanitary sewer main at the Parish Avenue (WCR 17) and WCR 46 intersection, which will flow northeast of the property to the proposed Johnstown Farm's lift station south of the Mountain View West development on WCR 46 ½. At the Town's request, with future construction and engineering design the proposed WCR 46 sewer main will be oversized to ensure this leg is sized for future flows from the west as well as require stubs for future connections for development on adjacent western properties.

Regarding transportation networks in the area, this property abuts, on both the north and east sides, major arterials. The primary north/south road through the community is Weld County Road (WCR) 17, named Parish Avenue through Johnstown. Weld County Road (WCR) 46 is considered a high priority road for future paving due to the existing and proposed developments within that general area. The improvements to WCR 46 will improve the accessibility of the existing I-25 interchange at SH (State Highway) 56 (WCR 44) for residents in the south part of Johnstown and it will also provide some relief to SH 60 through town. A summary of the improvements required for this potential development as presented by the Town Traffic Engineer are as follows:

- It is anticipated that this development would participate in the funding of the future signal at WCR17/WCR 46;
- That an eastbound right-turn deceleration lane is needed at WCR 17/WCR 46 based on Town criteria;
- An acceleration lane on southbound WCR 17 exiting the Filing 2 access is referenced. This lane is called for based on the projected turning movement volumes relative to Town criteria;

- The potential need for an acceleration lane at WCR17/WCR 46 and WCR 46/Filing 1 access will need to be addressed during subdivision;
- Town should consider the potential impacts of all of the proposed improvements on the existing bridge and grade crossing WCR 17;
- This project will be expected to construct the west side of WCR 17 to a 2-lane major arterial;
- This project will be expected to construct the south side of WCR 46 to a 2-lane major arteria; and
- Sufficient right of way to accommodate the ultimate 4 lane manor arterial cross section will need to be reserved along both WCR 17 and WCR 46 along the Riverbend frontage.

Staff Concerns

Staff is concerned with the large amount of Floodway and Floodplain that encompasses the entire northern portion of this property. Construction of homes and subdivision improvements within the 1% ("100-year") regulatory Floodplain and/or the Floodway is not permitted, as the property currently sits. The applicant is working with FEMA to get a CLOMR (Conditional Letter of Map Revision) approved that will eliminate the Floodplain/Floodway conflict. Applicant is aware of this situation and has had conversations with the Town in regards to this matter. No additional Town approvals or development construction, beyond this high-level ODP, shall be considered until the CLOMR (Conditional Letter of Map Revision) is approved.

RECOMMENDED PLANNING AND ZONING COMMISSION FINDINGS AND MOTIONS

Item #1 - Zoning: Riverbend Estates – Change of Zone

It is recommended that Planning and Zoning Commission send a positive recommendation to Town Council that the requested change of zoning to PUD-R for the Riverbend Estates property be approved based upon the following findings:

1. The proposed zoning is consistent with the Town of Johnstown Comprehensive Plan.

2. The proposed zoning will allow the developer to continue to pursue development of this property, until such a time as ultimate development decisions are made.

Motion

Based on the application received, associated submittal materials, and the preceding analysis, the Planning & Zoning Commission finds that the request to change the zone district from PUD-MU to PUD-R for the Riverbend Estates property furthers the *Johnstown Area Comprehensive Plan* goals, and is compatible with all other applicable Town standards and regulations, and therefore moves to recommend to the Town Council approval of the request for PUD-R zoning for the Riverbend Estates property based upon the two findings as stated in the staff report.

Alternate Motion
Motion to Deny: "I move that the Commission recommend to the Town Council denial of the request for PUD-R zoning for the Riverbend Estates property based upon the following findings…"

Item #2 - Riverbend Estates ODP
It is recommended that Planning and Zoning Commission send a positive recommendation to Town Council that the Riverbend Estates ODP be approved based upon the following findings:

1. The proposed ODP is in agreement with the Johnstown Area Comprehensive Plan and its Future Land Use Map.

2. The level of development of the proposed ODP appears serviceable by Town systems, services and utilities, with required improvements that will be reflected in future development and construction plans.

3. The proposed ODP is in compliance with all Town codes, regulations, and standards and specifications.

Recommended Motion
Based on the application received, associated submittal materials, and the preceding analysis, the Planning & Zoning Commission finds that the request for the Riverbend Estates ODP furthers the *Johnstown Area Comprehensive Plan* goals, and is compatible with all other applicable Town standards and regulations, and therefore moves to recommend to the Town Council approval of the Riverbend Estates ODP based upon the findings as stated in the staff report.

Alternate Motions

A. Motion to Approve with Conditions: "I move that the Commission recommend to Town Council approval of the Riverbend Estates ODP with the following conditions…"

B. Motion to Deny: "I move that the Commission recommend to the Town Council denial of the Riverbend Estates ODP based upon the following…"

Planner:

Kristin N. Cote

Kristin Cote

Planner I

Reviewed by:

Kim Meyer

Kim Meyer

Planning & Development Director

Town of Johnstown

TOWN COUNCIL AGENDA COMMUNICATIONS

AGENDA DATE: November 1, 2021

SUBJECT: Ordinance 2021-214 Approving the P.U.D. Outline Development Plan for Riverbend Estates

ACTION PROPOSED: Hold Public Hearing and Consider Ordinance 2021-214 Approving the P.U.D. Outline Development Plan for Riverbend Estates, on First Reading

ATTACHMENTS:
1. Vicinity Map
2. Ordinance 2021-214
3. Proposed Riverbend Estates ODP Amendment 1
4. PZC Staff Report (09/15/21)
5. PZC Minutes (09/15/21)

PRESENTED BY: Kim Meyer, Planning & Development Director

AGENDA ITEM DESCRIPTION:

The Applicant is requesting to establish an updated Outline Development Plan (ODP) for the Riverbend Estates development to create a residential neighborhood, with an intention, illustrated in conceptual drawings, of creating 363 single family lots. This ODP would supersede prior plans for the site.

High level engineering reports, studies, and plans are reviewed as part of the Outline Development Plan review process. More detailed plans are analyzed with subequent more-detailed development plans. This high-level review or Riverbend Enstates also involved review of a proposed Conditional Letter of Map Revision (C-LOMR) submitted to FEMA and Colorado Water Conservation Board to address proposed modifications to the 1% (100-yr) regulatory floodplain that affects a large portion of this property. This C-LOMR is currently under review. The floodplain must be approved by FEMA to be modified, in accordance with their rules and regulations, prior to further Town approvals on future development plans and subdivision plats.

The Planning & Zoning Commission held a public hearing on September 15, 2021. Significant public input was provided, with many comments centered around concern for development in the floodplain areas on this parcel, concerns for loss of views from existing homes to the south and east, and traffic impacts. PZC Minutes have been provided (Attachment 5) and summarize the comments.

The Commission voted to recommend approval of the Riverbend Estates P.U.D. Outline Development Plan to the Town Council, with the findings that are contained in the attached staff report (Attachment 4) and reiterated in substance in the proposed Ordinance 2021-214 (Attachment 2).

LEGAL ADVICE:

The Town Attorney drafted the Ordinance.

FINANCIAL ADVICE:

NA

RECOMMENDED ACTION:

Approve Ordinance 2021-214 Approving the P.U.D. Outline Development Plan for Riverbend Estates, on First Reading.

SUGGESTED MOTIONS:

For Approval: Based on findings and analysis presented at this hearing, I move to approve Ordinance 2021-214 Approving the P.U.D. Outline Development Plan for Riverbend Estates, on first reading.

For Approval with Conditions: Based on findings and analysis presented at this hearing, I move to approve Ordinance 2021-214 Approving the P.U.D. Outline Development Plan for Riverbend Estates, with the following conditions, to be revised and updated prior to the Second Reading of the Ordinance, to include:

a.

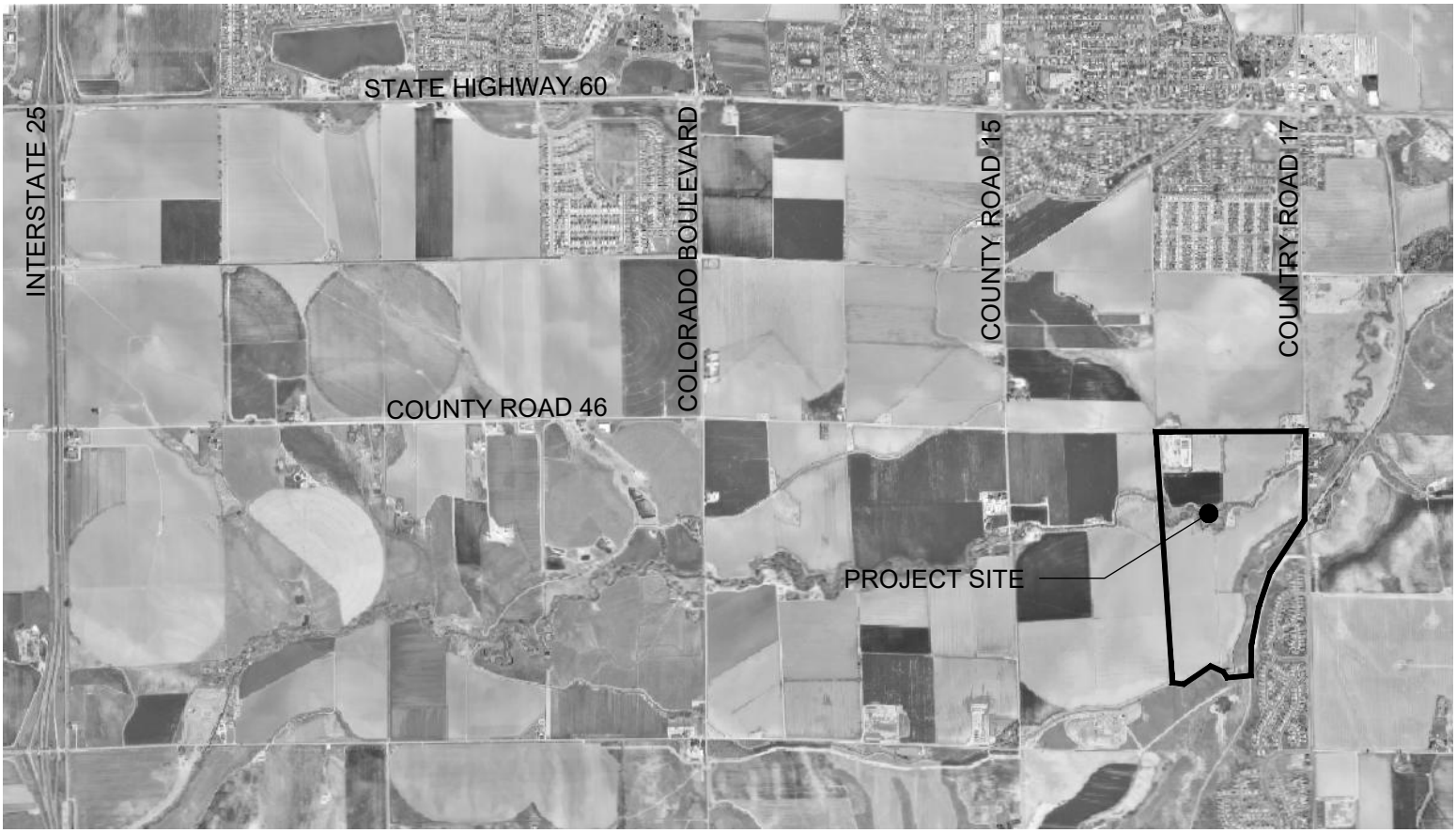
For Denial: Based on information presented in this hearing, I move to deny Ordinance 2021-214 as presented.

Reviewed and Approved for Presentation,

Town Manager

VICINITY MAP

SCALE: 1" = 3,000'



NORTH

RIVERBEND ESTATES SUBDIVISION

OUTLINE DEVELOPMENT PLAN
MARCH 30, 2021

JOHNSTOWN, COLORADO

TOWN OF JOHNSTOWN, COLORADO
ORDINANCE NO. 2021-214

APPROVING P.U.D. OUTLINE DEVELOPMENT PLAN FOR RIVERBEND ESTATES, LOCATED IN THE EAST HALF OF SECTION 17, TOWNSHIP 4 NORTH, RANGE 67 WEST OF THE 6TH P.M., COUNTY OF WELD, STATE OF COLORADO, CONSISTING OF APPROXIMATELY 171.414 ACRES

WHEREAS, the Town of Johnstown, Colorado ("Town") is a Colorado home rule municipality, duly organized and existing under the laws of the State of Colorado and the Town's Home Rule Charter; and

WHEREAS, the Town Council is vested with authority to administer the affairs of the Town; and

WHEREAS, Lee M. Lowrey and Riverbend Estates Partners, LLC, a Colorado limited liability company, submitted an application to the Town for approval of a P.U.D. Outline Development Plan for a subdivision known as Riverbend Estates, located in the East Half of Section 17, Township 4 North, Range 67 West of the 6th Principal Meridian, Town of Johnstown, County of Weld, State of Colorado, consisting of approximately 171.414 acres; and

WHEREAS, on September 15, 2021, the Planning and Zoning Commission held a public hearing and recommended approval of the Riverbend Estates P.U.D. Outline Development Plan; and

WHEREAS, on November 1, 2021, the Town Council held a public hearing concerning approval of the Riverbend Estates P.U.D. Outline Development Plan; and

WHEREAS, after considering the Planning and Zoning Commission's recommendation for approval, reviewing the file and conducting such public hearing, Town Council finds that the Riverbend Estates P.U.D. Outline Development Plan is consistent with, and furthers the goals of, the *Johnstown Area Comprehensive Plan* goals and is compatible with all other applicable Town standards and regulation; and

WHEREAS, based on the foregoing, the Town Council desires to approve the Riverbend Estates P.U.D. Outline Development Plan.

NOW, THEREFORE, BE IT ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF JOHNSTOWN, COLORADO, THAT:

Section 1. P.U.D. Outline Development Plan Approval. The Riverbend Estates P.U.D. Outline Development Plan, for property located in the East Half of Section 17, Township 4 North, Range 67 West of the 6th Principal Meridian, Town of Johnstown, County of Weld, State

of Colorado, consisting of approximately 171.414 acres, attached hereto and incorporated herein by reference as Exhibit A, is hereby approved.

Section 2. Supersede and Replace. The Riverbend Estates P.U.D. Outline Development Plan adopted herein shall supersede and replace prior development plans, including the Final Development Plan approved in 2005, for the Riverbend Estates subdivision.

Section 3. Effective Date. This Ordinance, after its passage on final reading, shall be numbered, recorded, published and posted as required by the Home Rule Charter of the Town of Johnstown, Colorado ("Charter") and the adoption, posting and publication shall be authenticated by the signature of the Mayor and the Town Clerk and by the Certificate of Publication. This Ordinance shall become effective upon final passage as provided by the Charter.

INTRODUCED AND APPROVED on first reading by the Town Council of the Town of Johnstown, Colorado, this _____ day of _____, 2021.

TOWN OF JOHNSTOWN, COLORADO

ATTEST:

By:_____ By:_____
Diana Seele, Town Clerk Gary Lebsack, Mayor

PASSED UPON FINAL APPROVAL AND ADOPTED on second reading by the Town Council of the Town of Johnstown, Colorado, this _____ day of _____, 2021.

TOWN OF JOHNSTOWN, COLORADO

ATTEST:

By:_____ By:_____
Diana Seele, Town Clerk Gary Lebsack, Mayor

RIVERBEND ESTATES PUD
OUTLINE DEVELOPMENT PLAN

21941 COUNTY ROAD 17, JOHNSTOWN, COLORADO 80534
APRIL 08, 2021

LEGAL DESCRIPTION

PARCEL 1: THAT PART OF THE NORTHEAST QUARTER OF SECTION 17, TOWNSHIP 4 NORTH, RANGE 67 WEST OF THE 6TH P.M., TOWN OF JOHNSTOWN, WELD COUNTY, COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHEAST CORNER OF SAID NORTHEAST QUARTER; THENCE WEST 274 FEET; THENCE SOUTH 200 FEET; THENCE EAST PARALLEL WITH THE NORTH LINE OF SAID NORTHEAST QUARTER, 274 FEET MORE OR LESS, TO THE EAST LINE OF SAID NORTHEAST QUARTER; THENCE NORTH ALONG SAID EAST LINE TO THE PLACE OF BEGINNING, COUNTY OF WELD, STATE OF COLORADO.

PARCEL 2: THAT PART OF THE EAST HALF OF SECTION 17, TOWNSHIP 4 NORTH, RANGE 67 WEST OF THE 6TH P.M., TOWN OF JOHNSTOWN, WELD COUNTY, COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS: BEGINNING AT A POINT ON THE NORTH LINE OF SAID SECTION 17, A DISTANCE OF 2395 FEET WEST OF THE NORTHEAST CORNER THEREOF; THENCE EAST 2121 FEET ALONG SAID NORTH LINE TO A POINT 274 FEET WEST OF THE NORTHEAST CORNER OF SAID SECTION 17; THENCE SOUTH 200 FEET PARALLEL WITH THE EAST LINE OF SAID SECTION 17; THENCE EAST 274 FEET PARALLEL WITH THE NORTH LINE OF SAID SECTION 17 TO A POINT ON THE EAST LINE THEREOF; THENCE SOUTH 1174 FEET ALONG SAID EAST LINE TO ITS INTERSECTION WITH THE WESTERLY RIGHT OF WAY LINE OF THE GREAT WESTERN RAILROAD; THENCE SOUTH 37 DEGREES 8' WEST 1033 FEET ALONG SAID WESTERLY RIGHT OF WAY LINE TO A POINT OF CURVE OF A CURVE TO THE LEFT; THENCE SOUTHWESTERLY 590 FEET ALONG SAID CURVE TO THE LEFT, WHOSE RADIUS IS 1400 FEET, TO A POINT OF TANGENT; THENCE FOLLOWING SAID WESTERLY RIGHT OF WAY LINE SOUTH 13 DEGREES 5' WEST 654 FEET TO A POINT OF CURVE OF A CURVE TO THE LEFT; THENCE SOUTHERLY 395 FEET ALONG SAID CURVE TO THE LEFT WHOSE RADIUS IS 1472.7 FEET, TO A POINT OF TANGENT; THENCE SOUTH 2 DEGREES 16' EAST 263 FEET ALONG SAID RIGHT OF WAY TO A POINT; THENCE SOUTH 85 DEGREES 47' WEST 325 FEET; THENCE NORTH 45 DEGREES 48' WEST 95.7 FEET; THENCE NORTH 45 DEGREES 33' WEST 94 FEET; THENCE NORTH 60 DEGREES 53' WEST 89.8 FEET; THENCE NORTH 83 DEGREES 54' WEST 76.5 FEET; THENCE SOUTH 71 DEGREES 50' WEST 61.3 FEET; THENCE SOUTH 56 DEGREES 58' WEST 502.5 FEET; THENCE NORTH 61 DEGREES 5' WEST 154 FEET; THENCE NORTHERLY 4159 FEET IN A STRAIGHT LINE TO THE PLACE OF BEGINNING, COUNTY OF WELD, STATE OF COLORADO.

NARRATIVE / OPERATIONAL PLAN

THIS OUTLINE DEVELOPMENT PLAN (ODP) PROVIDES A FRAMEWORK FOR THE PROPOSED RIVERBEND ESTATES RESIDENTIAL PUD. LOCATED A MILE FROM DOWNTOWN JOHNSTOWN, RIVERBEND ESTATES IS EASILY ACCESSED VIA MULTI-USE TRAILS AND THE ARTERIAL ROADS, TO THE NORTH & EAST.

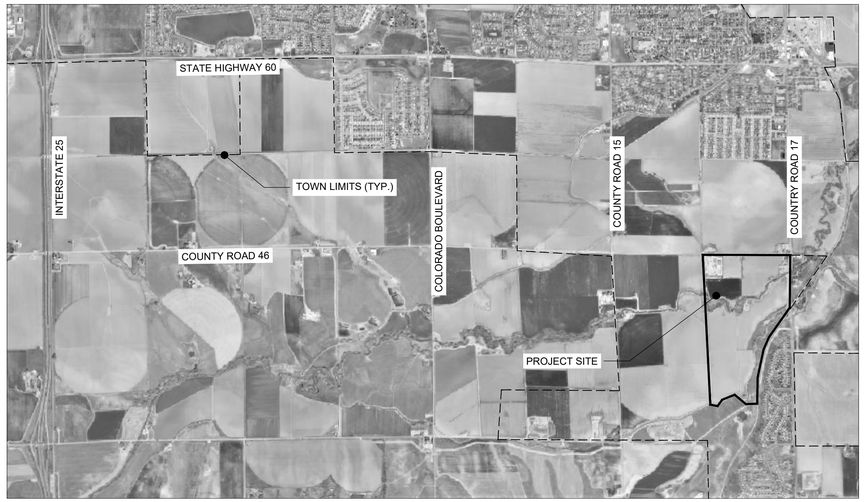
AS A PEDESTRIAN FRIENDLY COMMUNITY, RIVERBEND BOASTS NUMEROUS TRAILS, AS WELL AS, AN ABUNDANCE OF OPEN SPACE. THE LARGEST TRACT OF OPEN SPACE FOLLOWS THE LITTLE THOMPSON RIVER AS IT FLOWS THROUGH THE SITE, BETWEEN FILINGS 1 & 2.

RIVERBEND ESTATES IS CURRENTLY ZONED PUD-R. PUD ZONING PROVIDES FLEXIBILITY IN LOT SIZES & SETBACKS INSPIRING CREATIVITY IN HOUSING TYPES TO FIT THE MARKET DEMAND, WHILE ALLOWING FOR TRAILS & OPEN SPACE ADJACENT TO EACH LOT.

DEVELOPMENT PHASING

PHASING WILL OCCUR IN A LOGICAL AND COST EFFECTIVE MANNER BASED ON INFRASTRUCTURE EXTENSION, AVAILABILITY OF UTILITY SERVICE AND MARKET CONDITIONS. THE PROJECT WILL BE BUILT IN MULTIPLE PHASES, AS CONDITIONS DICTATE.

VICINITY MAP



NORTH

SCALE: 1" = 2,000'
0 1,000 2,000 4,000 6,000

GENERAL NOTES

1. ACCESS POINTS SHOWN ON THIS ODP ARE APPROXIMATE. EXACT LOCATIONS TO BE DETERMINED DURING THE PRELIMINARY AND FINAL PLATTING PROCESS, BASED ON THE FINAL TRAFFIC IMPACT STUDY.
2. LOCAL AND COLLECTOR STREETS MAY CHANGE LOCATION, SIZE AND CONFIGURATION AT TIME OF PLATTING. LOCAL AND COLLECTOR STREETS SHALL CONFORM TO THE TOWN OF JOHNSTOWN STREET STANDARDS AT THE TIME OF PLATTING.
3. ALL DENSITIES AND UNIT COUNTS ARE PROJECTIONS, FINAL DENSITIES TO BE DETERMINED AT TIME OF PLATTING. DENSITY OF ANY GIVEN PHASE SHALL NOT EXCEED 9 DU/AC. ACTUAL NUMBER OF UNITS WILL BE DETERMINED AT TIME OF PLATTING.
4. GROSS DENSITY SHALL NOT EXCEED 5 DU/AC.
5. AREAS OF DEVELOPMENT PARCELS SHOWN ARE APPROXIMATE AND MAY VARY. EXACT LOT SIZES WILL BE DETERMINED WITH EACH PRELIMINARY AND FINAL PUD SUBMITTAL.
6. FINAL CONFIGURATION OF PARCELS, OPEN SPACE AND STREETS MAY VARY FROM THAT SHOWN.
7. WHERE A PROPOSED USE IS NOT LISTED IN THE ODP, IT MAY BE ALLOWED IF DETERMINED BY THE TOWN OF JOHNSTOWN TO BE SIMILAR IN CHARACTER AND OPERATION, AND HAVING THE SAME OR LESSER IMPACT, AS USES THAT ARE ALLOWED.
8. ALL DRAINAGE ELEMENTS ARE CONCEPTUAL IN NATURE AND FINAL DETERMINATIONS OF THE DRAINAGE SYSTEM, TO INCLUDE THE PLACEMENT OF DETENTION/RETENTION PONDS, CHANNELS, AND STORM SEWER, WILL BE MADE DURING THE PRELIMINARY AND FINAL DRAINAGE REPORTS AND DURING THE PRELIMINARY DEVELOPMENT PLAN PROCESS AS A PART OF THE PLATTING.
9. LANDSCAPING, SIGNAGE, ARCHITECTURE, NON-RESIDENTIAL PARKING, FENCING AND LIGHTING FOR DEVELOPMENT WITHIN THIS PUD SHALL EITHER FOLLOW THOSE APPLICABLE STANDARDS IN THE TOWN OF JOHNSTOWN MUNICIPAL CODE OR THE DEVELOPER MAY FORMULATE DESIGN STANDARDS REGULATING THE DESIGN, CHARACTER, LOCATION AND OTHER DETAILS OF THESE ELEMENTS PRIOR TO THEIR IMPLEMENTATION. THE DEVELOPER FORMULATED DESIGN STANDARDS MUST RECEIVE APPROVAL BY THE PLANNING AND DEVELOPMENT DIRECTOR PRIOR TO IMPLEMENTATION.
10. THIS DOCUMENT IS FOR CONCEPTUAL PURPOSES, INTENDED ONLY TO SHOW THE FEASIBILITY OF DEVELOPMENT ON THIS PROPERTY.
11. AS PER FEMA MAP NUMBER 08069C1410G, EFFECTIVE 01/15/2021, A LARGE PORTION OF THIS PROPERTY IS WITHIN THE DESIGNATED FLOODPLAIN ZONE. ANY DEVELOPMENT THAT OCCURS ON THIS SITE MUST BE IN FULL COMPLIANCE WITH FLOODPLAIN RULES AND REGULATIONS.

PROJECT CONTACTS

OWNER / APPLICANT
LEE M. LOWREY
RIVERBEND ESTATES PARTNERS, LLC
4040 MACARTHUR BOULEVARD, SUITE 250
NEWPORT BEACH, CALIFORNIA 92660
(949) 566-8165
LMLOWREY@STERLINGPACIFICHOLDINGS.COM

LANDSCAPE ARCHITECT / PLANNER
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FRONTERRA DESIGN
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LOVELAND, COLORADO 80539
(970) 669-3737
JOSH@FRONTERRA.DESIGN

CIVIL ENGINEER
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WOHNRADE CIVIL ENGINEERS
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(720) 259-0965
MARY@WCECIVIL.COM

TRAFFIC ENGINEER
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IRONSTRIDE SOLUTIONS
7535 E HAMPDEN AVENUE, SUITE 400
DENVER, COLORADO 80231
(720) 290-0532
LOU@IRONSTRIDESOLUTIONS.COM

SURVEYOR
STEVE PARKS
MAJESTIC SURVEYING
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WINDSOR, COLORADO 80550
(970) 443-0882
STEVENP@MAJESTICSURVEYING.COM

SHEET INDEX

01 COVER SHEET
02 OUTLINE DEVELOPMENT PLAN
03 ILLUSTRATIVE CONCEPT PLAN
04 ODP DEVELOPMENT STANDARDS
05 MASTER UTILITY PLAN
06 MASTER GRADING & DRAINAGE PLAN

TOWN COUNCIL

THIS OUTLINE DEVELOPMENT PLAN, TO BE KNOW AS _____, IS APPROVED AND ACCEPTED BY THE TOWN OF JOHNSTOWN, BY ORDINANCE NUMBER _____, PASSED AND ADOPTED ON FINAL READING AT THE REGULAR MEETING OF THE TOWN COUNCIL OF THE TOWN OF JOHNSTOWN, COLORADO HELD ON THE _____ DAY OF _____, _____.

BY: _____
MAYOR

ATTEST: _____
TOWN CLERK

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FRONTERRA
LANDSCAPE ARCHITECTURE
PLANNING

TFG Design, LLC
P.O. Box 178
Loveland CO 80539
(970) 669.3737

JOSH@FRONTERRA.DESIGN

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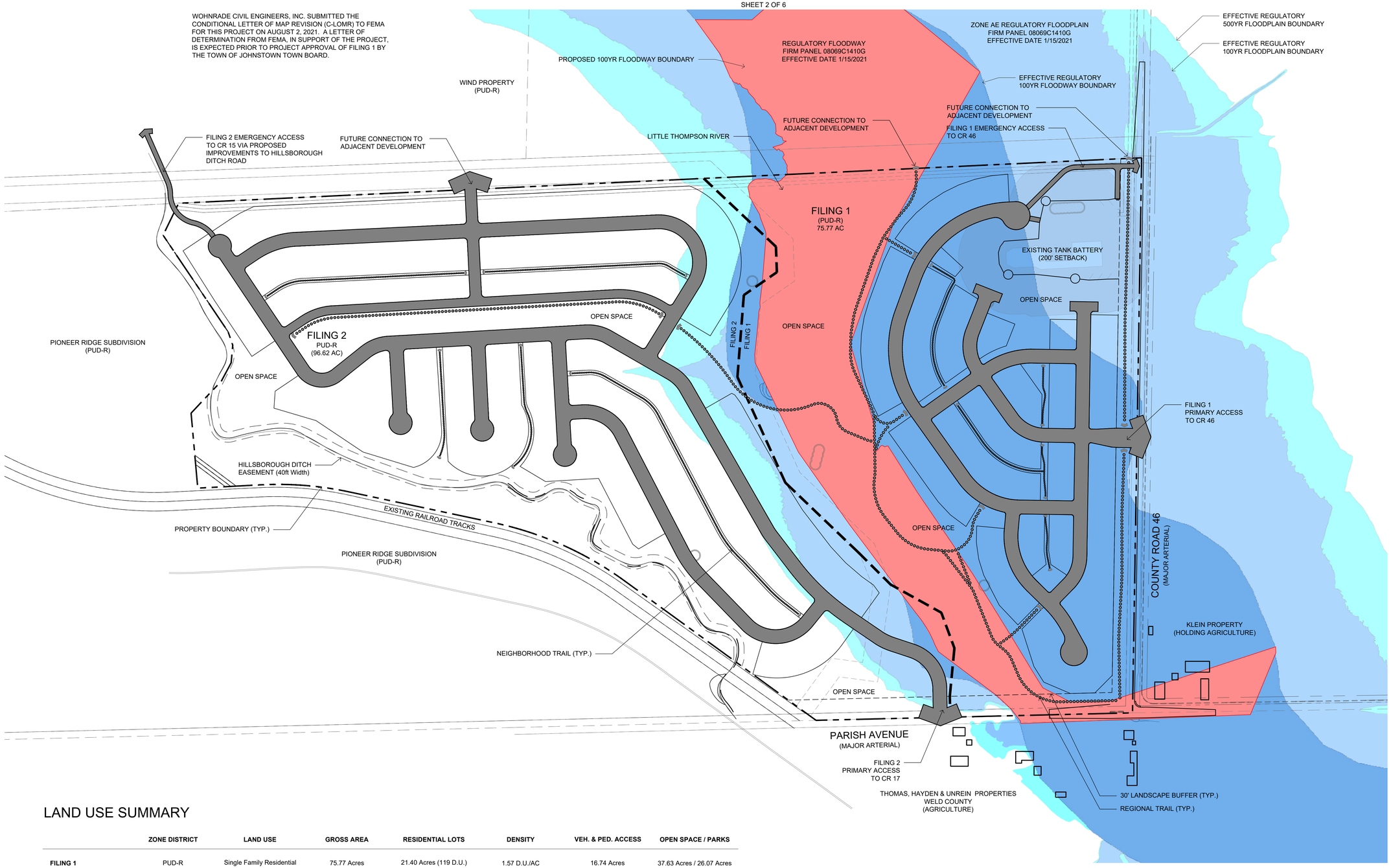
OUTLINE DEVELOPMENT PLAN
RIVERBEND ESTATES PUD

RIVERBEND ESTATES ANNEX
OUTLINE DEVELOPMENT PLAN
JOHNSTOWN, COUNTY OF WELD, STATE OF COLORADO
SHEET 2 OF 6

WOHNRADE CIVIL ENGINEERS, INC. SUBMITTED THE CONDITIONAL LETTER OF MAP REVISION (C-LOMR) TO FEMA FOR THIS PROJECT ON AUGUST 2, 2021. A LETTER OF DETERMINATION FROM FEMA, IN SUPPORT OF THE PROJECT, IS EXPECTED PRIOR TO PROJECT APPROVAL OF FILING 1 BY THE TOWN OF JOHNSTOWN TOWN BOARD.



LAND USE SUMMARY

	ZONE DISTRICT	LAND USE	GROSS AREA	RESIDENTIAL LOTS	DENSITY	VEH. & PED. ACCESS	OPEN SPACE / PARKS
FILING 1	PUD-R	Single Family Residential	75.77 Acres	21.40 Acres (119 D.U.)	1.57 D.U./AC	16.74 Acres	37.63 Acres / 26.07 Acres
FILING 2	PUD-R	Single Family Residential	96.62 Acres	50.54 Acres (244 D.U.)	2.53 D.U./AC	11.60 Acres	34.48 Acres / 11.64 Acres
OVERALL SITE	PUD-R	Single Family Residential	172.39 Acres	71.94 Acres (363 D.U.)	2.11 D.U./AC	28.34 Acres	72.11 Acres / 37.71 Acres

SCALE: 1" = 200'
0 100 200 400 600
NORTH

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PLANNING

TFG Design, LLC
P.O. Box
Loveland CO 80539
(970) 669.3737

josh@fronterra.design

OWNER:
Riverbend Estates Partners, LLC
4040 MacArthur Boulevard, Suite 250
Newport Beach, California 92660

lmlowrey@sterlingpacificholdings.com

RIVERBEND ESTATES PUD

OUTLINE DEVELOPMENT PLAN

21941 COUNTY ROAD 17
JOHNSTOWN, COLORADO 80534

WELD COUNTY

PROJECT INFORMATION:
PROJECT NUMBER: 298-2101JT
DATE: APRIL 08, 2021
PHASE: ODP

REVISIONS:
2021.06.22 ODP RESUBMITTAL 1
2021.08.09 ODP RESUBMITTAL 2

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SHEET TITLE:
OUTLINE DEVELOPMENT PLAN

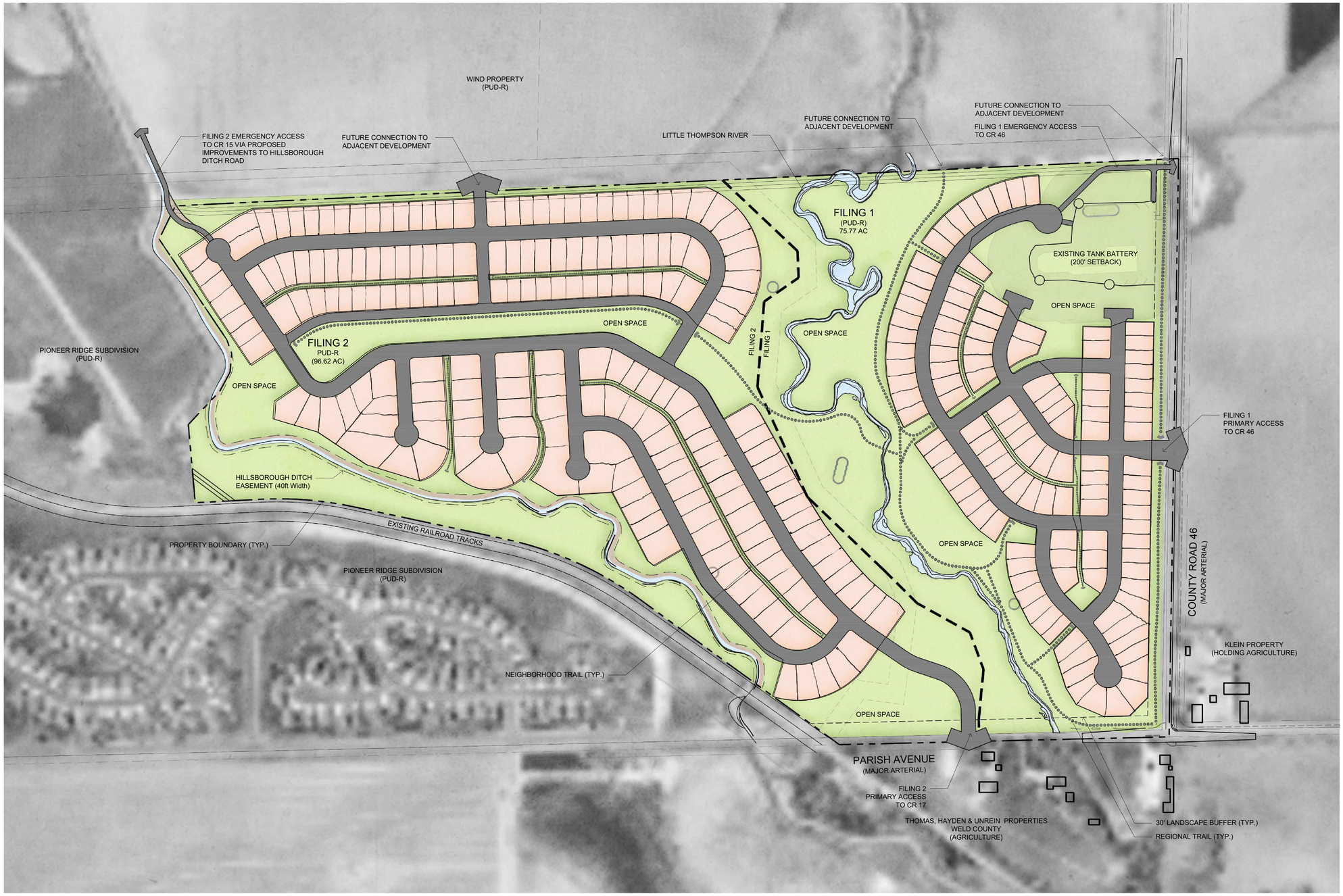
SHEET NUMBER:
ODP-2

SHEET **2** OF **6**

DRAWN BY: Josh
PLOT DATE: 8/9/2021 4:01 PM
FILE LOCATION: K:\Shared\Projects\298 Alvin Cadell Partners\06-2101JT Riverbend Estates\AutoCAD\ODP\ODP\Current\ODP-2 OUTLINE DEVELOPMENT PLAN.dwg

OUTLINE DEVELOPMENT PLAN
RIVERBEND ESTATES PUD

RIVERBEND ESTATES ANNEX
ILLUSTRATIVE CONCEPT PLAN
JOHNSTOWN, COUNTY OF WELD, STATE OF COLORADO
SHEET 3 OF 6



SCALE: 1" = 200'
0 100 200 400 600
NORTH

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josh@fronterra.design

OWNER:

Riverbend Estates Partners, LLC
4040 MacArthur Boulevard, Suite 250
Newport Beach, California 92660

lmlowrey@sterlingpacificholdings.com

RIVERBEND ESTATES PUD

OUTLINE DEVELOPMENT PLAN

21941 COUNTY ROAD 17
JOHNSTOWN, COLORADO 80534

WELD COUNTY

PROJECT INFORMATION:
PROJECT NUMBER: 298-2101JT
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2021.06.22 ODP RESUBMITTAL 1
2021.08.09 ODP RESUBMITTAL 2

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SHEET TITLE:
ILLUSTRATIVE CONCEPT PLAN

SHEET NUMBER:
ODP-3

SHEET 3 OF 6

Item #11.

OUTLINE DEVELOPMENT PLAN
RIVERBEND ESTATES PUD

RIVERBEND ESTATES ANNEX
ODP DEVELOPMENT STANDARDS
JOHNSTOWN, COUNTY OF WELD, STATE OF COLORADO

CONCEPTUAL ARCHITECTURE

DEVELOPMENT STANDARDS

SINGLE FAMILY DETACHED	
MINIMUM LOT SIZE	6,000 SF
MAXIMUM HEIGHT	35 FT
FRONT SETBACK TO BUILDING	15 FT
FRONT SETBACK TO GARAGE	20 FT
SIDE YARD SETBACK	5 FT
SIDE YARD CORNER SETBACK	10 FT
REAR YARD SETBACK	10 FT

ARCHITECTURAL DESIGN STANDARDS
VISTA COMMONS – DETACHED RESIDENTIAL

THE UNDERLYING GOAL OF THE GUIDELINES AND STANDARDS THAT FOLLOW IS TO ACHIEVE A HIGHLY FUNCTIONAL, AESTHETICALLY PLEASING NEIGHBORHOOD WITH MUCH ATTENTION PAID TO ARCHITECTURAL QUALITY AND SITE DESIGN. EMPHASIS IS PLACED ON DIVERSITY IN LOCATION, STYLE AND BUILDING FORM. OF PARTICULAR IMPORTANCE, IS FOUR-SIDED ARCHITECTURE AND AN OVERALL DESIGN THAT PROMOTES THE HOME'S ENTRY, WHILE DIMINISHING THE VISUAL PROMINENCE OF THE GARAGE.

FUNDAMENTAL OBJECTIVES:
- THE INCLUSION OF SEVERAL HOUSE MODELS WITH ALTERNATE MODEL ELEVATIONS FOR THE MOST POPULAR MODELS. ALTERNATE MODEL ELEVATIONS SHALL INCLUDE A SIGNIFICANT CHANGE IN THEIR APPEARANCE, SO AS TO BE UNRECOGNIZABLE AS THE SAME MODEL FROM THE STREET.
- INCORPORATE A VARIETY OF ARCHITECTURAL DETAILS, WALL ARTICULATION, MULTIPLE ROOF PLANES IN EACH HOME TO CREATE BALANCED DESIGNS THAT VARY IN MASSING AND SCALE.
- ACHIEVE AN APPEALING 'NEIGHBOR FRIENDLY' AESTHETIC BY VARYING SETBACKS BASED ON THE GARAGE LOCATION AND INCORPORATING A SIGNIFICANT FRONT PORCH.

GENERAL
INDIVIDUAL HOUSE STYLES ARE TO BE VARIED, BUT COMPLEMENTARY, USING MULTIPLE ARCHITECTURAL FEATURES SUCH AS, FRONT PORCHES WITH RAILING, VARYING ROOF PITCHES. HOUSES ARE TO HAVE WALLS THAT JOG AND SEVERAL ROOFLINES AND TRIM DETAILS TO PROVIDE A MORE COMPLEX ARCHITECTURAL STYLE. THE INTENT IS TO AVOID THE FEELING OF A MANUFACTURED DEVELOPMENT AND RATHER CREATE THE SENSE OF A NEIGHBORHOOD THAT GREW IN A WAY THAT WAS THOUGHTFULLY ORGANIC.

SETBACK
A WELL-DEFINED, STRONG STREET EDGE HELPS TO REINFORCE THE PEDESTRIAN ORIENTED GOALS OF THE COMMUNITY. WELL-ARTICULATED DWELLINGS WITH PROMINENT ENTRANCES AND FRONT PORCHES WILL BE REQUIRED. A BALANCED, VISUALLY INTERESTING, NON-GARAGE DOMINANT STREETSCAPE WITH A HUMAN SCALE, WILL BE ACHIEVED BY VARYING SETBACKS BASED ON THE HOME'S GARAGE LOCATION. MINIMUM SETBACKS OF ALL STRUCTURES SHALL BE A MINIMUM OF FIFTEEN (15) FEET FROM FRONT OF LOT AND FIVE (5) FEET FROM PROPERTY LINE ON ALL SIDE YARDS, EXCEPT ON CORNER LOTS, WHERE SIDE SETBACKS SHALL BE TEN (10) FEET FROM THE SIDEWALK. A TEN (10) FOOT MINIMUM SETBACK IS REQUIRED FROM THE REAR PROPERTY LINE.

SQUARE FOOTAGE
1,600 SQUARE FOOT MINIMUM FINISHED FLOOR ARE FOR MULTI-STORY WITH 1,000 SQUARE FEET ON THE MAIN FLOOR, 1,400 SQUARE FOOT MINIMUM FOR RANCHES. GARDEN LEVEL BASEMENTS WHERE POSSIBLE. THERE ARE TO BE A VARIETY OF SQUARE FOOTAGES AVAILABLE ON THE SAME STREET TO PROVIDE AESTHETIC VARIATION.

GARAGE
ALL GARAGE FACES SHALL COMPLIMENT, RATHER THAN DOMINATE, THE ARCHITECTURAL DETAILS OF DWELLING'S LIVING PORTION. GARAGES SHOULD NOT DOMINATE THE MASSING OF THE STREET-FACING FACADE. MASSING OF THE GARAGE SHOULD BE MINIMIZED BY GIVING THE HABITABLE PORTION OF THE DWELLING A LARGER AND MORE DOMINANT MASS, INTEGRATING THE MASSING OF THE GARAGE INTO THE MAIN MASSING OF THE DWELLING, POSITIONING THE MAIN FRONT WALL AND PORCH FACE CLOSER TO THE STREET AND LIMITING THE PROJECTION OF THE GARAGE. THE STREETSCAPE SHOULD INCLUDE A VARIETY OF GARAGE DOOR STYLES TO AVOID MONOTONY AND REPETITION OF A SINGLE GARAGE DOOR STYLE. WHERE THE GARAGE PROJECTS IN FRONT OF THE GROUND LEVEL WALL OR COVERED FRONT PORCH, A WINDOW IN THE INTERIOR SIDE OF THE GARAGE CONSISTENT WITH THE HEIGHT AND STYLE OF THE FRONT ELEVATION WINDOWS SHALL BE INCORPORATED. A MINIMUM OF A TWO-CAR GARAGE IS REQUIRED. GARAGES THAT HAVE DOORS FOR MORE THAN TWO (2) VEHICLES MUST HAVE ONE DOOR RECESSED A MINIMUM OF TWO (2) FEET FROM THE OTHERS. GARAGE DOORS, VISIBLE AS PART OF THE FRONT BUILDING ELEVATION, SHALL NOT COMPRISE MORE THAN FORTY (40) PERCENT OF THE GROUND FLOOR, STREET FACING, LINEAR BUILDING FRONTAGE. THE MAJORITY OF ALL DWELLING UNITS PROPOSED SHOULD HAVE GARAGES WHICH ARE EITHER FLUSH WITH OR RECESSED BEHIND THE GROUND FLOOR FRONT WALL OR COVERED FRONT PORCH. THE MAXIMUM GARAGE PROJECTION SHALL BE FIVE (5) FEET IN FRONT OF EITHER THE GROUND FLOOR FRONT WALL OR COVERED FRONT PORCH. THE SECOND STORY WALL FACE ABOVE THE GARAGE MUST NOT BE FLUSH WITH THE GARAGE AND AT LEAST SIXTY (60) PERCENT MUST SET BACK FURTHER THAN EIGHT (8) FEET FROM THE FRONT FACE OF THE GARAGE. GARAGES ARE TO HAVE VARIED LOCATIONS, INCLUDING DIFFERENT ROOF ANGLES AND VARIOUS SETBACKS FROM THE STREET. NO DETACHED GARAGES SHALL BE CONSTRUCTED ON A LOT.

DRIVEWAY
A MIX OF PAIRED AND UNPAIRED DRIVEWAY COMBINATIONS IS DESIRABLE TO CONTRIBUTE VISUAL INTEREST ALONG THE STREET AND TO PROVIDE SUFFICIENT SPACE FOR PARKWAY TREES. DRIVEWAY LOCATIONS SHALL BE PREDETERMINED ON THE PROJECT ENGINEER'S SITE PLANS. PRIORITY LOCATIONS AND PROMINENT VIEWS WITHIN THE COMMUNITY SHALL BE TAKEN INTO ACCOUNT IN THIS DETERMINATION. DRIVEWAYS SHALL BE LOCATED AS FAR AS POSSIBLE FROM OPEN SPACE, INSTITUTIONAL USES, COMMERCIAL SITES, WALKWAYS, TRANSIT STOPS AND INTERSECTIONS. CORNER LOT DRIVEWAYS SHALL BE ORIENTED TO THE SHORT SIDE OF THE LOT OR MINOR STREET. DRIVEWAY SURFACES SHALL BE COMPRISED OF CONCRETE, NATURAL STONE, BRICK OR DECORATIVE CONCRETE PAVERS. THERE WILL BE NO AGGREGATE PARKING PADS ALLOWED ON A LOT.

ROOF
ROOFS PLAY A SIGNIFICANT ROLE IN THE MASSING OF A DWELLING AND THE OVERALL BUILT FORM OF A RESIDENTIAL DEVELOPMENT. A VARIETY OF TRADITIONAL ROOF TYPES ARE ENCOURAGED, PARTICULARLY FOR ALTERNATE ELEVATIONS OF A MODEL. WITHIN THE DESIGN OF A STREETSCAPE, ATTENTION SHOULD BE PAID TO THE RELATIONSHIPS OF ADJACENT ROOF FORMS TO ENSURE APPROPRIATE TRANSITIONS. THE ROOF IS TO BE HIGH DEFINITION ROOF SHINGLES, ROOF SLOPE MINIMUM 6:12 PITCH WITH ROOF PITCHES VARYING FROM HOUSE TO HOUSE. SECONDARY ROOFS OF A MINIMUM 3:12 ARE ACCEPTED BUT NOT REQUIRED. OVERHANGS ARE TO BE A MINIMUM 24".

FRONT FACADE
THE MAIN ENTRANCE TO THE DWELLING SHOULD ACT AS THE FOCAL POINT OF THE DWELLING AND BE GIVEN APPROPRIATE DESIGN EMPHASIS. THE MAIN ENTRANCE SHALL BE DIRECTLY VISIBLE FROM THE STREET. A VARIETY OF FRONT DOOR STYLES IS REQUIRED, INCLUDING SOME WITH GLAZING. DECORATIVE DOOR SURROUNDS ARE REQUIRED IF A COVERED ENTRY FEATURE HAS NOT BEEN PROVIDED, INCLUDING THE USE OF GLAZED SIDELIGHTS AND TRANSOMS. FRONT PORCHES AND/OR INTERESTING ARCHITECTURAL ENTRY FEATURES ARE TO BE PROVIDED ON STREET-FACING FACADES IN ORDER TO RELATE TO THE PEDESTRIAN SCALE. A COVERED ENTRY FEATURE IS REQUIRED FOR AT LEAST FIFTY (50) PERCENT OF MODEL DESIGNS. WRAPAROUND PORCHES ARE REQUIRED FOR CORNER LOTS AND END LOTS ABUTTING OPEN SPACE. A COVERED FRONT PORCH SHOULD BE MAXIMIZED WHEREVER POSSIBLE. A MINIMUM DEPTH OF SIX (6) FEET SHOULD BE PROVIDED TO COMFORTABLY ACCOMMODATE CHAIRS, HOWEVER DEEPER PORCHES ARE ENCOURAGED. ALL PORCHES TO BE A MINIMUM OF THIRTY-SIX (36) SQUARE FEET IN AREA. HANDRAILS SHOULD BE CONSISTENT WITH THE CHARACTER OF THE HOUSE AND PAINTED TO MATCH THE TRIM.

SIDE FACADES
PROVIDE GROUND FLOOR PROJECTIONS, WINDOWS, AND OTHER ELEMENTS TO BREAK UP LONG WALL EXPANSES.

VERTICAL SUPPORT POSTS
COLUMN STYLES AND WIDTHS SHOULD BE CONSISTENT WITH THE CHARACTER OF THE HOUSE AND SHOULD TYPICALLY BE NO LESS THAN EIGHT (8) INCHES SQUARE OR DIAMETER.

FOUNDATION
EXPOSED FOUNDATION IS TO MEET MINIMUM CODE REQUIREMENTS BUT IS TO BE NO MORE THAN TWELVE (12) INCHES HIGH. EXPOSED CONCRETE, CONCRETE BLOCK FOUNDATIONS AND/OR DECK FOOTINGS WHICH EXCEED SIX (6) INCHES IN HEIGHT ABOVE FINISHED GRADE SHALL BE PAINTED TO BLEND WITH THE PRINCIPAL COLOR.

WALL CLADDING
THE CHOICE OF EXTERIOR CLADDING MATERIAL SHOULD BE COMPATIBLE WITH THE ARCHITECTURAL STYLE OF THE HOUSE. MAIN WALL CLADDING IS REQUIRED TO BE CONSISTENT ON ALL ELEVATIONS OF THE HOUSE TO AVOID THE EFFECT OF A FALSE FACADE. WHERE CHANGES IN MATERIALS DO OCCUR, THEY SHOULD HAPPEN AT LOGICAL LOCATIONS, SUCH AS, A CHANGE IN PLANE, WALL OPENING, DOWNSPOUT OR CORNER DETAIL. MATERIAL CHANGES WHICH HELP TO ARTICULATE THE TRANSITION BETWEEN THE BASE, MIDDLE AND TOP OF THE BUILDING ARE APPROPRIATE. THE USE OF SECONDARY MATERIALS WHICH BLEND HARMONIOUSLY WITH THE PRIMARY CLADDING MATERIAL ARE ENCOURAGED.

ARCHITECTURAL DETAILS
A VARIETY OF TRIM DETAILING IS REQUIRED WHERE ARCHITECTURALLY APPROPRIATE. TRIM BOARDS SHOULD BE ACCENTUATED BY USING A CONTRASTING BUT COMPATIBLE COLOR TO THAT OF THE CLADDING. THE SAME AMOUNT OF THOUGHT AND CARE SHOULD BE PUT INTO THE SELECTION AND INSTALLATION OF OTHER ARCHITECTURAL FEATURES, AS FOR MORE OBVIOUS FEATURES, SUCH AS ROOFS, DOORS AND WINDOWS; THESE MAY INCLUDE DOOR HANDLES AND HINGES, SHUTTERS AND LIGHTING.

GUTTERS/DOWNSPOUTS AND UTILITIES
GUTTERS AND DOWNSPOUTS ARE TO BE PAINTED A MATCHING COLOR TO THE SOFFITS AND FASCIA. DOWNSPOUTS, UTILITY BOXES, METERS, ETC. ARE TO BE LOCATED AS VISUALLY UNOBTRUSIVELY AS POSSIBLE. WHERE FEASIBLE, THEY SHOULD NOT BE VISIBLE FROM THE STREET.

COLORS
TRADITIONAL EARTH-TONE COLORS TO BLEND WITH THE CHARACTER OF THE NEIGHBORHOOD. ALL EXTERIOR RAILINGS, WOOD, ALL TRIM, SOFFITS, FASCIA AND ANY DECORATIVE BRACKETS ARE TO BE OF ONE COLOR AND ARE TO MATCH IN A COMPLEMENTARY, CONTRASTING COLOR TO THE MAIN HOUSE COLOR. ADEQUATE REPRESENTATIONS OF PROPOSED COLORS OR COLOR BOARDS MUST BE SUBMITTED FOR APPROVAL.

WINDOWS
ALL WINDOWS MUST BE WOOD, METAL CLAD, OR VINYL. ALUMINUM WINDOWS ARE NOT ALLOWED.

PLEASE NOTE:
THE PRECEDING ARCHITECTURAL STANDARDS SUPERSEDE ANY MUNICIPAL GUIDELINES. ADHERENCE TO THE MUNICIPAL GUIDELINES IS REQUIRED IF A SPECIFIC ARCHITECTURAL STANDARD IS NOT DESCRIBED HEREIN.

www.tfgdesign.com
FRONTERRA
LANDSCAPE ARCHITECTURE
PLANNING

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OWNER:
Riverbend Estates Partners, LLC
4040 MacArthur Boulevard, Suite 250
Newport Beach, California 92660
lmlowrey@sterlingpacificholdings.com

RIVERBEND ESTATES PUD
OUTLINE DEVELOPMENT PLAN
21941 COUNTY ROAD 17
JOHNSTOWN, COLORADO 80534
WELD COUNTY

PROJECT INFORMATION:
PROJECT NUMBER: 298-2101JT
DATE: APRIL 08, 2021
PHASE: ODP

REVISIONS:
2021.06.22 ODP RESUBMITTAL 1
2021.08.09 ODP RESUBMITTAL 2

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SHEET TITLE:
ODP DEVELOPMENT STANDARDS

SHEET NUMBER:
ODP-4

DRAWN BY: Josh PLOT DATE:8/9/2021 4:00 PM
FILE LOCATION: X:\Shared\Projects\298 Arbor Capital Partners\298-2101JT Riverbend Estates\AutoCAD\FDP\DWG\General\ODP-4 ODP DEVELOPMENT STANDARDS.dwg

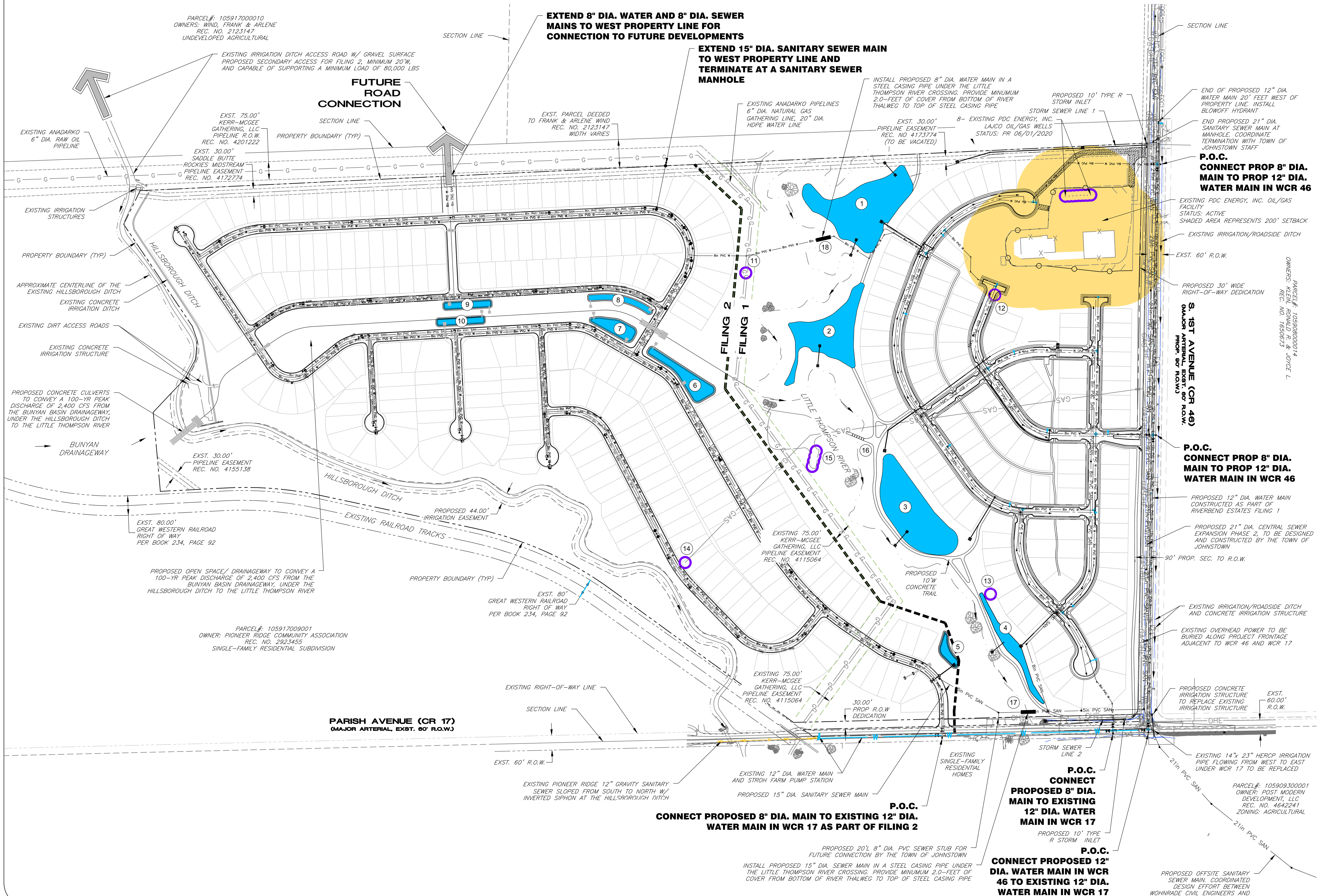
NOTE:
THIS DEVELOPMENT PROPOSAL IS BASED ON CURRENT CONCEPTUAL DRAWINGS AND DESIGN STANDARDS AND MAY CHANGE AS PART OF THE DEVELOPMENT REVIEW PROCESS

Riverbend Estates P.U.D.

				Sanitary Sewer Design Flows							Water Demands							
				Assumptions		Calculations					Assumptions (Section 2.2, Water System Design Standards)				Calculations			
Basin ID	Description	Acres	Units	Gallons per Capita per Day	Capita per Unit	Flow Rate (GPD)	Flow Rate (CFS)	Peaking Factor	Peak Flow Rate (GPD)	Peak Flow Rate (CFS)	Capita per Unit	Average Day Demand (Gallons per Day per Capita)	Maximum Day Demand (Gallons per Day per Capita)	Peak Hour Demand (Gallons per Day per Capita)	Average Flow Rate (GPD)	Maximum Flow Rate (GPD)	Peak Flow Rate (GPD)	Peak Flow Rate (CFS)
Filing 1	Single-Family Residential	75.77	119	80	2.76	26,275	0.039	4.362	114,609	0.172	3.0	150	2x Average Day Demand	1.5x Maximum Day Demand	53,550	107,100	160,650	0.241
Filing 2	Single-Family Residential	96.62	244	80	2.76	53,875	0.081	3.888	209,491	0.314	3.0	150	2x Average Day Demand	1.5x Maximum Day Demand	109,800	164,700	247,050	0.371
	Total	172.39	363															

GENERAL NOTES:

1. All existing oil/gas pipelines that are no longer in use shall be removed as part of Filing 1. See Riverbend Estates Subdivision Filing 1 Existing Conditions and Demolition Plan.
2. A future local road connection to properties to the west will be included as part of Filing 2 with a 60' right-of-way being dedicated on the Filing 2 Plat.
3. The proposed 21" diameter offsite sanitary sewer will be designed by the Town of Johnstown with design support from Wohnrade Civil Engineers, Inc..
4. Unless otherwise indicated herein, all onsite water and sewer mains in both Filing 1 and 2 shall be 8" diameter, with the exception of the 15" diameter sanitary sewer main to serve the property to the west.
5. Section 1.3 of the Town of Johnstown Sanitary Sewer Design Standards have been referenced in the preparation of design flow calculations for determining proposed peak sewer system demands for this project.
6. Section 1.2 of the Town of Johnstown Water System Design Standards have been referenced in the preparation of design flow calculations for determining proposed peak water system demands for this project. Assume 3.0 people per dwelling unit.
7. Fire hydrants shall be at a maximum 500-foot spacing for residential subdivisions, and shall have a minimum residual pressure of 20 psi during maximum day + fire flow, to provide minimum fire protection. As per Part III, paragraph 3.2.3 of the Town of Johnstown Water Design System Specifications.
8. Oil/gas setbacks shown on this plan are 200-feet from both existing wells and oil/gas facilities to proposed residential building footprints Setbacks from plugged and abandoned wells are 25-feet from the well to proposed building footprints.
9. This topographic survey was prepared by Wohnrade Civil Engineers using precision UAS aerial mapping. Supplemental survey was prepared by King Surveyors. Survey was prepared in February 2018.



NUMBERED LEGEND	
1 - 4	FILING 1 BIORETENTION PONDS
5 - 10	FILING 2 BIORETENTION PONDS
11 -15	PLUGGED AND ABANDONED WELLS
16	PROPOSED PEDESTRIAN BRIDGE CROSSING
17 - 18	PROPOSED STEEL CASING PIPE

LEGEND

Symbol	Description
12in PVC W	PROPOSED WATER MAIN
	PROPOSED GATE VALVE
	PROPOSED FIRE HYDRANT
	PROPOSED THRUST RESTRAINT
0.75IN TYPE K (W)	PROPOSED WATER SERVICE
8in PVC SAN	PROPOSED SEWER MAIN
6in PVC SAN (S)	PROPOSED SEWER SERVICE
18in RCP STRM	PROPOSED STORM SEWER OR CULVERT
18in RCP STRM	PROPOSED STORM SEWER W/ INLET
	PROPOSED SWALE
	PROPERTY BOUNDARY
	LIMITS OF DISTURBANCE
5020	EXISTING CONTOUR
20	PROPOSED CONTOUR
4650.00	EXISTING SPOT ELEVATION
5267.38 FL	PROPOSED SPOT ELEVATION
IRR	PROPOSED NON-POTABLE WATER
SS	EXISTING SEWER MAIN
12in PVC W	EXISTING WATER MAIN
	EXISTING WATER VALVE
	EXISTING FIRE HYDRANT
	EXISTING POWER POLE
	EXISTING POWER POLE W/ GUY WIRE
UE	EXISTING UNDERGROUND ELECTRIC
G	EXISTING UNDERGROUND GAS
FO	EXISTING FIBER OPTICS LINE
OHP	EXISTING POWER LINES
T	EXISTING TELEPHONE LINES
	EXISTING TELEPHONE PEDESTAL
	EXISTING STREET LIGHT
P	EXISTING POWER VAULT
18in RCP STRM	EXISITNG STORM SEWER
18in RCP STRM	EXISTING STORM SEWER AND INLET
	EXISTING STREET SIGN
X	EXISTING FENCE
M	EXISTING MAILBOX
	OIL/GAS 200' SETBACK
	DRAINAGE FLOW ARROW

200' 0 200' 400' 600'
1" =200'

Revisions:			
No.	Revisions:	By:	Date:

RIVERBEND ESTATES PARTNERS, LLC

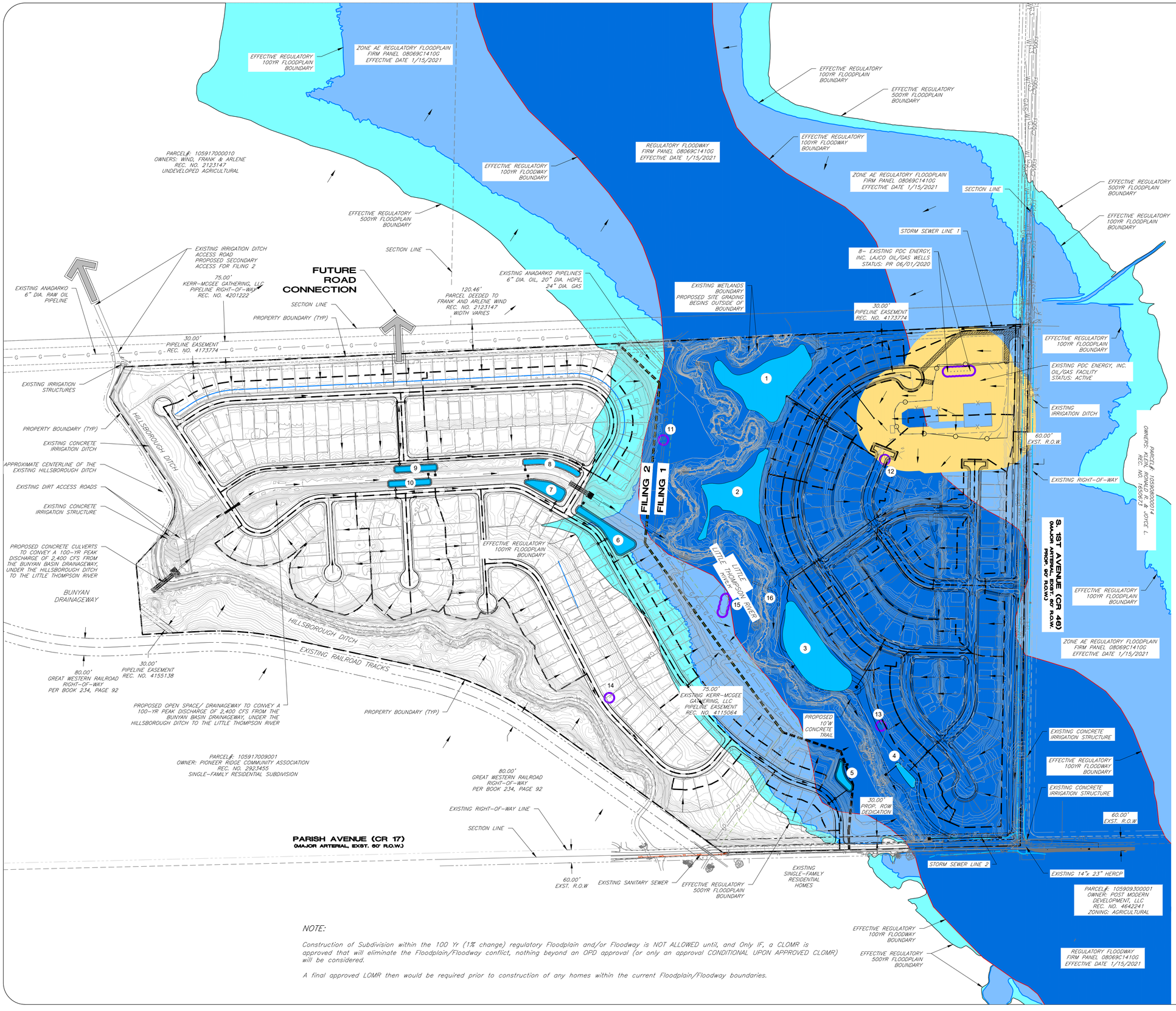
RIVERBEND ESTATES P.U.D.
OUTLINE DEVELOPMENT PLAN
JOHNSTOWN, COLORADO
MASTER UTILITY PLAN

WOHNRADE CIVIL ENGINEERS, INC.
11582 Colony Row
Broomfield, Colorado 80021
Phone: (720)259-0965
Fax: (720)259-1519

COLORADO REGISTERED MARY B. WOHNRADE 30325 PROFESSIONAL ENGINEER

Project: RIV: 2027.00
Date: 8/5/2021
Scale: 1:200
Designed By: JR
Reviewed By: MBW

ODP-5
of 6 Sheets



GENERAL NOTES:

1. All existing oil/gas pipelines that are no longer in use shall be removed as part of Filing 1. See Riverbend Estates Subdivision Filing 1 Existing Conditions and Demolition Plan.
2. A future local road connection to properties to the west will be included as part of Filing 2 with a 60' right-of-way being dedicated on the Filing 2 Plat.
3. The 100-yr Regulatory Floodplain delineations shown on this drawing are based on the Flood Insurance Rate Map (FIRM) 08069C1410G, Effective date January 15, 2021.
4. Wohnrade Civil Engineers, Inc. is currently in the process of preparing a Conditional Letter of Map Revision (C-LOMR) to FEMA for this project. A Letter of Determination from FEMA, in support of the project, is expected prior to project approval of Filing 1 by the Town of Johnstown Town Board.
5. Oil/gas setbacks shown on this plan are 150-feet from existing wells to proposed residential building footprints, and 200-feet from existing oil/gas facilities to proposed residential building footprints Setbacks from plugged and abandoned wells are 25-feet from the well to proposed building footprints.
6. This topographic survey was prepared by Wohnrade Civil Engineers using precision UAS aerial mapping. Supplemental survey was prepared by King Surveyors. Survey was prepared in February 2018.
7. This proposal is based on current conceptual drawings and details that may change as per the development process.
8. Roadway dedications will need to occur as required by the Town of Johnstown.

NUMBERED LEGEND	
1 - 4	FILING 1 WATER QUALITY PONDS
5 - 10	FILING 2 WATER QUALITY PONDS
11 -15	PLUGGED AND ABANDONED WELLS
16	PROPOSED PEDESTRIAN BRIDGE CROSSING

LEGEND

12in PVC W	PROPOSED WATER MAIN
	PROPOSED GATE VALVE
	PROPOSED FIRE HYDRANT
	PROPOSED THRUST RESTRAINT
0.75IN TYPE K W	PROPOSED WATER SERVICE
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SS SS	EXISTING SEWER MAIN
12in PVC W	EXISTING WATER MAIN
	EXISTING WATER VALVE
	EXISTING FIRE HYDRANT
	EXISTING POWER POLE
	EXISTING POWER POLE W/ GUY WIRE
UE UE	EXISTING UNDERGROUND ELECTRIC
G G	EXISTING UNDERGROUND GAS
FO FO	EXISTING FIBER OPTICS LINE
OHP OHP	EXISTING POWER LINES
T T	EXISTING TELEPHONE LINES
	EXISTING TELEPHONE PEDESTAL
	EXISTING STREET LIGHT
P	EXISTING POWER VAULT
18in RCP STRM	EXISTING STORM SEWER
18in RCP STRM	EXISTING STORM SEWER AND INLET
	EXISTING STREET SIGN
X	EXISTING FENCE
M	EXISTING MAILBOX
	OIL/GAS 150'-200' SETBACK
	DRAINAGE FLOW ARROW

NOTE:

Construction of Subdivision within the 100 Yr (1% change) regulatory Floodplain and/or Floodway is NOT ALLOWED until, and Only IF, a CLOMR is approved that will eliminate the Floodplain/Floodway conflict, nothing beyond an OPD approval (or only an approval CONDITIONAL UPON APPROVED CLOMR) will be considered.

A final approved LOMR then would be required prior to construction of any homes within the current Floodplain/Floodway boundaries.

No.	Revisions:	By:	Date:

RIVERBEND ESTATES PARTNERS, LLC

RIVERBEND ESTATES P.U.D.
OUTLINE DEVELOPMENT PLAN
JOHNSTOWN, COLORADO
MASTER GRADING AND DRAINAGE PLAN

WOHNRADE CIVIL ENGINEERS, INC.
11952 Colony Row
Broomfield, Colorado 80021
Phone: (720)539-1519
Fax: (720)539-1519

COLORADO REGISTERED PROFESSIONAL ENGINEER MARY B. WOHNRADE 30325

Project: RIV. 2027.00
Date: 9/8/2021
Scale: 1:200
Designed By: JR
Reviewed By: MBW

ODP-6

of 6 Sheets

Town of Johnstown

PLANNING & ZONING COMMISSION
AGENDA MEMORANDUM

ITEM: **#1: Public Hearing of Riverbend Estates Change of Zoning**
#2: Public Hearing of Riverbend Estates Outline Development Plan Amendment (ODP)

DESCRIPTION: Proposed Change of Zone to PUD-R zoning, with an Outline Development Plan (ODP) for 172.39 acres of single-family residential homes. 119 dwelling units are proposed in Phase 1 (1.72 DU/AC) and 244 dwelling units are proposed in Phase 2 allowing (2.53 DU/AC) for potentially 363 dwelling (2.11 DU/AC) units on this property.

LOCATION: Portions of the Northeast Quarter (NE ¼) and The East Half (E ½) of Section 17, Township 4 North, Range 67 West.

APPLICANT: Lee M. Lowry/Riverbend Estates Partners, LLC

STAFF: Kristin Cote, Planner I

HEARING DATE: September 15, 2021

ATTACHMENTS

1- Vicinity Map
2- Application
3- Outline Development Plan
4- Zoning Map
5- Public Comment

BACKGROUND & SUMMARY

The applicant, Lee M. Lowry/Riverbend Estates Partners, LLC, is requesting consideration of the Outline Development Plan (ODP) and zoning of PUD-R for 172.39 acres of land located in Section 17, Township 4 North, Range 67 West. This property was annexed into the Town of Johnstown on June 20, 2001 (Ordinance No. 2001-661).

The subject property is bordered on all sides by land within the Town of Johnstown, except for several small parcels directly east of the most northerly extension of this property, which is located in

unincorporated Weld County and is zoned AG (Agricultural). All the contiguous land within Town limits is zoned PUD-R with the exception of the land to the north which is zoned Holding Agriculture (HA).

The surrounding land uses are primarily agricultural. The exception to this is the existing Stroh Farms Filing 2 Subdivision which is south of this property and three (3) residential sites directly east of northerly portion of this site located in unincorporated Weld County. This property is bordered by WCR (Weld County Road) 46 to the North and Parish Avenue (WCR 17) to the east. The Great Western Railroad and the Hillsborough Ditch borders this site on its south and southeastern sides. The Little Thompson River runs through this property and splits what the developers of this site are proposing for phases 1 and 2.

HISTORY

Historically, the use of this property has been as an agricultural site used for farming. There are existing Oil and Gas wells on the northwest corner of this site and several agricultural outbuildings on the northeast corner of WCR (Weld County Road) 46 and Parish Avenue (WCR 17). This property was annexed into the Town June 20, 2001, and designated as a PUD Mixed Use (PUD-MU) zone by Ordinance No. 2001-661. The property owner made application to develop a subdivision on the area north of the river in 2002. That application was denied by the Board of Trustees in September 2002. As part of the original review process, the Planning and Zoning Commission held a public hearing and voted to recommend approval with conditions. The Board subsequently held a public hearing on the request, and expressed several questions and concerns before denying the application. The applicant subsequently filed a lawsuit against the Town in Weld County District Court. The applicant and Town were able to address the conditions and concerns expressed during the initial review process. In December 2003 the applicant withdrew the lawsuit and worked with the Town Planner to re-submit plans and a narrative. Subsequently, the Town approved a Final Development Plan (FDP) for the northern portion of this property in 2005 that allowed for the construction of 123 single family detached dwelling units in phase 1, no final plats were ever finalized or recorded, and that approval has expired. No additional action was taken after 2005 to develop this property until 2021, being in excess of the typical three (3) year vesting provided under Colorado Revise Statutes and Johnstown Municipal Code.

This property is located in the Little Thompson River 1% ("100-year") floodplain and the floodway. In the catastrophic rain event that occurred in 2013, flooding occurred within the entire northern portion of this property, in the location of proposed phase 1. This prompted FEMA to designate additional land adjacent to the Little Thompson River as Regulatory Floodway and Floodplain (FIRM Panel 08069C1410G/Effective Date 1/15/21). FEMA defines the Regulatory Floodway as "the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height." The developers are currently in process of seeking FEMA approval of a Conditional Letter of Map Revision (CLOMR) which would, if deemed acceptable, remove portions of this land from the "Floodway" and "Floodplain" designation, permitting development to occur. Without FEMA granting either a CLOMR (Conditional Letter of Map Revision) or a Letter of Map Revision (LOMR) this property will not be able to be developed as is being proposed in this ODP. Staff has had conversations with the developer regarding this matter

and they understand that the potential to develop this site is dependent on meeting the Town and FEMA's Floodplain rules and regulations.

NOTICE

Notice for the Planning & Zoning Commission hearing was published in the local paper of widest circulation, the Johnstown Breeze, on Thursday, August 26, 2021. This notice provided the date, time, and location of the Planning and Zoning Commission hearing, as well as a description of the project. Notices were mailed to all property owners within 500 feet of the property in question. This notice included a map of the proposed ODP and zoning map.

ANALYSIS

Johnstown Comprehensive Plan Alignment

Goal CF-2: Beautiful Town gateways and entries at major intersections - Gateways.

This ODP sits at the intersection of WCR 46 and Parish Avenue (WCR 17). Both of these are significant roadways; Parish Avenue is the Town's main street. The Riverbend Estates ODP would further enhance this important roadway and the gateway into the Town from the south.

Goal PG-2: Provide a variety of recreational opportunities for all ages and abilities that will draw the community together.

The proposed ODP sets aside 72.11 acres of open space/park land as well as provides for the continuation of a regional trail from the northeast corner of the property to the west property line. This helps the Town move forward with the establishment of our safe and comprehensive trail system that will provide regional connections and links to neighborhoods.

Goal PG-3: Preserve wetlands, wildlife habitats and natural areas, especially in conjunction with development along the Little and Big Thompson River corridors.

The proposed ODP preserves a large area of permanent open space, which encompasses the Little Thompson River. This will help to protect and enhance the integrity and quality of the natural environment within that river corridor.

Zoning

The current zoning for the property is PUD-MU as was established in 2001. The applicant requests that zoning designation be changed to PUD-R. The ODP would allow for the construction of single family detached houses. The PUD-MU zone does not allow for the construction of single family detached homes, per municipal code. The overall density requested is 2.11 DU's per acre.

ODP Development Standards

This ODP sets forth some basic development standards regarding setbacks, building heights, and lot sizes. More detailed design guidelines will be completed with the subdivision and development plan process. Development standards for residential uses across both residential planning areas will be consistent with one another. A minimum lot size of 6,000 square feet is proposed to be established as part of this ODP.

Proposed Infrastructure Concept

An existing 12-inch Town waterline runs north to south along Parish Avenue (WCR 17). A 12-inch loop will be made within each future phase, and continuing the water line in CR 46 for future development to the west. Both filings will likely propose planting drought resistant native prairie grasses and shrubs with a xeric drip irrigation system as part of the 30-foot arterial landscape buffer at the project boundaries and along WCR 46 and Parish Avenue (WCR 17).

The project is located within the Central Interceptor sewer service area under current Town sewer planning. The proposed sewer service will discharge to a future offsite 21-inch sanitary sewer main at the Parish Avenue (WCR 17) and WCR 46 intersection, which will flow northeast of the property to the proposed Johnstown Farm's lift station south of the Mountain View West development on WCR 46 ½. At the Town's request, with future construction and engineering design the proposed WCR 46 sewer main will be oversized to ensure this leg is sized for future flows from the west as well as require stubs for future connections for development on adjacent western properties.

Regarding transportation networks in the area, this property abuts, on both the north and east sides, major arterials. The primary north/south road through the community is Weld County Road (WCR) 17, named Parish Avenue through Johnstown. Weld County Road (WCR) 46 is considered a high priority road for future paving due to the existing and proposed developments within that general area. The improvements to WCR 46 will improve the accessibility of the existing I-25 interchange at SH (State Highway) 56 (WCR 44) for residents in the south part of Johnstown and it will also provide some relief to SH 60 through town. A summary of the improvements required for this potential development as presented by the Town Traffic Engineer are as follows:

- It is anticipated that this development would participate in the funding of the future signal at WCR17/WCR 46;
- That an eastbound right-turn deceleration lane is needed at WCR 17/WCR 46 based on Town criteria;
- An acceleration lane on southbound WCR 17 exiting the Filing 2 access is referenced. This lane is called for based on the projected turning movement volumes relative to Town criteria;

- The potential need for an acceleration lane at WCR17/WCR 46 and WCR 46/Filing 1 access will need to be addressed during subdivision;
- Town should consider the potential impacts of all of the proposed improvements on the existing bridge and grade crossing WCR 17;
- This project will be expected to construct the west side of WCR 17 to a 2-lane major arterial;
- This project will be expected to construct the south side of WCR 46 to a 2-lane major arteria; and
- Sufficient right of way to accommodate the ultimate 4 lane manor arterial cross section will need to be reserved along both WCR 17 and WCR 46 along the Riverbend frontage.

Staff Concerns

Staff is concerned with the large amount of Floodway and Floodplain that encompasses the entire northern portion of this property. Construction of homes and subdivision improvements within the 1% ("100-year") regulatory Floodplain and/or the Floodway is not permitted, as the property currently sits. The applicant is working with FEMA to get a CLOMR (Conditional Letter of Map Revision) approved that will eliminate the Floodplain/Floodway conflict. Applicant is aware of this situation and has had conversations with the Town in regards to this matter. No additional Town approvals or development construction, beyond this high-level ODP, shall be considered until the CLOMR (Conditional Letter of Map Revision) is approved.

RECOMMENDED PLANNING AND ZONING COMMISSION FINDINGS AND MOTIONS

Item #1 - Zoning: Riverbend Estates – Change of Zone

It is recommended that Planning and Zoning Commission send a positive recommendation to Town Council that the requested change of zoning to PUD-R for the Riverbend Estates property be approved based upon the following findings:

1. The proposed zoning is consistent with the Town of Johnstown Comprehensive Plan.

2. The proposed zoning will allow the developer to continue to pursue development of this property, until such a time as ultimate development decisions are made.

Motion

Based on the application received, associated submittal materials, and the preceding analysis, the Planning & Zoning Commission finds that the request to change the zone district from PUD-MU to PUD-R for the Riverbend Estates property furthers the *Johnstown Area Comprehensive Plan* goals, and is compatible with all other applicable Town standards and regulations, and therefore moves to recommend to the Town Council approval of the request for PUD-R zoning for the Riverbend Estates property based upon the two findings as stated in the staff report.

Alternate Motion
Motion to Deny: "I move that the Commission recommend to the Town Council denial of the request for PUD-R zoning for the Riverbend Estates property based upon the following findings…"

Item #2 - Riverbend Estates ODP
It is recommended that Planning and Zoning Commission send a positive recommendation to Town Council that the Riverbend Estates ODP be approved based upon the following findings:

1. The proposed ODP is in agreement with the Johnstown Area Comprehensive Plan and its Future Land Use Map.

2. The level of development of the proposed ODP appears serviceable by Town systems, services and utilities, with required improvements that will be reflected in future development and construction plans.

3. The proposed ODP is in compliance with all Town codes, regulations, and standards and specifications.

Recommended Motion
Based on the application received, associated submittal materials, and the preceding analysis, the Planning & Zoning Commission finds that the request for the Riverbend Estates ODP furthers the *Johnstown Area Comprehensive Plan* goals, and is compatible with all other applicable Town standards and regulations, and therefore moves to recommend to the Town Council approval of the Riverbend Estates ODP based upon the findings as stated in the staff report.

Alternate Motions

A. Motion to Approve with Conditions: "I move that the Commission recommend to Town Council approval of the Riverbend Estates ODP with the following conditions…"

B. Motion to Deny: "I move that the Commission recommend to the Town Council denial of the Riverbend Estates ODP based upon the following…"

Planner:

Kristin N. Cote

Kristin Cote

Planner I

Reviewed by:

Kim Meyer

Kim Meyer

Planning & Development Director

Town of Johnstown

PLANNING & ZONING COMMISSION MEETING

7:00 PM, Wednesday, September 15, 2021

SUMMARY MINUTES

Meeting called to Order by Chair Weber at 7:00. P.M.

Diana Seele, Town Clerk, was present to Swear-in new Commissioners: Jessica Salo, David Puccetti, and Scott Hayward. All took the oath of office and were duly sworn in.

Roll call attendance was taken: Present were Commissioners Grentz, Hayward, Puccetti, Salo, Storms, and Chairman Weber. Commissioner Flores was absent and excused.

Motion to approve the agenda as written. M: Grentz / 2nd: Hayward. Unanimous approval.

There were no Public Comments made about items not on the agenda.

Public Hearing was held for **Case# ZON21-0003 for Riverbend Estates Outline Development Plan**, a proposed residential development of 172.39 acres south of WCR 46 at the southwest corner of WCR 17, with proposed PUD-R (Residential) zoning district and an associated outline (master) development plan. This hearing included a proposed Change of Zoning from PUD-MU to PUD-R and an amended Outline Development Plan. Kristin Cote, Planner I, provided a Staff presentation and overview of the staff memo and the project to the Commission. Public comments received by staff thus far has centered around concerns related to development within the floodplain – one email comment from the Motts was delivered to the Commission at the hearing.

Lee Lowry (LL), Applicant, and Josh McCairn (JM), Fonterra Group, and Mary Wohnrade (MW), Wohnrade Partners, the engineer, were in attendance to make a presentation, as well, and answer questions.

Commission questions & Applicant responses:

- Floodplain questions? How much fill, how does that taper – to street?
    - MW: 6-8 feet of fill on the north to pull that out of the floodplain
    - 75-200,0000 cu yds. of fill. Plan is to excavate along either side in the “overbanks” – lowers Base Flood elevation (BFE) and generates fill. No retaining walls.
    - C-LOMR is being reviewed by FEMA/CWCB currently. Used standard FEMA modeling
    - Proposed floodplain will not encroach on lots – they will be pulled out of 0.2% (500-yr) floodplain, which is a higher standard.
    - Avoiding grading in the main stream bed to protect Preble’s jumping mouse habitat – will be creating new ponds and wetlands to enhance habitat.

- Lot grade difference is about 33', at finished grade, from Pioneer Ridge and the site.
- Grading impacts onto neighboring properties? Will not raise BFE, so will not create a higher impact on adjacent parcels. Wind property (to west) will be slightly lower adjacent to that parcel to the west. Also will help to avoid/mitigate overtopping of CR 46 in a flood event.
- Access onto CR 17 isn't most ideal location for an access. MW: situated as best we could between RR and bridge… with sight distance analysis, that location appears to be functional and safe.

Public comments:

- Dave Minor, 1662 Mallard Dr., questions the vehicle storage at the CR 17/46 intersection – and how the high school and other development in the area will impact the functionality of that eastern access. Concerned with raw water dedications.
- Eric Aakko, 1417 Mallard Dr. If there is another catastrophic flood, how would water and sewage be affected. Would that cause an impact to existing neighborhood? Timing on phases? Traffic concerns and expansion of CR 17
    - Around mouse habitat disturbance.
    - MW: Confirmed that utilities could not be tied into Pioneer Ridge; improvements should make the overall situation better.
- Paul Budoin(?), 1638 Mallard Dr. 2013 flood = lakefront property, major concerns with flooding.
- Jim Hatfield, 345 Hickory Ln.
    - Clarify impact on Preble's mouse and dredging the banks to lower the river. MW: Disturbance will stay outside the high/mod habitat areas, 30-100' from the river.
    - Note the 2013 flood.
- Kris Mott, 1602 Goldeneye Dr. Echos concerns with floodplains. Paid extra for "cornfield views" on the ridge. Peaceful, dark, views. Will affect home value. School capacities impacted by all this development. Oppose south development phase.
- Mike Hausmann, 1740 Canvasback Dr. 2013 flood. What's the buffer from south lots to PR homes? MW: 50-300'
- Bruce Tharcyss(?) 1626 Mallard. Traffic concerns on Parish Ave with cumulative impacts from school and development.
- Beverly (?) 1746 Canvasback Dr. Will the hill east of ditch remain? Any grading? MW: Not modifying that area near the ditch.

Hearing was closed. Commissioners had no additional discussion.
Motion to Recommend approval for the Change in Zoning: C. Grentz / 2nd Pucceti
Vote: 6-0
Motion to Recommend Approval for the Outline Development Plan : C. Grentz / 2nd Pucetti
Vote 5-0, C. Salo Abstained.

Kim Meyer gave a brief departmental report.
The meeting was adjourned at 8:50 PM.

Respectfully Submitted: Kim Meyer, Director Bruce Weber, Chair

_____

Town of Johnstown

TOWN COUNCIL AGENDA COMMUNICATIONS

AGENDA DATE: November 1, 2021

SUBJECT: Public Hearing: First Reading of Ordinance 2021-215 Repealing And Readopting Article IV Of Chapter 7 Of The Johnstown Municipal Code Concerning Waste Collection

ACTION PROPOSED: Consider First Reading of Ordinance 2021-215

ATTACHMENTS: 1. Ordinance 2021-215

PRESENTED BY: Matt LeCerf, Town Manager

AGENDA ITEM DESCRIPTION:

Enclosed for your review and consideration is Ordinance 2021-215 repealing and readopting Article IV of Chapter 7 regarding Waste Collection. The form of this ordinance addresses and proposes some of the following highlighted changes:

1. The requirement that any solid waste hauler operating in the Town acquire a Town business license and carry insurance for their operations.
2. Clarity regarding opt out provisions, specifically related to when the opt out provisions must take place in concert with timing of our utility billing system.
3. Regulations regarding when trash receptacles may be placed in the street for pick up and when they must be brought back to the home/residence.
4. Other services provided by the Town's Contracted Solid Waste Provider shall not be available to customers not enrolled in the Town's solid waste services. – *These services would include those such as the clean up day which we expect to reestablish in 2022. The Town is providing this service in 2021 through a voucher program and the service is available to all.*

With the exception of item 4 which was added since the ordinance draft was presented to Council at the last meeting, the document remains unchanged.

LEGAL ADVICE:

The Town Attorney drafted the Ordinance based on feedback from Council and Staff.

FINANCIAL ADVICE:

NA

RECOMMENDED ACTION: Approve Ordinance 2021-215 upon First Reading.

SUGGESTED MOTIONS:

For Approval: I move to approve Ordinance 2021-215 Repealing And Readopting Article IV Of Chapter 7 Of The Johnstown Municipal Code Concerning Waste Collection upon first reading.

For Denial: I move to deny Ordinance 2021-215 Repealing And Readopting Article IV Of Chapter 7 Of The Johnstown Municipal Code Concerning Waste Collection upon first reading.

Reviewed and Approved for Presentation,

Town Manager

TOWN OF JOHNSTOWN, COLORADO

ORDINANCE NO. 2021-215

AN ORDINANCE REPEALING AND READOPTING ARTICLE IV OF CHAPTER 7 OF THE JOHNSTOWN MUNICIPAL CODE CONCERNING WASTE COLLECTION

WHEREAS, the Town of Johnstown, Colorado ("Town") is a municipal corporation duly organized and existing under its Home Rule Charter adopted pursuant to Article XX of the Constitution of the State of Colorado; and

WHEREAS, the Town Council is vested with authority to administer the affairs of the Town; and

WHEREAS, Article IV of Chapter 7 of the Johnstown Municipal Code regulates waste collection services in the Town; and

WHEREAS, Town staff recommends that the waste collection regulations be amended to reflect, among other updates, that the Town shall provide recycling collection services in addition to residential waste collection services; and

WHEREAS, to effectuate the foregoing, the Town Council desires to amend and modify Article IV of Chapter 7 of the Johnstown Municipal Code; and

WHEREAS, the Town Council hereby finds, determines and declares that this Ordinance is promulgated under the general police power of the Town, that it is promulgated for the preservation of the public health, welfare, peace, safety and property and that this Ordinance is in the best interests of the citizens of the Town.

NOW, THEREFORE, BE IT ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF JOHNSTOWN, COLORADO, AS FOLLOWS:

Section 1. Article IV of Chapter 7 of the Johnstown Municipal Code is hereby repealed in its entirety and readopted to read as follows in its entirety:

ARTICLE IV – Waste Collection

ARTICLE IV – Waste Collection

Sec. 7-61. Town refuse collection services.

(a) Except as otherwise provided in this Article, the Town shall provide, by contract with a third party, refuse collection services for residents in the Town. Unless otherwise authorized by the Town Manager, the Town shall not provide refuse collection services to: (i) multifamily residences containing three or more units or (ii) non-residential customers, including commercial and industrial establishments.

(b) Customers may opt out of the Town-provided refuse collection services by notifying the Town Finance Director, in writing, at least twenty (20) days before the first day of the next month of the desire to cancel the service. Said customers shall not be eligible to participate in any services or benefits offered to customers who participate in the Town-provided refuse collection services. Said customers shall remain bound by all other parts of the ordinances of the Town concerning or pertaining to waste collection and removal.

(c) For purposes of this Article, *refuse collection services* shall include the collection and disposal of all trash, rubbish, garbage and other such waste material. *Refuse collection services* shall not include dumpster services nor shall it include disposal of refrigerators, washers, dryers and other large or bulky items or material that is or contains radioactive, volatile, corrosive, highly flammable, explosive, biomedical, infectious, biohazardous, toxic or hazardous material. Bulk refuse material not collected as part of the Town-provided refuse collection services shall be removed by separate arrangement with the Town's third-party contractor, another Town-licensed contractor or the resident in compliance with this Article.

Sec. 7-62. Town recycling collection services.

(a) Except as otherwise provided in this Article, the Town shall provide, by contract with a third party, recycling collection services in the Town. The recycling collection services shall be available to all customers utilizing the Town-provided refuse collection services.

(b) Customers may opt out of the Town-provided recycling collection services by notifying the Town Finance Director, in writing, at least twenty (20) days before the first day of the next month of the desire to cancel the service.

(c) For purposes of this Article, *recycling collection services* shall consist of the disposal of materials that are collected separately for the purpose of such materials being re-processed into new or different products or packaging materials, provided that such materials are designated as recyclable by the Town's third-party service provider.

Sec. 7-63. Specifications for containers.

(a) Customers utilizing the Town-provided refuse or recycling collection services shall place refuse and recycling materials in containers furnished by the Town's third-party service provider. Such containers shall be used, as appropriate to each container, only for the collection of refuse and recycling materials. On the day of collection, customers shall place the containers in a readily accessible location adjacent to the residential or non-residential unit for handling by the Town's third-party service provider. The containers shall not be overloaded by weight or volume. Said customers shall also comply with rules regarding the containers imposed by the Town's third party-service provider, including the location of the containers for pick-up and weight or volume restrictions

(b) Customers not utilizing the Town-provided refuse collection services shall place all refuse and, if applicable, recycling materials in suitable and enclosed containers furnished by such customer.

(c) Containers for refuse and recycling collection services shall be kept off the street, curb, sidewalk and all other public ways, except for the period beginning 6:00 p.m. on the day prior to the day of collection and ending 9:00 p.m. on the day of collection.

Sec. 7-64. Refuse collection providers.

(a) Refuse collection providers operating in the Town shall obtain, and maintain at all times when doing business in the Town, a Town business license.

(b) Refuse collection providers operating in the Town shall: (i) obtain, and maintain at all times when doing a business in the Town, comprehensive general and automobile liability insurance policies in an amount sufficient to protect against damage and liability that may arise from their activities in the Town; (ii) name the Town as an additional insured party on the liability insurance policies; and (iii) upon the Town's request, provide certificates of insurance coverage to the Town.

Sec. 7-65. Persons served by water taps to receive service and pay the costs and billing.

(a) Customers receiving Town-provided refuse or recycling collection services shall be billed and shall pay said charges monthly with such customer's water bill in the amount set forth by resolution of the Town Council in the Town Fee Schedule.

(b) For customers utilizing the Town-provided refuse or recycling collection services, the assessments for refuse and recycling collection services shall be determined by the individual water tap billings. Where more than one single family is living in a residential dwelling served by only one water tap, an additional charge shall be made for each single-family unit.

Sec. 7-66. Lien and collection of unpaid bills; cessation of service.

(a) The assessment provided in Section 7-65 shall be a lien against each lot or tract of land where said water tap serves until fully paid and shall have priority over all other liens except general taxes and prior special assessments. In case such assessments are not paid, the Town may certify the assessments to the County Treasurer who shall collect the assessments, together with a penalty for the cost of collection in the amount provided by law.

(b) In addition to the foregoing, the Town may proceed to collect any unpaid assessments in any other manner allowed by law and may cease providing refuse or recycling collection services.

Section 2. Severability. If any part or provision of this Ordinance, or its application to any person or circumstance, is adjudged to be invalid or unenforceable, the invalidity or unenforceability of such part, provision, or application shall not affect any of the remaining parts, provisions or applications of this Ordinance that can be given effect without the invalid provision, part or application, and to this end the provisions and parts of this Ordinance are declared to be severable.

Section 3. Code revisions. Minor changes such as the format and other changes to unify the revised Code may be necessary. The Town Clerk is hereby authorized to make such changes, provided that neither the intent nor substantive content will be altered by such changes.

Section 4. Publication; Effective Date; Recording. This Ordinance, after its passage on final reading, shall be numbered, recorded, published and posted as required by the Town's Home Rule Charter ("Charter") and the adoption, posting and publication shall be authenticated by the signature of the Mayor and the Town Clerk and by the Certificate of Publication. This Ordinance shall become effective upon final passage as provided by the Charter. Copies of the entire Ordinance are available at the office of the Town Clerk.

INTRODUCED, AND APPROVED on first reading by the Town Council of the Town of Johnstown, Colorado, this _____ day of _____, 2021.

TOWN OF JOHNSTOWN, COLORADO

ATTEST:

By:_____ By:_____

Diana Seele, Town Clerk Gary Lebsack, Mayor

PASSED UPON FINAL APPROVAL AND ADOPTED on second reading by the Town Council of the Town of Johnstown, Colorado, this _____ day of _____, 2021.

TOWN OF JOHNSTOWN, COLORADO

ATTEST:

By:_____ By:_____

Diana Seele, Town Clerk Gary Lebsack, Mayor

Town of Johnstown

TOWN COUNCIL AGENDA COMMUNICATIONS

AGENDA DATE: November 1, 2021

SUBJECT: Public Hearing: Amended Proposed 2022 Budget

ACTION PROPOSED: No Action – Public Hearing Only

ATTACHMENTS:
1. Exhibit A – FY 2022 Proposed Budget
2. Exhibit B – FY 2022 Proposed Changes

PRESENTED BY: Mitzi McCoy, Finance Director

The Town of Johnstown Home Rule Charter, Section 12.5, and Colorado Revised Statutes 29-1-108(1) require that a public hearing be held at a regular meeting of the Town Council to give interested citizens an opportunity to file or register objections or suggestions thereto at any time prior to the adoption of the 2022 Budget.

The original proposed 2022 budget was presented to the Town Council on September 27, 2021 and October 25, 2021. The proposed budget that was originally presented to the Town Council has been amended to reflect Council suggestions, updates to revenue projections as well as other changes that better reflect the current and expected future financial position of the Town.

The amended 2022 Proposed Budget includes a number of important features including the continuation of core services provided by the Town, including police services, planning services, water, sewer, and storm utility services, parks and open space maintenance, cemetery maintenance, municipal courts, transportation networks, infrastructure, building and construction oversight, and various administrative duties including human resources, finance and administration.

In addition to the core services, a number of capital items that will produce significant outcomes for the community are also addressed in the budget. These improvements are a result of the Council goals and objectives and implementation of the various plans that have been developed with the Council, Staff and most importantly, the Community. Some of the more notable items that have been included in the budget are as follows:

- General Fund
  - Solar panel system for the recreation center
  - Video upgrades for Council chambers
  - Downtown Improvement Plan
  - Land Use Code rewrite
  - Design for Police Department building expansion
- Parks and Open Space Fund
  - Cemetery irrigation improvements
  - Construction of pickleball courts
  - Construction of a dog park
  - Lake/Dam rehabilitation
- Street and Alley Fund
  - Street maintenance program
  - Charlotte Avenue reconstruction/improvements
  - Alley resurfacing program
- Capital Projects Fund
  - I-25 and Highway 60 Interchange aesthetic improvements
  - 2nd Street bridge carryover
  - Aesthetic improvements at Highway 402 and I-25
- Water Fund
  - Water Tower project and trunk line construction continued
  - Design engineering for water plant expansion
  - Easement acquisition for raw water improvements
  - Lone Tree generator
  - Tank cathodic protection
- Storm Water Fund
  - Charlotte Avenue improvements
  - MS4 permit plans and standards
- Sewer Fund
  - Low Point construction
  - Central Phase I and II construction
  - Design of Central Waste Water Treatment Plant

While service delivery is either maintained at a consistent level or improved, we expect expenditures to increase when measured across all funds. Managing this increase is only possible when revenues and existing fund balance exceed the project expenditures. Should revenues not come in as expected, it is possible that these expenditures could change and be decreased. As always, we will monitor these on a continuous basis for any abnormalities.

The budget parallels the methods of accounting used for the Town's funds. Modified accrual basis is used for all governmental fund operations. Proprietary and fiduciary funds use full accrual basis. Under the modified accrual basis of accounting, revenues are recognized as soon as they are both measurable and available and expenditures are recorded when a liability is incurred except for debt service and compensated absences. Under the full accrual basis of accounting, revenues are recorded when earned and that expenditures are recorded when a liability is incurred without consideration of the timing of related cash flows. The basis of accounting used in the budget is the same basis of accounting used in the financial statements. The figures presented in the budget represent the estimated cash balances for the budget year 2022.

LEGAL ADVICE:

A public hearing is required per state and local law.

FINANCIAL ADVICE :

This public hearing will maintain our compliance with both state and local regulations.

RECOMMENDED ACTION:

No action is necessary this is a public hearing.

Reviewed and Approved for Presentation,

Town Manager

TOWN OF JOHNSTOWN
ANNUAL BUDGET
FY 2022

GENERAL FUND EXPENSE SUMMARY

	Personnel Services	Contract Services	Commodity	Other Charges	Total Operating Costs	Capital Outlay	Impact Outlay	Debt Service	Total
Council	28,200	250,300	8,500	600,500	887,500	45,000	-	-	932,500
Town Manager	876,150	422,925	51,523	173,995	1,524,593	120,000	-	-	1,644,593
Town Clerk	400,750	91,000	8,900	9,100	509,750	-	-	-	509,750
Finance	161,810	206,700	42,000	7,000	417,510	-	-	-	417,510
Planning	537,800	177,300	25,380	11,648	752,128	7,750	-	-	759,878
Bldg Inspections	79,900	188,500	1,700	1,300	271,400	-	-	-	271,400
Police	3,817,300	349,800	231,280	117,200	4,515,580	140,000	223,000	-	4,878,580
Public Works	699,100	15,650	34,550	11,900	761,200	-	-	-	761,200
Buildings	-	217,650	6,000	24,600	248,250	45,000	-	-	293,250
Reimbursements	-	300,000	-	-	300,000	-	-	-	300,000
Totals	$6,601,010	$2,219,825	$409,833	$957,243	$10,187,911	$357,750	$223,000	$0	$10,768,661

Total Cash Available	$	40,047,916
Ending Fund Balance	$	29,279,255
% of Total Budget	61.30%	20.61%	3.81%	8.89%	94.61%	3.32%	2.07%	0.00%	100.00%

	GENERAL FUND REVENUES	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	ADVALOREM TAXES					
10.01.3110.00	PROPERTY TAXES - WELD	3,906,704	3,902,086	3,960,825	3,902,200	3,989,176
10.01.3112.00	PROPERTY TAXES - LARIMER	4,390,740	5,694,270	4,294,777	5,694,300	4,291,259
	SUBTOTAL	8,297,444	9,596,356	8,255,602	9,596,500	8,280,435
	SALES TAX					
10.01.3120.00	SALES TAX - STATE	6,995,866	5,401,537	5,896,405	7,950,000	6,685,380
10.01.3122.00	USE TAX - BUILDING	776,152	1,217,564	220,020	1,218,600	750,000
	SUBTOTAL	7,772,018	6,619,100	6,116,425	9,168,600	7,435,380
	EXCISE TAX					
10.01.3130.00	LODGING TAX	108,128	95,484	75,000	98,500	111,900
10.01.3150.00	TOBACCO TAX	37,250	13,783	22,000	17,500	25,000
10.01.3160.00	SEVERANCE TAX	361,590	104,279	75,000	104,250	75,000
	SUBTOTAL	506,968	213,547	172,000	220,250	211,900
	FRANCHISE TAX					
10.01.3180.00	FRANCHISE TAX-CABLE	31,236	15,062	23,000	26,000	26,000
10.01.3184.00	FRANCHISE TAX - ELECTRIC & GAS	468,467	307,878	350,000	432,500	475,000
	SUBTOTAL	499,703	322,941	373,000	458,500	501,000
	LICENSES, PERMITS, & SERVICE CHARGES					
10.01.3210.00	BUSINESS LICENSES	14,776	19,198	16,250	19,200	15,000
10.01.3215.00	CONTRACTORS LICENSES	28,450	22,800	16,250	23,000	28,000
10.01.3220.00	DOG LICENSE/FEES	1,018	727	1,500	750	1,500
10.01.3230.00	LIQUOR LICENSE	4,771	5,118	3,500	5,120	3,500
10.01.3510.00	ABATEMENT FEES	6,031	2,045	-	2,100	500
10.01.3520.00	ADMINISTRATIVE FEES	7,083	5,791	4,000	5,800	3,000
10.01.3530.00	BUILDING PERMITS	757,889	770,028	500,000	799,000	750,000
10.01.3546.00	PLAN REVIEW FEE	750	-	-	-	-
10.01.3548.00	ZONING/SUBDIVISION FEES	-	-	2,000	-	-
10.01.3565.00	FACILITY RENTAL FEES	(490)	939	350	1,350	250
10.01.3750.00	POLICE FACILITIES DEVELOPMENT FEES	356,833	206,131	109,950	208,330	109,950
10.01.3760.00	PUBLIC FACILITITES IMPACT FEES	743,048	513,617	238,350	518,384	238,350
	SUBTOTAL	1,920,159	1,546,393	892,150	1,583,034	1,150,050

	GENERAL FUND REVENUES	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	FINES, FORFEITURES, & PD FEES					
10.01.3310.00	COURT REVENUES	134,780	179,292	108,000	183,500	145,000
10.01.3320.00	COURT SURCHARGE	14,097	17,725	14,000	17,925	15,500
	SUBTOTAL	148,877	197,017	122,000	201,425	160,500
	OTHER REVENUES					
10.01.3960.00	INTEREST INCOME	159,581	82,864	112,000	82,950	52,500
10.01.3970.00	MISC REVENUE	439,346	6,851	11,000	8,000	15,000
10.01.3985.00	REFUND OF EXPENDITURES	341,508	564,995	100,000	574,000	150,000
10.01.3990.00	RENT INCOME	6,600	5,375	7,200	7,200	6,600
	SUBTOTAL	947,035	660,085	230,200	672,150	224,100
	REVENUE FROM OTHER AGENCIES					
10.01.3420.00	ROYALTIES	391,633	57,915	40,000	57,920	25,000
10.01.3440.00	STATE GRANTS	793,679	87,190	10,000	87,190	87,500
	SUBTOTAL	1,185,312	145,104	50,000	145,110	112,500
	EVENTS & COMMUNITY ACTIVITIES					
10.01.3953.00	DONATIONS/COMMUNITY ACTIVITIES	79	1,147	500	1,150	500
	SUBTOTAL	79	1,147	500	1,150	500
	TOTAL FUND REVENUES	**21,277,594**	**19,301,690**	**16,211,877**	**22,046,719**	**18,076,365**
	INTRAGOVERNMENTAL REVENUES					
10.01.3999.00	TO LIBRARY	(1,143,334)	(853,243)	(1,137,657)	(1,318,443)	(1,140,000)
10.01.3999.00	TO WATER FUND	(811,362)	-	(5,000,000)	-	(40,000,000)
10.01.3999.00	TO REC CENTER	-	-	(750,000)	-	-
10.01.3999.00	TO PARKS	-	-	-	-	(1,112,000)
10.01.3999.00	TO STREETS	(2,000,000)	-	-	-	-
10.01.3999.00	TO TAX FUND	(403,646)	(382,483)	(354,800)	(525,000)	(585,000)
	SUBTOTAL	(4,358,342)	(1,235,726)	(7,242,457)	(1,843,443)	(42,837,000)
	TOTAL FUND REVENUES W/TRANSERS	16,919,252	18,065,964	8,969,420	20,203,276	(24,760,635)

GENERAL FUND REVENUES	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
UNRESTRICTED CASH BALANCE FORWARD					64,808,551
TOTAL ANTICIPATED FUNDS AVAILABLE					40,047,916
RESTRICTED FOR IMPACT - POLICE (AS OF 12/2020)			1,695,915		
Less 2021 Budgeted Expenses:					
Substation Rent			(18,500)		
PD Expansion review			(30,000)		
Copier for substation			(6,000)		
Vehicle for new officer			(64,000)		
Equipment for new officer			(7,850)		
RESTRICTED FOR IMPACT - POLICE (AS OF 12/2021)			**1,569,565**		
RESTRICTED FOR IMPACT - PUB FAC (AS OF 12/2020)			4,365,114		
Less 2021 Budgeted Expenses:					
Council Chamber Upgrades			(54,000)		
RESTRICTED FOR IMPACT - PUB FAC (AS OF 12/2021)			**4,311,114**		

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Personnel Services					
10.10.4001.00	Salaries	29,597	30,037	22,800	38,000	25,000
10.10.4010.00	Payroll Taxes	2,238	2,309	1,800	2,800	2,000
10.10.4025.00	Workers Compensation	1	12	1,200	100	1,200
	Total Personnel Services	31,836	32,358	25,800	40,900	28,200
	Contractual Services					
10.10.4100.00	Audit	8,500	8,500	18,000	8,500	18,000
10.10.4135.00	Other Contractual Services	17,412	6,750	21,800	41,800	20,300
10.10.4140.00	Postage	-	-		-	-
10.10.4145.00	Printing & Advertising	24,538	6,423	12,000	10,000	19,000
10.10.4150.00	Professional Services	118,549	124,704	131,000	131,000	175,000
10.10.4180.00	Travel & Training	129	70	15,000	5,000	18,000
	Total Contractual Services	169,127	146,447	197,800	196,300	250,300
	Commodities					
10.10.4310.00	Computers & Software	17,555	-	4,000	2,000	5,000
10.10.4385.00	Supplies - General	7,511	512	4,000	1,500	2,500
10.10.4400.00	Supplies - Office	583	-	1,000	200	1,000
	Total Commodities	25,649	512	9,000	3,700	8,500
	Other Charges					
10.10.4530.00	Election Expenses	29,853	-	-	-	38,000
10.10.4540.00	Insurance	35,961	92,427	79,800	94,500	126,000
10.10.4560.00	Memberships & Subscriptions	38,208	41,976	47,800	47,800	50,000
10.10.4570.00	Miscellaneous	1,348,732	385,176	1,286,000	1,286,000	386,500
	Total Other Charges	1,452,754	519,580	1,413,600	1,428,300	600,500
	Capital - $5,000/item min.					
10.10.4830.00	Equipment	-	49,655	54,000	54,000	45,000
10.10.4880.00	Water Shares	-	275,400	-	275,400	-
	Total Capital	-	325,055	54,000	329,400	45,000
	Total Budget Request	**1,679,366**	**1,023,952**	**1,700,200**	**1,998,600**	**932,500**

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Personnel Services					
10.20.4001.00	Salaries	146,388	218,631	378,000	378,000	398,800
10.20.4002.00	Overtime	-	-	500	500	500
10.20.4010.00	Payroll Taxes	10,118	16,426	28,900	28,900	31,400
10.20.4020.00	Unemployment Taxes	2,160	360	3,550	3,550	3,950
10.20.4025.00	Workers Compensation	370	13,192	4,500	4,500	4,900
10.20.4030.00	Group Insurance	21,723	40,290	92,300	92,300	58,900
10.20.4035.00	Retirement Contribution	11,641	18,885	27,400	27,400	47,900
10.20.4040.00	Automobile Allowance	-	-	6,000	6,000	6,000
10.20.4045.00	Cell Phone Allowance	-	-	600	600	600
	Total Personnel Services	192,401	307,784	541,750	541,750	552,950
	New Personnel					
10.20.4001.00	Salaries	-	-	-	-	221,000
10.20.4010.00	Payroll Taxes	-	-	-	-	17,400
10.20.4020.00	Unemployment Taxes	-	-	-	-	2,600
10.20.4025.00	Workers Compensation	-	-	-	-	2,900
10.20.4030.00	Group Insurance	-	-	-	-	52,700
10.20.4035.00	Retirement Contribution	-	-	-	-	26,600
	Total New Personnel	-	-	-	-	323,200
	Contractual Services					
10.20.4120.00	Employee Education	-	-	1,000	1,000	3,000
10.20.4135.00	Other Contractual Services	37,073	8,898	15,000	15,000	60,700
10.20.4140.00	Postage	-	26	1,500	1,500	3,150
10.20.4145.00	Printing & Advertising	7,216	8,868	52,400	52,400	46,100
10.20.4150.00	Professional Services	7,091	70,144	130,000	130,000	252,000
10.20.4170.00	Telephone & Internet	2,645	2,122	6,910	5,000	8,900
10.20.4180.00	Travel & Training	2,982	2,365	20,000	20,000	52,075
	Total Contractual Services	57,007	92,423	226,810	223,900	422,925

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Commodities					
10.20.4310.00	Computers & Software	9,595	5,103	11,530	11,530	31,873
10.20.4330.00	Fuel & Lubricants	754	894	890	890	1,000
10.20.4385.00	Supplies - General	3,617	9,124	12,000	12,000	10,350
10.20.4400.00	Supplies - Office	1,706	2,980	4,000	4,000	8,300
	Total Commodities	15,672	18,101	28,420	28,420	51,523
	Other Charges					
10.20.4540.00	Insurance	3,321	2,117	4,800	4,801	5,400
10.20.4560.00	Memberships & Subscriptions	5,290	1,480	15,000	15,000	17,595
10.20.4570.00	Miscellaneous	88,960	22,891	136,500	136,500	151,000
	Total Other Charges	97,572	26,488	156,300	156,301	173,995
	Capital - $5,000/item min.					
10.20.4830.00	Equipment	29,155	-	-	-	-
10.20.4840.00	Infrastructure	-	-	15,000	15,000	120,000
	Total Capital	29,155	-	15,000	15,000	120,000
	Total Budget Request	**391,807**	**444,796**	**968,280**	**965,371**	**1,644,593**

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Personnel Services					
10.30.4001.00	Salaries	173,077	141,676	211,800	211,800	243,100
10.30.4002.00	Overtime	-	-	500	500	500
10.30.4010.00	Payroll Taxes	12,561	10,585	16,340	16,340	18,900
10.30.4020.00	Unemployment Taxes	-	-	2,100	2,100	2,250
10.30.4025.00	Workers Compensation	471	123	2,300	2,300	2,400
10.30.4030.00	Group Insurance	30,872	25,988	44,700	44,700	56,400
10.30.4035.00	Retirement Contribution	8,907	8,252	14,300	14,300	28,500
	Total Personnel Services	225,888	186,624	292,040	292,040	352,050
	New Personnel					
10.30.4001.00	Salaries	-	-	-	-	18,000
10.30.4010.00	Payroll Taxes	-	-	-	-	1,300
10.30.4020.00	Unemployment Taxes	-	-	-	-	350
10.30.4025.00	Workers Compensation	-	-	-	-	150
10.30.4030.00	Group Insurance	-	-	-	-	26,600
10.30.4035.00	Retirement Contribution	-	-	-	-	2,300
	Total New Personnel	-	-	-	-	48,700
	Contractual Services					
10.30.4135.00	Other Contractual Services	7,558	3,572	10,500	10,500	14,800
10.30.4140.00	Postage	1,349	696	2,400	2,400	2,400
10.30.4145.00	Printing & Advertising	588	401	1,500	1,000	1,000
10.30.4150.00	Professional Services	54,624	55,334	53,500	62,000	62,000
10.30.4160.00	Rents	942	358	2,500	2,500	2,500
10.30.4170.00	Telephone & Internet	4,092	2,653	7,940	4,600	6,500
10.30.4180.00	Travel & Training	741	450	3,100	2,500	1,800
	Total Contractual Services	69,893	63,464	81,440	85,500	91,000
	Commodities					
10.30.4310.00	Computers & Software	10,526	10,963	25,825	14,000	2,400
10.30.4330.00	Fuel & Lubricants	1,465	1,658	2,700	2,700	3,000
10.30.4400.00	Supplies - Office	1,677	1,872	3,500	3,500	3,500
	Total Commodities	13,668	14,493	32,025	20,200	8,900

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Other Charges					
10.30.4540.00	Insurance	6,737	4,309	4,880	4,880	4,600
10.30.4560.00	Memberships & Subscriptions	443	136	1,000	1,000	1,000
10.30.4570.00	Miscellaneous	494	2,756	2,500	3,100	3,500
	Total Other Charges	7,673	7,201	8,380	8,980	9,100
	Capital - $5,000/item min.					
10.30.4830.00	Equipment	8,632	-	-	-	-
	Total Capital	8,632	-	-	-	-
	Total Budget Request	**325,754**	**271,782**	**413,885**	**406,720**	**509,750**

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Personnel Services					
10.40.4001.00	Salaries	115,819	73,944	93,700	95,700	116,300
10.40.4002.00	Overtime	13	50	500	500	500
10.40.4010.00	Payroll Taxes	8,462	5,620	7,300	7,300	8,900
10.40.4020.00	Unemployment Taxes	-	-	1,100	1,100	1,350
10.40.4025.00	Workers Compensation	337	82	2,400	2,400	2,560
10.40.4030.00	Group Insurance	16,892	10,554	15,780	15,780	18,600
10.40.4035.00	Retirement Contribution	7,212	5,428	6,800	6,800	13,600
	Total Personnel Services	148,736	95,678	127,580	129,580	161,810
	Contractual Services					
10.40.4135.00	Other Contractual Services	26,451	16,081	106,810	121,500	191,850
10.40.4140.00	Postage	4	-	450	450	450
10.40.4145.00	Printing & Advertising	1,498	-	3,200	500	3,000
10.40.4150.00	Professional Services	-	200	-	200	-
10.40.4170.00	Telephone & Internet	2,175	1,753	5,290	2,900	3,900
10.40.4180.00	Travel & Training	30	595	6,000	2,000	7,500
	Total Contractual Services	30,158	18,629	121,750	127,550	206,700
	Commodities					
10.40.4310.00	Computers & Software	3,410	-	5,700	1,000	38,800
10.40.4400.00	Supplies - Office	2,643	1,777	3,200	2,900	3,200
	Total Commodities	6,052	1,777	8,900	3,900	42,000
	Other Charges					
10.40.4540.00	Insurance	1,702	800	1,900	1,100	1,900
10.40.4560.00	Memberships & Subscriptions	-	190	600	600	600
10.40.4570.00	Miscellaneous	802	843	4,500	2,500	4,500
	Total Other Charges	2,504	1,833	7,000	4,200	7,000
	Total Budget Request	**187,450**	**117,917**	**265,230**	**265,230**	**417,510**

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Personnel Services					
10.50.4001.00	Salaries	181,207	150,823	211,500	211,500	230,200
10.50.4002.00	Overtime	-	-	-	-	-
10.50.4010.00	Payroll Taxes	12,855	11,027	16,200	16,200	18,300
10.50.4020.00	Unemployment Taxes	-	-	1,900	1,900	2,600
10.50.4025.00	Workers Compensation	366	2,183	2,400	2,400	2,650
10.50.4030.00	Group Insurance	43,071	39,110	35,920	49,800	59,900
10.50.4035.00	Retirement Contribution	11,943	9,929	13,800	13,800	28,500
	Total Personnel Services	249,442	213,072	281,720	295,600	342,150
	New Personnel					
10.50.4001.00	Salaries	-	-	-	-	105,600
10.50.4010.00	Payroll Taxes	-	-	-	-	8,300
10.50.4020.00	Unemployment Taxes	-	-	-	-	2,400
10.50.4025.00	Workers Compensation	-	-	-	-	2,350
10.50.4030.00	Group Insurance	-	-	-	-	64,200
10.50.4035.00	Retirement Contribution	-	-	-	-	12,800
	Total New Personnel	-	-	-	-	195,650
	Contractual Services					
10.50.4120.00	Employee Education	-	-	1,000	-	-
10.50.4135.00	Other Contractual Services	94,993	2,911	156,400	10,000	162,100
10.50.4137.00	Contractual - Restricted Bill Back	247,215	375,807	150,000	425,000	-
10.50.4140.00	Postage	438	150	500	450	600
10.50.4145.00	Printing & Advertising	329	368	500	500	600
10.50.4150.00	Professional Services	6,563	8,737	12,000	10,000	-
10.50.4170.00	Telephone & Internet	2,175	1,753	5,290	5,290	6,000
10.50.4180.00	Travel & Training	341	-	6,500	2,000	8,000
	Total Contractual Services	352,054	389,726	332,190	453,240	177,300
	Commodities					
10.50.4310.00	Computers & Software	4,893	8,459	17,600	17,600	20,380
10.50.4400.00	Supplies - Office	2,258	860	4,000	2,000	5,000
	Total Commodities	7,152	9,319	21,600	19,600	25,380
	Other Charges					
10.50.4540.00	Insurance	4,881	1,823	4,200	1,950	3,600

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
10.50.4560.00	Memberships & Subscriptions	894	-	2,030	-	4,548
10.50.4570.00	Miscellaneous	5,340	2,800	-	2,900	3,500
	Total Other Charges	11,115	4,623	6,230	4,850	11,648
	Capital - $5,000/item min.					
10.50.4830.00	Equipment	6,450	-	-	-	7,750
10.50.4860.00	Vehicles	131,281	-	-	-	-
10.50.4890.00	Other Improvements	-	3,169	-	3,200	-
	Total Capital	137,731	3,169	-	3,200	7,750
	Total Budget Request	**757,493**	**619,909**	**641,740**	**776,490**	**759,878**

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Contractual Services					
10.50.4137.00	Contractual - Restricted Bill Back	-	-	-	-	300,000
	Total Contractual Services	-	-	-	-	300,000
	Total Budget Request	**-**	**-**	**-**	**-**	**300,000**

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Personnel Services					
10.60.4001.00	Salaries	53,363	39,069	56,500	56,500	63,500
10.60.4002.00	Overtime	-	-	500	500	500
10.60.4010.00	Payroll Taxes	4,106	3,050	4,450	4,450	4,900
10.60.4020.00	Unemployment Taxes	-	-	550	550	650
10.60.4025.00	Workers Compensation	73	44	600	600	650
10.60.4030.00	Group Insurance	17	552	2,000	2,000	2,000
10.60.4035.00	Retirement Contribution	2,256	1,690	2,400	2,400	7,700
	Total Personnel Services	59,815	44,405	67,000	67,000	79,900
	Contractual Services					
10.60.4135.00	Other Contractual Services	154,054	120,513	180,350	180,700	181,300
10.60.4140.00	Postage	2	-	700	200	200
10.60.4145.00	Printing & Advertising	326	-	1,000	700	700
10.60.4150.00	Professional Services	-	-	-	-	5,000
10.60.4170.00	Telephone & Internet	487	370	2,630	700	1,300
10.60.4180.00	Travel & Training	-	-	500	-	-
	Total Contractual Services	154,870	120,883	185,180	182,300	188,500
	Commodities					
10.60.4310.00	Computers & Software	89	2,178	5,270	3,500	500
10.60.4400.00	Supplies - Office	487	271	700	500	700
10.60.4430.00	Supplies - Training	-	-	-	500	500
	Total Commodities	576	2,449	5,970	4,500	1,700
	Other Charges					
10.60.4540.00	Insurance	1,690	421	1,000	450	1,000
10.60.4560.00	Memberships & Subscriptions	175	283	200	300	300
	Total Other Charges	1,905	704	1,200	750	1,300
	Total Budget Request	**217,166**	**168,441**	**259,350**	**254,550**	**271,400**

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Personnel Services					
10.70.4001.00	Salaries	1,884,423	1,438,675	2,089,378	2,089,378	2,462,500
10.70.4002.00	Overtime	15,808	7,010	37,000	28,000	37,000
10.70.4003.00	Off-Duty Work	6,716	-	30,000	20,000	30,000
10.70.4010.00	Payroll Taxes	139,806	108,605	162,575	162,575	197,200
10.70.4020.00	Unemployment Taxes	-	-	18,250	18,250	19,050
10.70.4025.00	Workers Compensation	60,026	41,176	146,000	146,000	148,000
10.70.4030.00	Group Insurance	326,168	247,913	387,400	387,400	463,500
10.70.4035.00	Retirement Contribution	105,472	86,066	114,950	114,950	289,700
	Total Personnel Services	2,538,420	1,929,445	2,985,553	2,966,553	3,646,950
	New Personnel					
10.70.4001.00	Salaries	-	-	-	-	93,900
10.70.4002.00	Overtime	-	-	-	-	500
10.70.4010.00	Payroll Taxes	-	-	-	-	7,300
10.70.4020.00	Unemployment Taxes	-	-	-	-	2,250
10.70.4025.00	Workers Compensation	-	-	-	-	1,800
10.70.4030.00	Group Insurance	-	-	-	-	53,200
10.70.4035.00	Retirement Contribution	-	-	-	-	11,400
	Total New Personnel	-	-	-	-	170,350
	Contractual Services					
10.70.4120.00	Employee Education	2,783	(410)	3,000	2,000	-
10.70.4122.00	Maintenance - Buildings	51,108	611	2,000	1,600	-
10.70.4125.00	Maintenance - Equipment	254	-	1,600	1,600	-
10.70.4130.00	Maintenance - Vehicles	14,563	23,470	21,850	25,900	25,000
10.70.4135.00	Other Contractual Services	90,163	112,126	179,700	182,500	193,500
10.70.4140.00	Postage	1,858	2,027	5,000	4,000	5,000
10.70.4145.00	Printing & Advertising	474	402	1,000	800	1,500
10.70.4150.00	Professional Services	39,521	21,979	20,400	30,100	35,100
10.70.4170.00	Telephone & Internet	39,369	27,537	54,540	40,000	56,600
10.70.4180.00	Travel & Training	3,097	6,518	24,750	21,000	33,100
	Total Contractual Services	243,189	194,260	313,840	309,500	349,800
	Commodities					
10.70.4310.00	Computers & Software	23,099	18,803	28,760	28,000	14,340
10.70.4330.00	Fuel & Lubricants	32,926	38,294	50,500	44,000	60,000

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
10.70.4385.00	Supplies - General	125,122	91,703	114,590	112,800	116,440
10.70.4395.00	Supplies - Lab	4,527	1,251	4,800	3,200	10,500
10.70.4400.00	Supplies - Office	5,886	5,617	12,000	10,100	13,000
10.70.4460.00	Uniforms	10,001	9,973	16,450	16,000	17,000
	Total Commodities	201,561	165,641	227,100	214,100	231,280
	Other Charges					
10.70.4520.00	Donations - Community Programs	1,146	2,924	4,500	3,000	4,500
10.70.4540.00	Insurance	93,857	89,675	91,200	93,200	111,200
10.70.4560.00	Memberships & Subscriptions	590	320	1,500	900	1,500
10.70.4570.00	Miscellaneous	-	-	-	5,200	-
	Total Other Charges	95,593	92,919	97,200	102,300	117,200
	Capital - $5,000/item min.					
10.70.4830.00	Equipment	1,072	7,567	13,500	9,000	-
10.70.4860.00	Vehicles	104,662	104,606	128,000	104,606	140,000
	Total Capital	105,734	112,173	141,500	113,606	140,000
	Impact					
	Commodities					
10.70.4310.00	Computers & Software	-	-	-	-	4,500
	Total Commodities	-	-	-	-	4,500
	Contractual Services					
10.70.4135.00	Other Contractual Services	-	-	-	-	18,500
	Total Contractual Services	-	-	-	-	18,500
	Capital - $5,000/item min.					
10.70.4860.00	Vehicles	-	-	-	-	50,000
10.70.4890.00	Other Improvements	-	-	-	-	150,000
	Total Capital	-	-	-	-	200,000
	Total Budget Request	**3,184,497**	**2,494,438**	**3,765,193**	**3,706,059**	**4,878,580**

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Personnel Services					
10.80.4001.00	Salaries	58,518	91,600	124,500	119,500	117,000
10.80.4010.00	Payroll Taxes	4,266	6,864	9,650	9,650	9,100
10.80.4020.00	Unemployment Taxes	-	-	1,400	1,400	1,100
10.80.4025.00	Workers Compensation	1,869	6,767	4,000	8,000	4,500
10.80.4030.00	Group Insurance	7,200	14,180	26,860	26,860	22,600
10.80.4035.00	Retirement Contribution	5,261	7,987	7,100	9,280	14,300
	Total Personnel Services	77,114	127,398	173,510	174,690	168,600
	New Personnel					
10.80.4001.00	Salaries	-	-	-	-	336,600
10.80.4010.00	Payroll Taxes	-	-	-	-	26,600
10.80.4020.00	Unemployment Taxes	-	-	-	-	3,500
10.80.4025.00	Workers Compensation	-	-	-	-	6,800
10.80.4030.00	Group Insurance	-	-	-	-	116,500
10.80.4035.00	Retirement Contribution	-	-	-	-	40,500
	Total Personnel Services	-	-	-	-	530,500
	Contractual Services					
10.80.4122.00	Maintenance - Buildings	392	1,157	-	1,300	-
10.80.4125.00	Maintenance - Equipment	3,194	831	1,500	1,500	1,500
10.80.4130.00	Maintenance - Vehicles	21	-	750	250	-
10.80.4135.00	Other Contractual Services	3,630	3,570	2,800	4,200	1,200
10.80.4140.00	Postage	-	-	200	100	200
10.80.4145.00	Printing & Advertising	384	231	400	300	200
10.80.4160.00	Rents	1,477	-	2,500	2,000	2,500
10.80.4170.00	Telephone & Internet	7,045	5,474	7,020	8,400	9,300
10.80.4180.00	Travel & Training	377	-	1,000	500	750
	Total Contractual Services	16,519	11,263	16,170	18,550	15,650

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Commodities					
10.80.4310.00	Computers & Software	1,696	5,255	5,785	5,700	16,900
10.80.4330.00	Fuel & Lubricants	1,695	1,683	2,110	2,110	2,400
10.80.4385.00	Supplies - General	5,384	638	4,000	3,000	3,000
10.80.4390.00	Supplies - Janitorial	695	-	2,000	1,000	-
10.80.4400.00	Supplies - Office	762	900	1,500	1,000	9,250
10.80.4410.00	Supplies - Operational	1,656	1,026	3,000	1,425	3,000
	Total Commodities	11,888	9,502	18,395	14,235	34,550
	Other Charges					
10.80.4540.00	Insurance	5,644	297	6,000	1,000	11,100
10.80.4560.00	Memberships & Subscriptions	-	-	300	500	800
10.80.4570.00	Miscellaneous	4	4,895	-	5,400	-
	Total Other Charges	5,648	5,192	6,300	6,900	11,900
	Capital - $5,000/item min.					
10.80.4810.00	Buildings	5,350	-	-	-	-
	Total Capital	5,350	-	-	-	-
	Total Budget Request	**116,519**	**153,355**	**214,375**	**214,375**	**761,200**

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Contractual Services					
10.82.4122.00	Maintenance - Buildings	156,924	8,080	26,000	25,000	40,800
10.82.4125.00	Maintenance - Equipment	1,908	896	14,000	8,000	10,000
10.82.4127.00	Maintenance - Infrastructure	11,113	11,997	14,500	14,000	9,000
10.82.4135.00	Other Contractual Services	63,301	45,604	72,000	70,000	78,100
10.82.4150.00	Professional Services	1,396	-	2,500	2,500	3,250
10.82.4160.00	Rents	313	1,665	1,500	1,500	1,500
10.82.4190.00	Utilities	47,752	33,322	34,000	36,000	75,000
	Total Contractual Services	282,707	101,564	164,500	157,000	217,650
	Commodities					
10.82.4390.00	Supplies - Janitorial	2,058	526	6,000	3,000	3,000
10.82.4410.00	Supplies - Operational	7,744	3,610	6,500	3,000	3,000
	Total Commodities	9,802	4,136	12,500	6,000	6,000
	Other Charges					
10.82.4540.00	Insurance	18,500	15,513	20,800	20,800	24,600
	Total Other Charges	18,500	15,513	20,800	20,800	24,600
	Capital - $5,000/item min.					
10.82.4810.00	Buildings	18,648	32,807	108,500	65,000	45,000
10.82.4830.00	Equipment	-	5,975	6,000	6,000	-
	Total Capital	18,648	38,782	114,500	71,000	45,000
	Total Budget Request	**329,657**	**159,994**	**312,300**	**254,800**	**293,250**

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CONSERVATION TRUST FUND EXPENSE SUMMARY

	Personnel Services	Contract Services	Commodity	Other Charges	Total Operating Costs	Capital Outlay	Debt Service	Total
Conservation Trust	0	0	0	0	0	145,000	---	145,000
Totals	$0	$0	$0	$0	0	$145,000	$0	$145,000

Total Cash Available	$	188,809
Ending Fund Balance	$	43,809

% of Total Budget	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

	CONSERVATION TRUST FUND REVENUES	2020 Actual	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
30.01.3450.00	LOTTERY FUNDS	80,799	68,682	77,100	99,400	81,100
30.01.3960.00	INTEREST INCOME	461	24	100	100	50
	TOTAL FUND REVENUES	81,261	68,705	77,200	99,500	81,150
	UNRESTRICTED CASH BALANCE FORWARD (BEG. FUND BAL.)					107,659
	TOTAL ANTICIPATED FUNDS AVAILABLE	81,261	68,705	77,200	99,500	188,809

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Capital - $5,000/item min.					
30.90.4840.00	Infrastructure	73,102	-	-	-	145,000
	Total Capital	73,102	-	-	-	145,000
	Total Budget Request	**73,102**	**-**	**-**	**-**	**145,000**

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PARKS AND OPEN SPACE FUND EXPENSE SUMMARY

	Personnel Services	Contract Services	Commodity	Other Charges	Total Operating Costs	Capital Outlay	Impact Outlay	Debt Service	Total
Parks Fund	478,900	469,800	72,150	16,700	1,037,550	1,547,000	1,190,000	-	3,774,550
Totals	$ 478,900	$ 469,800	$ 72,150	$ 16,700	$ 1,037,550	$ 1,547,000	$ 1,190,000	$ -	$ 3,774,550
Total Cash Available									$ 8,934,082
Ending Fund Balance									$ 5,159,532
% of Total Budget	12.69%	12.45%	1.91%	0.44%	27.49%	40.99%	31.53%	0.00%	100.00%

	PARKS AND OPEN SPACE FUND REVENUES	2020 Actual	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
34.01.3225.00	FISHING LICENSES	790	900	-	900	500
34.01.3420.00	GRANTS	-	24,093	190,000	45,000	205,000
34.01.3470.00	LARIMER COUNTY OPEN SPACE	270,462	186,247	147,560	239,100	243,650
34.01.3532.00	PARK FEES - BUILDING PERMITS	184,500	79,500	75,000	81,000	75,000
34.01.3567.00	PARK RESERVATION FEES	380	890	250	890	400
34.01.3740.00	PARK & OS - IMPACT FEES	393,668	189,846	179,100	193,428	179,100
34.01.3940.00	CEMETERY LOT PURCHASE	51,041	40,316	17,000	40,316	17,000
34.01.3960.00	INTEREST INCOME	22,055	1,152	22,000	1,295	2,000
34.01.3970.00	MISCELLANEOUS	27,078	-	-	-	-
		949,974	522,942	630,910	601,929	722,650
34.01.3999.00	FROM WATER FUND	100,000	-	100,000	25,000	20,000
34.01.3999.00	FROM SEWER FUND	100,000	-	100,000	25,000	20,000
34.01.3999.00	FROM DRAINAGE	20,000	-	20,000	20,000	10,000
34.01.3999.00	FROM GENERAL FUND	-	-	-	-	1,112,000
	TOTAL FUND REVENUES	1,169,974	522,942	850,910	671,929	1,884,650
	UNRESTRICTED CASH BALANCE FORWARD (BEG. FUND BAL.)					7,049,432
	TOTAL ANTICIPATED FUNDS AVAILABLE					8,934,082

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Personnel Services					
34.90.4001.00	Salaries	200,548	141,987	222,400	222,400	212,300
34.90.4002.00	Overtime	844	1,497	1,500	1,500	3,000
34.90.4010.00	Payroll Taxes	14,625	10,892	18,500	18,500	16,900
34.90.4020.00	Unemployment Taxes	-	-	2,200	2,200	3,000
34.90.4025.00	Workers Compensation	11,900	3,907	17,800	17,800	18,500
34.90.4030.00	Group Insurance	31,946	17,217	40,500	40,500	27,500
34.90.4035.00	Retirement Contribution	12,164	8,266	9,400	9,400	25,800
	Total Personnel Services	272,027	183,766	312,300	312,300	307,000
	New Personnel Services					
34.90.4001.00	Salaries	-	-	-	-	91,800
34.90.4002.00	Overtime	-	-	-	-	2,000
34.90.4010.00	Payroll Taxes	-	-	-	-	7,400
34.90.4020.00	Unemployment Taxes	-	-	-	-	2,200
34.90.4025.00	Workers Compensation	-	-	-	-	6,500
34.90.4030.00	Group Insurance	-	-	-	-	51,000
34.90.4035.00	Retirement Contribution	-	-	-	-	11,000
	Total Personnel Services	-	-	-	-	171,900
	Contractual Services					
34.90.4122.00	Maintenance - Buildings	472	695	8,000	4,500	8,000
34.90.4125.00	Maintenance - Equipment	2,389	5,684	10,000	7,500	8,000
34.90.4127.00	Maintenance - Infrastructure	25,482	28,429	128,000	103,000	98,000
34.90.4130.00	Maintenance - Vehicles	612	369	2,000	1,500	1,500
34.90.4135.00	Other Contractual Services	26,804	23,930	41,500	41,500	49,400
34.90.4140.00	Postage	-	-	100	100	100
34.90.4150.00	Professional Services	12,636	8,735	35,000	30,000	145,000
34.90.4170.00	Telephone & Internet	-	-	250	250	4,800
34.90.4180.00	Travel & Training	36	-	1,000	1,000	1,000
34.90.4190.00	Utilities	2,997	2,272	4,000	4,000	154,000
	Total Contractual Services	71,428	70,114	229,850	193,350	469,800

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Commodities					
34.90.4300.00	Chemicals	16,279	25,836	17,000	24,700	25,700
34.90.4310.00	Computers & Software	-	-	1,160	1,160	4,200
34.90.4330.00	Fuel & Lubricants	10,927	9,486	8,200	8,200	11,000
34.90.4385.00	Supplies - General	805	716	3,000	2,000	2,500
34.90.4410.00	Supplies - Operational	15,124	3,180	23,000	13,000	23,000
34.90.4420.00	Supplies - Safety	816	145	2,500	1,500	1,500
34.90.4430.00	Supplies - Training	744	331	1,000	1,000	1,000
34.90.4440.00	Supplies - Vehicles	-	40	1,000	1,000	1,000
34.90.4460.00	Uniforms	764	-	1,100	1,100	2,250
	Total Commodities	45,458	39,734	57,960	53,660	72,150
	Other Charges					
34.90.4540.00	Insurance	5,697	1,901	4,300	4,300	6,700
34.90.4570.00	Miscellaneous	-	-	10,000	10,000	10,000
	Total Other Charges	5,697	1,901	14,300	14,300	16,700
	Capital - $5,000/item min.					
34.90.4830.00	Equipment	108,932	34,728	25,000	35,100	20,000
34.90.4840.00	Infrastructure	101,545	77,665	1,215,000	300,000	1,482,000
34.90.4860.00	Vehicles	-	-	-	-	45,000
	Total Capital	210,476	112,393	1,240,000	335,100	1,547,000
	Impact					
	Capital - $5,000/item min.					
34.90.4840.00	Infrastructure	-	-	-	-	1,190,000
	Total Capital	-	-	-	-	1,190,000
	Total Budget Request	**605,086**	**407,908**	**1,854,410**	**908,710**	**3,774,550**

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STREET AND ALLEY FUND EXPENSE SUMMARY

	Personnel Services	Contract Services	Commodity	Other Charges	Total Operating Costs	Capital Outlay	Impact Outlay	Debt Service	Total
Streets Fund	674,600	2,723,800	181,100	19,900	3,599,400	2,769,000	-	-	6,368,400
Totals	$ 674,600	$ 2,723,800	$ 181,100	$ 19,900	$ 3,599,400	$ 2,769,000	$ -	$ -	$ 6,368,400
Total Cash Available									$ 17,461,772
Ending Fund Balance									$ 11,093,371
% of Total Budget	10.59%	42.77%	2.84%	0.31%	56.52%	43.48%	0.00%	0.00%	100.00%

	STREET AND ALLEY FUND REVENUES	2020 Actual	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
36.01.3120.00	SALES TAXES - GENERAL	707,560	898,491	1,020,000	1,213,800	1,114,600
36.01.3124.01	USE TAXES - BUILDINGS	92,360	263,287	150,000	268,750	150,000
36.01.3124.00	SALES & USE TAXES - VEHICLES	1,704,440	1,447,707	724,500	1,451,320	911,000
36.01.3140.00	SPECIFIC OWNERSHIP TAXES	598,736	350,542	440,000	440,000	440,000
36.01.3176.00	HIGHWAY USERS TAXES	463,677	393,863	463,100	463,100	535,000
36.01.3420.00	GRANTS	1,000,000	66,667	1,066,666	66,667	566,667
36.01.3430.00	ROAD & BRIDGE - WELD	127,236	82,865	59,000	82,865	59,000
36.01.3435.00	ROAD & BRIDGE - LARIMER	95,551	46,257	82,000	46,257	82,000
36.01.3580.00	VEHICLE REGISTRATION FEES	63,789	43,295	40,800	44,595	40,800
36.01.3585.00	STREET MAINTENANCE FEE	92,742	-	-	-	0
36.01.3590.00	TRASH COLLECTION FEES	717,070	573,718	715,477	744,722	881,000
36.01.3790.00	TRANSPORTATION FACILITY DEVELOPMENT FEE - IMPACT	1,829,529	1,145,359	416,550	1,153,690	416,550
36.01.3792.00	TRAFFIC SIGNAL IMPACT FEE	2,789	5,429	4,000	5,429	4,000
36.01.3793.00	TRAFFIC SIGNAL - DEV SHARE	92,750	50,000	-	50,000	0
36.01.3960.00	INTEREST	54,772	2,840	28,000	2,840	2,000
36.01.3970.00	MISCELLANEOUS	427,167	653	-	653	0
36.01.3995.00	UNREALIZED GAIN ON INVESTMENTS	19,694	-	-	-	0
36.01.3999.00	TRANSFER IN	2,698,869	-	-	-	0
	SUBTOTAL	10,788,731	5,370,972	5,210,093	6,034,688	5,202,617
	TOTAL FUND REVENUES	10,788,731	5,370,972	5,210,093	6,034,688	5,202,617
	UNRESTRICTED CASH BALANCE FORWARD (BEG. FUND BAL.)					12,259,155
	TOTAL ANTICIPATED FUNDS AVAILABLE					17,461,772
	RESTRICTED FOR TRANS. IMPACT BAL (AS OF 12/2020):			**1,599,588**		
	Less 2021 Budgeted Expenses:					
	Twin Silos Reimbursement			(144,000)		
	Charlotte design			(350,000)		
	Embankment mower			(44,000)		
	Digital signals			(25,000)		
	Plow truck			(150,000)		
	Estes project			(800,000)		
	RESTRICTED FOR TRANS. IMPACT ONLY (AS OF 12/2020)			**86,588**		

STREET AND ALLEY FUND REVENUES	2020 Actual	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
RESTRICTED FOR IMPACT ONLY - SIGNALS (AS OF 12/2020)			**269,729**		

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Personnel Services					
36.90.4001.00	Salaries	213,777	174,035	301,760	301,760	301,900
36.90.4002.00	Overtime	1,069	2,432	6,000	6,000	6,000
36.90.4010.00	Payroll Taxes	15,855	13,333	23,100	23,100	23,800
36.90.4020.00	Unemployment Taxes	-	-	2,800	2,800	2,900
36.90.4025.00	Workers Compensation	10,702	8,134	18,500	18,500	19,200
36.90.4030.00	Group Insurance	36,923	24,561	45,500	45,500	79,600
36.90.4035.00	Retirement Contribution	14,023	11,031	14,100	14,100	36,600
	Total Personnel Services	292,349	233,526	411,760	411,760	470,000
	New Personnel					
36.90.4001.00	Salaries	-	-	-	-	104,200
36.90.4002.00	Overtime	-	-	-	-	2,000
36.90.4010.00	Payroll Taxes	-	-	-	-	8,100
36.90.4020.00	Unemployment Taxes	-	-	-	-	2,900
36.90.4025.00	Workers Compensation	-	-	-	-	16,500
36.90.4030.00	Group Insurance	-	-	-	-	57,400
36.90.4035.00	Retirement Contribution	-	-	-	-	13,500
	Total New Personnel	-	-	-	-	204,600
	Contractual Services					
36.90.4125.00	Maintenance - Equipment	10,336	18,751	20,000	20,000	27,500
36.90.4127.00	Maintenance - Infrastructure	393,049	274,585	840,000	840,000	1,320,000
36.90.4130.00	Maintenance - Vehicles	5,474	5,811	12,000	10,000	10,000
36.90.4135.00	Other Contractual Services	821,946	541,712	944,800	944,800	832,200
36.90.4140.00	Postage	-	50	300	200	1,000
36.90.4145.00	Printing & Advertising	325	50	3,000	3,000	4,000
36.90.4150.00	Professional Services	605	83,146	352,000	352,000	215,000
36.90.4160.00	Rents	1,801	2,173	5,000	5,000	5,500
36.90.4170.00	Telephone & Internet	3,142	2,119	4,540	4,540	3,600
36.90.4180.00	Travel & Training	1,140	1,442	5,000	2,500	5,000
36.90.4190.00	Utilities	319,407	191,928	295,000	295,000	300,000
	Total Contractual Services	1,557,224	1,121,767	2,481,640	2,477,040	2,723,800

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Commodities					
36.90.4300.00	Chemicals	58,256	20,305	50,000	50,000	55,000
36.90.4310.00	Computers & Software	1,214	1,518	3,550	3,550	18,500
36.90.4330.00	Fuel & Lubricants	17,415	23,636	20,000	30,000	30,000
36.90.4385.00	Supplies - General	8,725	2,624	12,000	8,000	10,000
36.90.4400.00	Supplies - Office	818	100	600	350	350
36.90.4410.00	Supplies - Operational	11,830	24,882	27,000	30,000	35,000
36.90.4420.00	Supplies - Safety	6,953	864	10,000	10,000	10,000
36.90.4430.00	Supplies - Training	31	-	150	150	250
36.90.4440.00	Supplies - Vehicles	4,517	3,254	20,000	20,000	20,000
36.90.4460.00	Uniforms	929	520	2,500	2,000	2,000
	Total Commodities	110,688	77,702	145,800	154,050	181,100
	Other Charges					
36.90.4540.00	Insurance	7,091	9,820	7,800	9,820	17,400
36.90.4560.00	Memberships & Subscriptions	325	-	400	400	500
36.90.4570.00	Miscellaneous	6,842	-	2,000	1,000	2,000
	Total Other Charges	14,259	9,820	10,200	11,220	19,900
	Capital - $5,000/item min.					
36.90.4830.00	Equipment	44,080	43,844	69,000	69,000	-
36.90.4840.00	Infrastructure	88,781	35,637	800,000	400,000	2,650,000
36.90.4860.00	Vehicles	248,864	-	150,000	120,000	119,000
36.90.4890.00	Other Improvements	8,300,036	-	-	-	-
	Total Capital	8,681,761	79,481	1,019,000	589,000	2,769,000
	Total Budget Request	**10,656,281**	**1,522,296**	**4,068,400**	**3,643,070**	**6,368,400**

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CAPITAL PROJECTS FUND EXPENSE SUMMARY

	Personnel Services	Contract Services	Commodity	Other Charges	Total Operating Costs	Capital Outlay	Debt Service	Total
Capital Projects	-	11,500	-	-	11,500	7,100,000	-	7,111,500
Totals	$ -	$ 11,500	$ -	$ -	$ 11,500	$ 7,100,000	$ -	$ 7,111,500
Total Cash Available								$ 13,825,078
Ending Fund Balance								$ 6,713,578
% of Total Budget	0.00%	0.16%	0.00%	0.00%	0.16%	99.84%	0.00%	100.00%

	CAPITAL PROJECT FUND REVENUES	2020 Actual	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
38.01.3120.00	SALES TAX REVENUES	606,058	-	-	-	-
38.01.3122.01	USE TAX REVENUES - BUILDINGS	570,463	411,945	111,940	417,820	240,000
38.01.3960.00	INTEREST	71,389	3,806	36,000	4,000	4,500
38.01.3985.00	REIMBURSED EXPENSES	-		-	-	-
38.01.3995.00	UNREALIZED GAIN ON INVESTMENTS	114,706	-	-	-	-
38.01.3999.00	TRANSFERS TO TAX FUND	(59,895)		(85,100)	(100,000)	(60,000)
	SUBTOTAL	1,302,720	415,751	62,840	321,820	184,500
	TOTAL FUND REVENUES	1,302,720	415,751	62,840	321,820	184,500
	UNRESTRICTED CASH BALANCE FORWARD (BEG. FUND BAL.)					13,640,578
	TOTAL ANTICIPATED FUNDS AVAILABLE					13,825,078

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Contractual Services					
38.90.4135.00	Other Contractual Services	8,355	4,856	10,200	10,200	11,500
	Total Contractual Services	8,355	4,856	10,200	10,200	11,500
	Capital - $5,000/item min.					
38.90.4840.00	Infrastructure	50,201	27,878	4,400,000	600,000	7,100,000
	Total Capital	50,201	27,878	4,400,000	600,000	7,100,000
	Total Budget Request	**58,556**	**32,734**	**4,410,200**	**610,200**	**7,111,500**

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TAX ALLOCATION EXPENSE SUMMARY

	Personnel Services	Contract Services	Commodity	Other Charges	Total Operating Costs	Capital Outlay	Debt Service	Total
Tax Allocation	-	-	-	645,050	645,050	-	-	645,050
Totals	$ -	$ -	$ -	$ 645,050	$ 645,050	$ -	$ -	$ 645,050
Total Cash Available								$ 645,050
Ending Fund Balance								$ (0)
% of Total Budget	0.00%	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	100.00%

	TAX ALLOCATION FUND REVENUES	2020 Actual	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	TRANSFERS IN:					
60.01.3120.00	TAX SHARING	463,542	382,483	439,900	625,000	645,000
60.01.3960.00	INTEREST	-	-	100	50	50
		-	-	-	-	-
		463,542	382,483	440,000	625,050	645,050
	TOTAL FUND REVENUES	463,542	382,483	440,000	625,050	645,050
	UNRESTRICTED CASH BALANCE FORWARD (BEG. FUND BAL.)					(0)
	TOTAL ANTICIPATED FUNDS AVAILABLE					645,050

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Other Charges					
60.90.4570.00	Miscellaneous	463,542	382,483	440,000	721,001	645,050
	Total Other Charges	463,542	382,483	440,000	721,001	645,050
	Transfers					
60.90.4999.00	Transfer Out		-			
	Total Transfers Out	-	-	-	-	-
	Total Budget Request	**463,542**	**382,483**	**440,000**	**721,001**	**645,050**

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WATER FUND EXPENSE SUMMARY

	Personnel Services	Contract Services	Commodity	Other Charges	Total Operating Costs	Capital Outlay	Debt Service	Total
Water Fund	654,750	1,942,600	1,477,400	747,550	4,822,300	20,910,280	-	25,732,580
Totals	$ 654,750	$ 1,942,600	$ 1,477,400	$ 747,550	$ 4,822,300	$ 20,910,280	$ -	$ 25,732,580
Total Cash Available								$ 64,105,749
Ending Fund Balance								$ 38,373,169
% of Total Budget	2.54%	7.55%	5.74%	2.91%	18.74%	81.26%	0.00%	100.00%

	WATER FUND REVENUES	2020 Actual	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
70.01.3440.00	GRANTS	-	-	325,000	325,000	-
70.01.3810.00	SALES OF POTABLE WATER	3,254,914	3,297,008	2,884,500	3,608,000	3,600,000
70.01.3815.00	SALES OF NONPOTABLE WATER	70,021	-	-	-	3,700
70.01.3820.00	WATER TAP FEE	1,091,454	1,246,957	965,550	1,300,000	1,006,050
70.01.3825.00	RAW WATER DEVELOPMENT FEE	953,834	1,065,536	816,294	1,123,765	850,650
70.01.3840.00	HYDRANT/BULK WATER	50,717	439,571	18,000	442,500	235,000
70.01.3845.00	WATER LEASE	6,001	10,650	1,500	11,650	11,650
70.01.3850.00	WATER SHARE FEES	61,395	1,900	-	2,900	2,400
70.01.3852.00	WATER METER FEE	45,644	87,023	15,000	92,456	40,500
70.01.3920.00	CAPITAL/DEVELOPER CONTRIBUTIONS	-	8,160,000	-	8,160,000	-
70.01.3960.00	INTEREST INCOME	103,029	5,599	95,000	6,500	6,900
70.01.3970.00	MISCELLANEOUS	363,529	138,379	125,000	138,900	125,000
70.01.3985.00	REFUND OF EXPENDITURES	3,220	10,421	-	10,421	-
70.01.3995.00	UNREALIZED GAIN ON INVESTMENTS	111,960	-	-	-	-
70.01.3999.00	TRANSFER IN	-	-	5,000,000	-	40,000,000
	SUBTOTAL	6,115,719	14,463,044	10,245,844	15,222,092	45,881,850
	TOTAL FUND REVENUES	6,115,719	14,463,044	10,245,844	15,222,092	45,881,850
	UNRESTRICTED CASH BALANCE FORWARD (BEG. FUND BAL.)					26,383,899
	LESS CONTRIBUTED CAPITAL					(8,160,000)
	TOTAL ANTICIPATED FUNDS AVAILABLE					$ 64,105,749

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Administrative Costs					
	Personnel Services					
70.12.4001.00	Salaries	101,987	72,294	103,650	103,650	103,200
70.12.4002.00	Overtime	53	331	500	500	500
70.12.4005.00	Compensated Absences	-	-		-	-
70.12.4010.00	Payroll Taxes	6,973	5,413	7,900	7,900	7,950
70.12.4020.00	Unemployment Taxes	-	-	1,100	1,100	1,100
70.12.4025.00	Workers Compensation	102	81	2,900	2,900	2,850
70.12.4030.00	Group Insurance	16,779	15,006	22,300	22,300	23,950
70.12.4035.00	Retirement Contribution	7,144	5,132	6,950	6,950	12,300
	Total Personnel Services	133,037	98,257	145,300	145,300	151,850
	Contractual Services					
70.12.4110.00	Billing & Administrative	100,000	-	100,000	20,000	20,000
70.12.4135.00	Other Contractual Services	50,512	29,043	34,500	34,500	58,900
70.12.4140.00	Postage	635	22	1,200	1,200	1,000
70.12.4145.00	Printing & Advertising	10,032	11,333	15,500	15,500	15,500
70.12.4150.00	Professional Services	-	-	2,400	2,400	2,000
	Total Contractual Services	161,179	40,398	153,600	73,600	97,400
	Other Charges					
70.12.4570.00	Miscellaneous		-	386,400	386,400	179,400
	Total Other Charges	-	-	386,400	386,400	179,400
	Administrative Costs Total	**294,215**	**138,655**	**685,300**	**605,300**	**428,650**
	Operational Costs					
	Personnel Services					
70.90.4001.00	Salaries	304,261	255,012	366,800	366,800	131,800
70.90.4002.00	Overtime	10,680	14,269	11,000	16,000	3,000
70.90.4005.00	Compensated Absences	6,908	-	6,000	6,000	2,500
70.90.4010.00	Payroll Taxes	23,079	19,938	28,700	28,700	10,700
70.90.4020.00	Unemployment Taxes	-	-	3,900	3,900	2,100
70.90.4025.00	Workers Compensation	8,802	8,329	18,100	18,100	7,000
70.90.4030.00	Group Insurance	73,916	58,636	80,350	80,350	43,200
70.90.4035.00	Retirement Contribution	13,855	12,860	16,700	16,700	16,000
	Total Personnel Services	441,503	369,044	531,550	536,550	216,300

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	New Personnel					
70.90.4001.00	Salaries	-	-	-	-	166,600
70.90.4002.00	Overtime	-	-	-	-	2,000
70.90.4010.00	Payroll Taxes	-	-	-	-	13,500
70.90.4020.00	Unemployment Taxes	-	-	-	-	4,700
70.90.4025.00	Workers Compensation	-	-	-	-	15,700
70.90.4030.00	Group Insurance	-	-	-	-	63,800
70.90.4035.00	Retirement Contribution	-	-	-	-	20,300
	Total Personnel Services	-	-	-	-	286,600
	Contractual Services					
70.90.4122.00	Maintenance - Buildings	6,543	60,310	46,000	71,300	25,000
70.90.4125.00	Maintenance - Equipment	90,102	95,008	94,000	100,000	130,000
70.90.4127.00	Maintenance - Infrastructure	517,321	71,678	89,000	89,000	245,000
70.90.4130.00	Maintenance - Vehicles	6,221	2,327	5,000	5,000	5,300
70.90.4135.00	Other Contractual Services	152,262	138,507	126,500	149,000	781,500
70.90.4150.00	Professional Services	196,722	100,419	150,000	130,000	170,000
70.90.4170.00	Telephone & Internet	5,263	4,546	5,480	5,500	6,900
70.90.4180.00	Travel & Training	3,791	4,479	5,000	5,000	3,500
70.90.4190.00	Utilities	225,975	142,485	220,000	220,000	253,000
70.90.4195.00	Water Assessments	140,483	151,339	200,000	200,000	225,000
	Total Contractual Services	1,344,682	771,098	940,980	974,800	1,845,200
	Commodities					
70.90.4300.00	Chemicals	203,162	278,963	135,000	295,000	1,196,000
70.90.4310.00	Computers & Software	178	1,518	4,900	2,400	59,000
70.90.4330.00	Fuel & Lubricants	10,490	8,554	12,000	12,000	10,000
70.90.4340.00	Hydrants	11,368	4,603	15,000	8,000	10,000
70.90.4385.00	Supplies - General	5,618	8,612	14,000	14,000	14,000
70.90.4390.00	Supplies - Janitorial	679	-	1,300	1,000	1,000
70.90.4395.00	Supplies - Lab	13,080	12,617	18,000	18,000	20,000
70.90.4410.00	Supplies - Operational	67,855	30,491	60,000	50,000	60,000
70.90.4420.00	Supplies - Safety	2,294	1,868	3,000	3,000	3,000
70.90.4430.00	Supplies - Training	16	-	1,500	1,000	1,500
70.90.4440.00	Supplies - Vehicles	212	481	2,000	1,500	1,500

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
70.90.4460.00	Uniforms	3,041	315	3,200	3,000	1,400
70.90.4480.00	Water Meters	88,738	70,567	110,000	100,000	100,000
	Total Commodities	406,731	418,589	379,900	508,900	1,477,400
	Other Charges					
70.90.4515.00	Depreciation	356,431	267,323	410,000	410,000	425,000
70.90.4540.00	Insurance	34,190	40,345	51,543	51,543	62,400
70.90.4560.00	Memberships& Subscriptions	559	35	1,000	750	750
70.90.4570.00	Miscellaneous	63,670	191,480	75,000	200,000	80,000
	Total Other Charges	454,850	499,183	537,543	662,293	568,150
	Capital - $5,000/item min.					
70.90.4830.00	Equipment	-	-	-	-	831,280
70.90.4840.00	Infrastructure	-	2,703,513	18,735,000	6,000,000	19,640,000
70.90.4860.00	Vehicles	-	-	-	-	89,000
70.90.4880.00	Water Shares	-	553,477	500,000	553,477	350,000
	Total Capital	-	3,256,990	19,235,000	6,553,477	20,910,280
	Total Budget Request	**2,941,980**	**5,453,559**	**22,310,273**	**9,841,320**	**25,732,580**

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SEWER FUND EXPENSE SUMMARY

	Personnel Services	Contract Services	Commodity	Other Charges	Total Operating Costs	Capital Outlay	Debt Service	Total
Sewer Fund	485,050	1,376,250	302,150	317,400	2,480,850	49,189,000	1,953,150	53,623,000
Totals	$ 485,050	$ 1,376,250	$ 302,150	$ 317,400	$ 2,480,850	$ 49,189,000	$ 1,953,150	$ 53,623,000
Total Cash Available								$ 57,413,779
Ending Fund Balance								$ 3,790,779
% of Total Budget	0.90%	2.57%	0.56%	0.59%	4.63%	91.73%	3.64%	100.00%

	SEWER FUND REVENUES	2020 Actual	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
72.01.3410.00	GRANT	-	1,910,007	-	1,910,006	1,900,000
72.01.3775.00	SEWER - REGIONAL IMPACT FEE	-	788,500	400,000	788,500	902,500
72.01.3870.00	SEWER CHARGES	2,130,323	2,001,960	2,123,500	2,660,000	2,984,000
72.01.3880.00	SEWER TAP FEES	723,350	912,840	792,000	929,340	1,494,240
72.01.3960.00	INTEREST	15,626	2,581	7,200	2,980	1,200
72.01.3970.00	MISCELLANEOUS	16,521	19,248	2,000	19,248	15,000
72.01.3995.00	UNREALIZED GAIN ON INVESTMENTS	74,747	-	-	-	-
72.01.3980.00	PROCEEDS FROM ISSUANCE OF BONDS	-	56,000,000	54,450,000	56,000,000	-
	SUBTOTAL	2,960,567	61,635,136	57,774,700	62,310,074	7,296,940
	TOTAL FUND REVENUES	2,960,567	61,635,136	57,774,700	62,310,074	7,296,940
	UNRESTRICTED CASH BALANCE FORWARD (BEG. FUND BAL.)					50,116,839
	TOTAL ANTICIPATED FUNDS AVAILABLE					57,413,779

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Administrative Costs					
	Personnel Services					
72.12.4001.00	Salaries	99,544	71,170	103,650	103,650	103,200
72.12.4002.00	Overtime	46	306	500	500	500
72.12.4010.00	Payroll Taxes	6,799	5,331	7,900	7,900	7,950
72.12.4020.00	Unemployment Taxes	-	-	1,100	1,100	1,100
72.12.4025.00	Workers Compensation	98	80	2,900	2,900	2,850
72.12.4030.00	Group Insurance	16,131	14,469	22,300	22,300	23,950
72.12.4035.00	Retirement Contribution	7,042	5,082	6,950	6,950	12,300
	Total Personnel Services	129,660	96,438	145,300	145,300	151,850
	Contractual Services					
72.12.4110.00	Billing & Administrative	100,000	-	100,000	20,000	20,000
72.12.4135.00	Other Contractual Services	40,426	25,705	30,300	30,300	55,700
72.12.4140.00	Postage	-	-	1,100	1,100	1,000
72.12.4145.00	Printing & Advertising	10,032	4,340	15,500	15,500	15,500
	Total Contractual Services	150,458	30,045	146,900	66,900	92,200
	Other Charges					
72.12.4570.00	Miscellaneous	-	-	15,000	15,000	
	Total Other Charges	-	-	15,000	15,000	-
	Total Administrative Costs	**280,118**	**126,483**	**307,200**	**227,200**	**244,050**
	Operational Costs					
	Personnel Services					
72.90.4001.00	Salaries	250,425	178,961	335,300	335,300	23,400
72.90.4002.00	Overtime	9,334	7,475	11,000	11,000	1,000
72.90.4005.00	Compensated Absences	2,754	-	6,000	6,000	1,500
72.90.4010.00	Payroll Taxes	19,152	13,919	26,250	26,250	2,000
72.90.4020.00	Unemployment Taxes	-	-	3,700	3,700	500
72.90.4025.00	Workers Compensation	7,202	4,130	18,100	18,100	5,500
72.90.4030.00	Group Insurance	59,183	39,432	74,150	74,150	9,800
72.90.4035.00	Retirement Contribution	11,569	9,285	15,400	15,400	2,900
	Total Personnel Services	359,619	253,202	489,900	489,900	46,600
	New Personnel					
72.90.4001.00	Salaries	-	-	-	-	166,600

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
72.90.4002.00	Overtime	-	-	-	-	2,000
72.90.4010.00	Payroll Taxes	-	-	-	-	13,500
72.90.4020.00	Unemployment Taxes	-	-	-	-	4,700
72.90.4025.00	Workers Compensation	-	-	-	-	15,700
72.90.4030.00	Group Insurance	-	-	-	-	63,800
72.90.4035.00	Retirement Contribution	-	-	-	-	20,300
	Total New Personnel	-	-	-	-	286,600
	Contractual Services					
72.90.4122.00	Maintenance - Buildings	4,745	2,643	10,000	10,000	7,500
72.90.4125.00	Maintenance - Equipment	41,360	45,198	100,000	75,000	100,000
72.90.4127.00	Maintenance - Infrastructure	56,222	433,059	460,000	460,000	220,000
72.90.4130.00	Maintenance - Vehicles	2,061	839	3,000	1,500	1,500
72.90.4135.00	Other Contractual Services	158,008	98,666	195,000	175,000	656,500
72.90.4140.00	Postage	11	50	150	150	150
72.90.4145.00	Printing & Advertising	-	50	150	400	300
72.90.4150.00	Professional Services	64,954	17,468	10,000	10,000	40,000
72.90.4160.00	Rents	7,763	1,378	5,000	5,000	5,000
72.90.4170.00	Telephone & Internet	12,579	9,452	9,050	12,700	4,100
72.90.4180.00	Travel & Training	674	4,415	3,500	4,500	1,500
72.90.4190.00	Utilities	213,791	178,334	225,000	225,000	247,500
	Total Contractual Services	562,169	791,552	1,020,850	979,250	1,284,050
	Commodities					
72.90.4300.00	Chemicals	149,484	110,314	145,000	145,000	225,000
72.90.4310.00	Computers & Software	178	709	3,210	1,500	5,000
72.90.4330.00	Fuel & Lubricants	12,962	14,990	13,000	17,000	13,000
72.90.4380.00	Supplies - Buildings	2,080	-	3,000	3,000	3,500
72.90.7385.00	Supplies - General	2,781	1,337	5,000	4,500	10,000
72.90.4390.00	Supplies - Janitorial	62	33	1,500	750	1,500
72.90.4395.00	Supplies - Lab	724	1,262	10,000	3,500	20,000
72.90.4400.00	Supplies - Office	-	-	250	150	250
72.90.4410.00	Supplies - Operational	19,558	3,865	50,000	15,000	15,000
72.90.4420.00	Supplies - Safety	1,398	1,254	1,500	1,800	4,000

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
72.90.4430.00	Supplies - Training	16	-	1,500	1,000	1,500
72.90.4440.00	Supplies - Vehicles	121	670	2,000	1,500	2,000
72.90.4460.00	Uniforms	251	-	2,000	2,000	1,400
	Total Commodities	189,616	134,434	237,960	196,700	302,150
	Other Charges					
72.90.4515.00	Depreciation	225,460	169,095	235,000	235,000	245,000
72.90.4540.00	Insurance	22,543	47,821	49,943	49,943	61,900
72.90.4560.00	Memberships & Subscriptions	-	-	500	250	500
72.90.4570.00	Miscellaneous	9,330	-	15,000	10,000	10,000
	Total Other Charges	257,333	216,916	300,443	295,193	317,400
	Capital - $5,000/item min.					
72.90.4810.00	Buildings	-	137,458	8,000,000	6,000,000	20,000,000
72.90.4830.00	Equipment	16,350	4,527	183,500	33,500	-
72.90.4840.00	Infrastructure	277,404	3,898,880	17,203,100	12,350,000	29,100,000
72.90.4860.00	Vehicles	-	-	-	-	89,000
	Total Capital	293,754	4,040,865	25,386,600	18,383,500	49,189,000
	Debt Service					
72.90.4900.00	Principal	-	-	541,268	-	-
72.90.4950.00	Interest	-	-	906,801	488,288	1,953,150
72.90.4995.00	Cost of Issuance	-	-	550,000	550,000	-
	Total Debt Service	-	-	1,998,069	1,038,288	1,953,150
	Total Budget Request	**1,942,608**	**5,563,453**	**29,741,022**	**21,610,031**	**53,623,000**

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DRAINAGE FUND EXPENSE SUMMARY

	Personnel Services	Contract Services	Commodity	Other Charges	Total Operating Costs	Capital Outlay	Debt Service	Total
Drainage Fund	325,875	162,790	17,400	14,800	520,865	480,000	-	1,000,865
Totals	$ 325,875	$ 162,790	$ 17,400	$ 14,800	$ 520,865	$ 480,000	$ -	$ 1,000,865
Total Cash Available								$ 1,925,753
Ending Fund Balance								$ 924,888
% of Total Budget	32.56%	16.26%	1.74%	1.48%	52.04%	47.96%	0.00%	100.00%

	DRAINAGE FUND REVENUES	2020 Actual	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
74.01.3720.00	DRAINAGE IMPACT FEE	321,949	266,402	75,000	266,402	110,000
74.01.3860.00	DRAINAGE CHARGES	459,460	356,567	457,200	474,863	475,900
74.01.3960.00	INTEREST	11,833	817	5,400	1,000	1,000
74.01.3970.00	MISCELLANEOUS	343	-	-	-	-
74.01.3995.00	UNREALIZED GAIN ON INVESTMENTS	17,853	-	-	-	-
	SUBTOTAL	811,439	623,786	537,600	742,265	586,900
	TOTAL FUND REVENUES	811,439	623,786	537,600	742,265	586,900
	UNRESTRICTED CASH BALANCE FORWARD (BEG. FUND BAL.)					1,338,853
	TOTAL ANTICIPATED FUNDS AVAILABLE					1,925,753

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Administrative Costs					
	Personnel Services					
74.12.4001.00	Salaries	74,858	50,071	68,300	68,300	78,900
74.12.4002.00	Overtime	20	150	500	500	500
74.12.4010.00	Payroll Taxes	5,123	3,762	5,300	5,300	6,400
74.12.4020.00	Unemployment Taxes	-	-	750	750	1,050
74.12.4025.00	Workers Compensation	76	56	2,500	2,500	2,875
74.12.4030.00	Group Insurance	11,610	9,632	13,300	13,300	17,900
74.12.4035.00	Retirement Contribution	5,296	3,635	4,900	4,900	9,400
	Total Personnel Services	96,983	67,306	95,550	95,550	117,025
	Contractual Services					
74.12.4110.00	Billing & Administrative	20,000		20,000	20,000	10,000
74.12.4135.00	Other Contractual Services	10,599	11,783	17,600	17,600	20,840
74.12.4140.00	Postage	-	-	500	500	500
74.12.4145.00	Printing & Advertising	6,688	2,893	10,600	10,600	8,400
	Total Contractual Services	37,287	14,676	48,700	48,700	39,740
	Total Administrative Costs	134,270	81,982	144,250	144,250	156,765
	Operational Costs					
	Personnel Services					
74.90.4001.00	Salaries	109,367	66,517	116,100	116,100	80,100
74.90.4002.00	Overtime	398	807	4,000	4,000	4,000
74.12.4005.00	Compensated Absences	6,851	-	6,000	6,000	5,200
74.90.4010.00	Payroll Taxes	8,346	5,167	9,100	9,100	6,500
74.90.4020.00	Unemployment Taxes	-	-	1,150	1,150	1,100
74.90.4025.00	Workers Compensation	4,240	2,437	14,000	14,000	12,000
74.90.4030.00	Group Insurance	17,668	6,961	22,750	22,750	22,100
74.90.4035.00	Retirement Contribution	7,215	4,693	5,900	5,900	9,900
	Total Personnel Services	154,084	86,582	179,000	179,000	140,900
	New Personnel					
74.90.4001.00	Salaries	-	-	-	-	36,200
74.90.4002.00	Overtime	-	-	-	-	1,000
74.90.4010.00	Payroll Taxes	-	-	-	-	2,800

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
74.90.4020.00	Unemployment Taxes	-	-	-	-	2,100
74.90.4025.00	Workers Compensation	-	-	-	-	2,350
74.90.4030.00	Group Insurance	-	-	-	-	19,200
74.90.4035.00	Retirement Contribution	-	-	-	-	4,300
	Total New Personnel	-	-	-	-	67,950
	Contractual Services					
74.90.4125.00	Maintenance - Equipment	-	1,385	2,500	2,500	2,500
74.90.4127.00	Maintenance - Infrastructure	59,983	7,500	60,000	20,000	35,000
74.90.4130.00	Maintenance - Vehicles	-	-	1,000	1,000	1,000
74.90.4140.00	Postage	-	50	50	50	50
74.90.4145.00	Printing & Advertising	-	50	300	300	300
74.90.4150.00	Professional Services	-	-	40,000	20,000	80,000
74.90.4160.00	Rents	-	-	1,000	1,000	1,000
74.90.4170.00	Telephone & Internet	854	541	1,250	1,250	1,200
74.90.4180.00	Travel & Training	774	1,747	1,500	1,500	2,000
	Total Contractual Services	61,611	11,273	107,600	47,600	123,050
	Commodities					
74.90.4310.00	Computers & Software	-	-	980	980	1,500
74.90.4330.00	Fuel & Lubricants	-	977	750	750	7,000
74.90.4385.00	Supplies - General	-	-	1,000	1,000	1,000
74.90.4410.00	Supplies - Operational	-	-	3,000	3,000	3,000
74.90.4420.00	Supplies - Safety	-	-	3,000	3,000	3,000
74.90.4430.00	Supplies - Training	-	-	500	500	500
74.90.4440.00	Supplies - Vehicles	-	-	500	500	500
74.90.4460.00	Uniforms	500	90	600	600	900
	Total Commodities	500	1,067	10,330	10,330	17,400
	Other Charges					
74.90.4515.00	Depreciation	5,752	4,314	8,500	8,500	9,500
74.90.4540.00	Insurance	5,319	1,599	3,700	3,700	5,300
74.90.4560.00	Memberships & Subscriptions	-	-	300	300	-

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
74.90.4570.00	Miscellaneous	-	-	500	500	-
	Total Other Charges	11,070	5,913	13,000	13,000	14,800
	Capital - $5,000/item min.					
74.90.4840.00	Infrastructure	-	47,647	2,168,750	2,468,750	400,000
74.90.4860.00	Vehicles	-	-	-	-	80,000
	Total Capital	-	47,647	2,168,750	2,468,750	480,000
	Total Budget Request	**361,536**	**234,465**	**2,622,930**	**2,862,930**	**1,000,865**

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CEMETERY PERPETUAL EXPENSE SUMMARY

	Personnel Services	Contract Services	Commodity	Other Charges	Total Operating Costs	Capital Outlay	Debt Service	Total
Cemetery Fund	-	-	-	-	-	-	-	-
Totals	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Total Cash Available								$ 165,374
Ending Fund Balance								$ 165,374
% of Total Budget	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

	CEMETERY PERPETUAL FUND REVENUES	2020 Actual	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
80.01.3940.00	CEMETERY LOT PURCHASE	10,299	7,115	900	15,700	5,000
80.01.3960.00	INTEREST INCOME	916	48	400	60	60
	SUBTOTAL	11,216	7,163	1,300	15,760	5,060
	TOTAL FUND REVENUES	11,216	7,163	1,300	15,760	5,060
	UNRESTRICTED CASH BALANCE FORWARD (BEG. FUND BAL.)					160,314
	TOTAL ANTICIPATED FUNDS AVAILABLE					165,374

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Contractual Services					
80.90.4150.00	Professional Services	-	-	-		
	Total Contractual Services	-	-	-	-	-
	Other Charges					
80.90.4570.00	Miscellaneous	-	-	-		
	Total Other Charges	-	-	-	-	-
	Transfers					
80.90.4999.00	Transfers Out	-	-	-		
	Total Trasfers Out	-	-	-	-	-
	Capital - $5,000/item min.					
80.90.4840.00	Infrastructure	-	-	-		
	Total Capital	-	-	-	-	-
	Total Budget Request	**-**	**-**	**-**	**-**	**-**

TOWN OF JOHNSTOWN
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LIBRARY FUND EXPENSE SUMMARY

	Personnel Services	Contract Services	Commodity	Other Charges	Total Operating Costs	Capital Outlay	Debt Service	Total
Library Fund	533,000	677,000	250,000	12,000	1,472,000	-	-	1,472,000
Totals	$ 533,000	$ 677,000	$ 250,000	$ 12,000	$ 1,472,000	$ -	$ -	$ 1,472,000
Total Cash Available								$ 8,740,474
Ending Fund Balance								$ 7,268,474
% of Total Budget	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

	LIBRARY FUND	2020 Actual	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
92.01.3730.00	LIBRARY FACILITIES FEE	354,444	176,792	215,000	215,000	215,000
92.01.3953.00	DONATION	3,000	394	3,500	3,500	3,500
92.01.3960.00	INTEREST INCOME	27,948	1,877	60,000	60,000	5,000
92.01.3970.00	MISCELLANEOUS	300,138	1,787	7,500	7,500	7,500
92.01.3985.00	WELD LIBRARY DIST.	827,171	550,267	703,095	703,095	488,959
92.01.3999.00	TRANSFERS IN - TOJ	659,826	784,398	1,137,657	1,318,443	1,140,000
	SUBTOTAL	2,172,528	1,515,515	2,126,752	2,307,538	1,859,959
	TOTAL FUND REVENUES	2,172,528	1,515,515	2,126,752	2,307,538	1,859,959
	UNRESTRICTED CASH BALANCE FORWARD (BEG. FUND BAL.)					6,880,515
	TOTAL ANTICIPATED FUNDS AVAILABLE					$ 8,740,474

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Personnel Services					
92.90.4001.00	Salaries	263,725	224,665	453,000	353,000	533,000
92.90.4010.00	Payroll Taxes	20,013	17,531	-	-	-
92.90.4025.00	Workers Compensation	362	255	-	-	-
	Total Personnel Services	284,100	242,451	453,000	353,000	533,000
	Contractual Services					
92.90.4122.00	Maintenance - Buildings	51,889	27,118	380,000	220,000	580,000
92.90.4145.00	Printing & Advertising	19,067	11,534	32,000	30,000	32,000
92.90.4150.00	Professional Services	1,184	148	10,000	1,000	10,000
92.90.4170.00	Telephone & Internet	5,892	4,112	8,000	8,000	10,000
92.90.4180.00	Travel & Training	350	207	5,000	500	5,000
92.90.4190.00	Utilities	26,884	19,794	40,000	30,000	40,000
	Total Contractual Services	105,266	62,913	475,000	289,500	677,000
	Commodities					
92.90.4310.00	Computers & Software	4,721	4,257	5,000	5,000	5,000
92.90.4385.00	Supplies - General	4,536	3,155	87,000	45,500	70,000
92.90.4390.00	Supplies - Janitorial	1,289	509	3,000	1,000	3,000
92.90.4400.00	Supplies - Office	-	-	12,000	-	12,000
92.90.4410.00	Supplies - Operational	75,093	42,037	45,000	42,000	160,000
	Total Commodities	85,640	49,958	152,000	93,500	250,000
	Other Charges					
92.90.4540.00	Insurance	-	-	5,000	5,000	5,000
92.90.4560.00	Memberships & Subscriptions	328	437	7,500	500	2,500
92.90.4570.00	Miscellaneous	334,156	79,404	2,000	1,500	4,500
	Total Other Charges	334,484	79,841	14,500	7,000	12,000
	Capital - $5,000/item min.					
92.90.4810.00	Buildings	817,709	28,982	-	-	-
	Total Capital	817,709	28,982	-	-	-
	Total Budget Request	**1,627,199**	**464,145**	**1,094,500**	**743,000**	**1,472,000**

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RECREATION CENTER FUND SUMMARY

	Personnel Services	Contract Services	Commodity	Other Charges	Total Operating Costs	Capital Outlay	Debt Service	Total
Rec Center Fund	-	500,000	-	-	500,000	-	-	500,000
Totals	$ -	$ 500,000	$ -	$ -	$ 500,000	$ -	$ -	$ 500,000
Total Cash Available								$ 922,738
Ending Fund Balance								$ 422,738
% of Total Budget	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%

	RECREATION CENTER FUND REVENUES	2020 Actuals	2021 Jan - Sept Actuals	2020 Proposed Budget	2020 Estimated	2021 Proposed
96.01.3999.00	TRANSFER IN	-	-	750,000	-	-
	SUBTOTAL	-	-	750,000	-	-
	TOTAL FUND REVENUES	-	-	750,000	-	-
	UNRESTRICTED CASH BALANCE FORWARD (BEG. FUND BAL.)					922,738
	TOTAL ANTICIPATED FUNDS AVAILABLE	-				922,738

Acct. No.	Account Title	2020 Actuals	2021 Jan - Sept Actuals	2021 Adopted Budget	2021 Estimated	2022 Proposed
	Contractual Services					
96.90.4135.00	Other Contractual Services	441,756	333,334	500,000	500,000	500,000
		441,756	333,334	500,000	500,000	500,000
	Capital - $5,000/item min.					
96.90.4810.00	Buildings	8,811,866	-	-	-	-
		8,811,866	-	-	-	-
	Total Budget Request	**9,253,622**	**333,334**	**500,000**	**500,000**	**500,000**

Exhibit B
Town of Johnstown 2022 Amended Proposed Budget Changes

General Fund – There has been an increase in fund balance of $384,151. The changes are detailed as follows:

Description	Impact
Revenues – 2021 year-end projections increased	$ 1,226,612
Expenses – 2021 year-end projections increased	(409,941)
Revenues – 2022 decreased – $1 M DOLA façade grant revenues removed, $585,380 sales tax revenue increase, $60K increase in transfer to tax allocation fund, $1.112M increase in transfers to the Parks and Open Space Fund	(1,586,620)
Expenses – 2022 decreased – $1.165M DOLA façade grant expenses removed, insurance costs for PD increased $8,900 and insurance costs increased for PW $2,000	1,154,100

Parks & Open Space – There has been a decrease in fund balance of $7,766. The changes are detailed as follows:

Description	Impact
Revenues – 2021 year-end projections increased	$ 19,234
Revenues – 2022 increased – $1.112M transfer in from General Fund	1,112,000
Expenses – 2022 increased – $2K increase in insurance costs, $25K increase cell error, $1.112M increase for lake rehabilitation	(1,139,000)

Street & Alley – There has been an increase in fund balance of $203,336. The changes are detailed as follows:

Description	Impact
Revenues – 2021 year-end projections increased	$ 160,736
Revenues – 2022 increased – sales tax revenue	94,600
Expenses – 2022 increased – $50K increase for crusher fines for alleys, $2K increase insurance	(52,000)

Capital Projects – There has been an increase in fund balance of $55,720. The changes are detailed as follows:

Description	Impact
Revenues – 2021 year-end projections increased	$ 55,720

Tax Allocation – There has been no change in fund balance, however, there were changes to the revenues and expenses. The changes are detailed as follows:

Description	Impact
Revenues – 2022 increased – transfer from General Fund	$ 60,000
Expenses – 2022 increased	(60,000)

Water Fund – There has been a decrease in fund balance of $460,579. The changes are detailed as follows:

Description	Impact
Revenues – 2021 year-end projections increased	$ 73,921
Expenses – 2021 year-end projections increased	(51,000)
Expenses – 2022 increased – $13.5K insurance, $470K GAC	(483,500)

Exhibit B
Town of Johnstown 2022 Amended Proposed Budget Changes

Sewer Fund – There has been a decrease in fund balance of $7,427,312. The changes are detailed as follows:

Description	Impact
Revenues – 2021 year-end projections increased (regional impact fee, tap fees, interest, misc.)	$ 37,988
Expenses – 2022 increased – $15,300 insurance, $7M LPWWTP construction, $450K Central Ph. 3 design	(7,465,300)

Drainage – There has been an increase in fund balance of $28,497. The changes are detailed as follows:

Description	Impact
Revenues – 2021 year-end projections increased (impact fees)	$ 30,497
Expenses – 2022 increased – insurance	(2,000)

Conservation Trust – There has been an increase in fund balance of $12,800 as a result if increased revenues in 2021.

Town of Johnstown

TOWN COUNCIL AGENDA COMMUNICATIONS

AGENDA DATE: November 1, 2021

SUBJECT: Johnstown Reservoir Dam Repair

ACTION PROPOSED: Authorize additional funds for the Johnstown Reservoir Dam Repair project

ATTACHMENTS:

1. Johnstown Reservoir Dam Repair – J-2 Change Order #1
2. Johnstown Reservoir Dam Repair – J-2 Change Order #2
3. J&T Proposal for Phase 2 and Closeout Construction Administration
4. Johnstown Reservoir Dam Repair Project: Summary of Costs
5. Johnstown Reservoir Dam Repair: Yearly Breakdown of Expenses

PRESENTED BY: Ellen Hilbig, Utilities Director

AGENDA ITEM DESCRIPTION:

Enclosed for Council's review and consideration is a request to authorize the allocation of additional funds for the Johnstown Reservoir Dam Repair project to provide the following additional services; 1) Dewater the Johnstown Reservoir, 2) Dredge the Johnstown Reservoir, 3) Change Order Construction Items required by the State Review of the Contract Documents and 4) Phase 2 & Close Out Construction Admin Costs.

J-2 Contracting Company was awarded the construction contract for the Johnstown Reservoir Dam Repair project at the September 8 Council meeting. At the time of award, Town Staff had originally identified the ability to perform the dewatering operations required to draining Johnstown Reservoir internally. Town Staff, J-2 Contracting and J&T Consulting performed a field evaluation of the dewatering requirements and constraints and determined the optimum way to dewater the reservoir is to utilize the intake for the Town Lake Pump Station and surface discharge to the Home Supply Ditch laterals. The volume of water able to be routed through this option allowed for the use of larger pumps than initially anticipated. Staff identified that J-2 Contracting was able to better facilitate dewatering activities for the project with the increased scale of operations for an additional cost of $88,500 to perform the work.

During the September 8 Council meeting, Council identified an opportunity to dredge the reservoir while the reservoir is drained for the dam repair activities. Upon reviewing the grading plan for the original reservoir construction, J&T Consulting identified that the west end of the reservoir could be dredged safely without risking dredging operations penetrating the reservoir seal. J-2 Contracting and J&T Consulting collaborated to identify two potential options for dredging operations. Option 1 involves dredging and re-grading the reservoir bottom with the existing material to enable flows to reach the outfall. Option 1 fills in the deepest depressions in the current reservoir minimizing hauling costs and provides approximately an additional 3 acre-ft of water storage for an additional project cost of $268,423.75. Option 2 involves the

complete removal and haul off of the dredged material creating pockets of deeper water on the west end. Option 2 provides potential improved water quality and ecological habitats, opportunities for storage in the event of dam breach and creates approximately an additional 12 acre-ft of water storage for an additional project cost of $479,750.00. Staff is recommending Option 2 due to the potential benefits and future potential to lower the Town Lake Pump Station intake to pull water from deeper sections of the reservoir.

As part of the approval process to construct the project, the project construction plans and specifications required official review and approval by the Colorado Dam Safety Branch. This process was underway with the State during the award of the construction contract in order to keep the construction contract on schedule to wrap up the first week in March. Upon review and approval of the final construction documents on October 7, 2021, the State identified a number of items that required correction. These changes resulted in the construction changes identified in Change Order #2 for an additional project cost of $51,610.00.

The award of the Construction Contract on September 8, 2021 only included construction administration for Phase 1 of the Johnstown Reservoir Dam Repair project. Staff requested and was approved to hire J&T Consulting for construction observation and services for Phase 1 due to the value added in project knowledge and experience with navigating State requirements. The Town wants to be consistent with the construction observation approach and is requesting the additional funding of $19,800.00 to cover J&T to perform the construction observation for Phase 2 and close out services for the project.

The Town budgeted $425,000 for the project in Drainage 2021. The project expenses for 2021 are anticipated to be the following which is covered by the appropriated amount.

2021 Project Expenses

J&T Design Services	$66,150.00
J&T Phase 1 Construction Administration (29%)	$20,553.00
J-2 Construction Contract Phase 1 (29%)	$204,335.00
J-2 Construction Contract Change Order #1 Dewatering	$88,500.00
Total	**$379,538.00**

The Town budgeted $265,000.00 for the project in Parks 2022 and anticipates a project roll over of $45,462.00 from Drainage 2021 for a total of $310,462.00. The project expenses for 2022 are anticipated to be the following which will require an amendment to the budgeted amount of $1,035,155.00 to correct the shortfall of $395,495.00 and account for the additional services requested of $639,660.00.

2022 Project Expenses

J&T Phase 1 Construction Administration (71%)	$50,317.00
J&T Phase 2 & Closeout Construction Administration	$19,800.00
J-2 Construction Contract Phase 1 (71%)	$503,345.00
J-2 Construction Contract Phase 2 (100%)	$240,795.00
J-2 Construction Contract Change Order #1 Dredging	$479,750.00
J-2 Construction Contract Change Order #2 State Revisions	$51,610.00
Total	**$1,345,617.00**

The Total Project Costs for the Johnstown Reservoir Dam Repair project prior to this request for additional funds was $1,085,495.00. The additional services requested with this communication total an additional fund request of $639,660.00 for the following scope of work; 1) Change Order #1 Dewatering the Johnstown Reservoir ($88,500), 2) Change Order #1 Dredging the Johnstown Reservoir ($479,750), 3) Change Order #2 Construction Items required by the State Review of the Contract Documents ($51,610) and 4) J&T Phase 2 & Close Out Construction Admin Costs ($19,800).

LEGAL ADVICE:

N/A

FINANCIAL ADVICE:

The Town has budgeted adequate Funds to cover project expenses in 2021 and will be required to address additional project funds of $1,035,155.00 in the 2022 budget to cover the additional services requested of $639,660.00 and the budget shortfall of $395,495.00. These funds are proposed in the FY 2022 budget predominantly included in the Capital Project Fund.

RECOMMENDED ACTION: Staff recommends approval of the award inclusive of the change order.

SUGGESTED MOTIONS:

For Approval:
I move to authorize the additional funds for a total amount of $639,660.00 and make the necessary 2022 budget allocations for the Johnstown Reservoir Dam Repair project to provide the following additional services; 1) Dewater the Johnstown Reservoir ($88,500), 2) Dredge the Johnstown Reservoir ($479,750), 3) Change Order Construction Items required by the State Review of the Contract Documents ($51,610) and 4) Phase 2 & Close Out Construction Admin Costs ($19,800).

For Denial:
I move to deny the request for additional services as presented and direct Staff to reevaluate the project needs.

Reviewed and Approved for Presentation,

Town Manager

J-2 CONTRACTING COMPANY
105 Coronado Ct. Unit A-101, Fort Collins, CO 80525 | 970-392-0694 | www.j2contracting.com
Heavy Civil Construction | Public Utilities | Parks | Streetscapes | Drainage Improvements | Aggregate Sales | Contract Crushing

Johnstown Reservoir Repair Change Order Request #001

Item #	Description	Units	UM	Unit Price	Total
	Option 1 Place Sediment In Western Depression				
COR1.1	Dewater Reservoir Below Elevation 4979.00' (Discharge to Pump Station @ 4,000 GPM to be Diverted into Home Supply Ditch)	3.00	Weeks	$ 29,500.00	$88,500.00
COR1.2	Collect Remaining Fish and Place Them In Western Depression (To Be Buried With COR1.3)	1	LS	$ 8,000.00	$8,000.00
COR1.3	Excavate West End Sediment And Place In West Depression	13,497	CY	$ 9.00	$121,473.00
COR1.4	Excavate Remaining West End Sediment And Dispose Off Site (To Be Measured By The Truck Load of Material Exported @ 16 CY/LD)	5,503	CY	$ 25.25	$138,950.75
				Option 1 Total	$356,923.75
	Option 2 Export West End Sediment				
COR1.1	Dewater Reservoir Below Elevation 4979.00' (Discharge to Pump Station @ 4,000 GPM to be Diverted into Home Supply Ditch)	3.00	Weeks	$ 29,500.00	$88,500.00
COR1.2	Leave Fish in Place, Let Them Congregate In Western Depression (No Handling or Disposal)	-	LS		$0.00
COR1.3	Excavate Remaining West End Sediment And Dispose Off Site (To Be Measured By The Truck Load of Material Exported @ 16 CY/LD)	19,000	CY	$ 25.25	$479,750.00
				Option 2 Total	$568,250.00

J-2 CONTRACTING COMPANY
105 Coronado Ct. Unit A-101, Fort Collins, CO 80525 | 970-392-0694 | www.j2contracting.com
Heavy Civil Construction | Public Utilities | Parks | Streetscapes | Drainage Improvements | Aggregate Sales | Contract Crushing

Johnstown Reservoir Repair Change Order Request #002					
Item #	Description	Units	UM	Unit Price	Total
COR 2.1	Modify Outlet Tower Hardware Per Revised Drawings (Staff Gauge - Plate Attachment)	1	LS	$ 9,150.00	$9,150.00
COR 2.2	Concrete Mud Mat Increase	1	CY	$ 1,500.00	$1,500.00
COR 2.3	Filter Diaphragm Around Outlet Pipe/Concrete Encasement	1	LS	$ 11,250.00	$11,250.00
COR 2.4	Concrete Backfill Around Exposed Sections of Existing RCP Pipe	11	CY	$ 1,200.00	$13,200.00
COR 2.5	Credit - Eliminate Cleanout Manhole for Toe Drain (Item 15)	(1)	LS	$ 13,000.00	-$13,000.00
COR 2.6	Toe Drain Cleanout, Including All Appurtenances	1	LS	$ 5,950.00	$5,950.00
COR 2.7	12" Thick x 5' Deep, Concrete Cutoff Wall	1	LS	$ 23,560.00	$23,560.00

COR Total $51,610.00

J&T Consulting, Inc.

Town of Johnstown

Johnstown Reservoir Repair Construction Services

10/2/2021

Professional Services Scope and Fee Summary

	Hours					
Task Description	**Project Manager** J.C. York	**Project Engineer** Todd Yee, Jason Murray	**Senior Designer** T. Tuttle, K. Simpson, J. Schlagel	**Cesare** Geotech Observation and Materials Testing	**American West** Survey	**Task Subtotal**
rate	*$125*	*$110*	*$95*			
Phase 2 - Johnstown Reservoir Repair Construction - Expected 1 Month Duration						
Task 1 - Conforming Construction Documents						
Construction Drawing Updates - Address Review Comments for SEO	0	0	0			$0
Construction Specification Updates - Address Review Comments for SEO	0	0	0			$0
Task 2 - Project Coordination/Management and Meetings						
Project Coordination/Management	8					$1,000
Pre-Construction Conference	0					$0
Construction Progress Meetings	4					$500
Task 3 - Construction Observation and Submittals Review						
Construction Observation	8	20	30			$6,050
Submittals Review	2	2	4			$850
Task 4 - Monthy Construction Reports and General Correspondence (For Town and SEO)						
Monthly Construction Reports	2	2	4			$850
Task 5 - Payment Application and Change Order Review						
Payment Application Review	2					$250
Change Order Review	2					$250
Task 6 - Geotechnical Observation and Materials Testing				$2,000		$2,000
Task 7 - Site Quantity Surveys and As-Built Documentation	2	4	4		$750	$1,820
Subtotals	***30***	***28***	***42***	***$2,000***	***$750***	***$13,570***

J&T Consulting, Inc.

Town of Johnstown

Johnstown Reservoir Repair Construction Services

10/2/2021

Professional Services Scope and Fee Summary

	Hours					
Task Description	**Project Manager** J.C. York	**Project Engineer** Todd Yee, Jason Murray	**Senior Designer** T. Tuttle, K. Simpson, J. Schlagel	**Cesare** **Geotech Observation and Materials Testing**	**American West** **Survey**	**Task Subtotal**
rate	*$125*	*$110*	*$95*			
Johnstown Reservoir Construction Closeout - Phase 1 and Phase 2						
Task 1 - Construction Closeout						
SEO Rule 10 Submittal	6	12	16			$3,590
Subtotals	***6***	***12***	***16***	***$0***	***$0***	***$3,590***

Subtotal	**$17,160**
Expenses	**$2,640**
Construction Services Total	**$19,800**

Johnstown Reservoir Dam Repair Project - Summary of Costs:

Task	Amount $
J&T Design Services	$ 66,150.00
J&T Construction Administration	
Phase 1	$ 70,870.00
Phase 2 + Close Out	$ 19,800.00
J-2 Construction Contract	$ 948,475.00
Change Order #1 (Dewatering)	$ 88,500.00
Change Order #1 (Dredging)	$ 479,750.00
Change Order #2 (State Revisions)	$ 51,610.00
Total Project Cost	**$ 1,725,155.00**
Original Project Budget 9/8	$1,085,495.00
Additional Services Requested 11/1	**$ 639,660.00**

Johnstown Reservoir Dam Repair - Yearly Breakdown of Expenses

2021 Project Expenses		
J&T Design Services	$	66,150.00
J&T Phase 1 Construction Administration (29%)	$	20,553.00
J-2 Construction Contract Phase 1 (29%)	$	204,335.00
J-2 Construction Contract Change Order #1 Dewatering	$	88,500.00
2021 Total	**$**	**379,538.00**
2021 Budget Allocation	$	425,000.00
2021 Roll-Over	$	45,462.00
2022 Project Expenses		
J&T Phase 1 Construction Administration (71%)	$	50,317.00
J&T Phase 2 & Closeout Construction Administration	$	19,800.00
J-2 Construction Contract Phase 1 (71%)	$	503,345.00
J-2 Construction Contract Phase 2 (100%)	$	240,795.00
J-2 Construction Contract Change Order #1 Dredging	$	479,750.00
J-2 Construction Contract Change Order #2 State Revisions	$	51,610.00
2022 Total	**$**	**1,345,617.00**
2022 Budget Allocation	$	265,000.00
2021 Roll-Over	$	45,462.00
Additional Services Requested	$	639,660.00
2022 Budget Shortfall	$	395,495.00
2022 Total Unfunded	$	1,035,155.00
Combined Project Total	**$**	**1,725,155.00**

Town of Johnstown

TOWN COUNCIL AGENDA COMMUNICATIONS

AGENDA DATE: November 1, 2021

SUBJECT: South Tank Water Distribution System Project

ACTION PROPOSED: Consider Awarding Construction Contract for South Tank Water Distribution System to SMH West, LLC

ATTACHMENTS:

1. South Tank WDS Bid Results
2. South Tank WDS Bid Review
3. South Tank WDS JUB Additional Services 1
4. South Tank WDS JUB Additional Services 2
5. South Tank – Total Project Cost Breakdown
6. South Tank WDS Construction Contract

PRESENTED BY: Ellen Hilbig, Utilities Director

AGENDA ITEM DESCRIPTION:

Enclosed for your review and consideration is a request to award the construction contract for the South Tank Water Distribution System to SMH West, LLC. The project scope consists of furnishing and installing approximately 37,300 LF of 16-inch C905 (DR18) PVC pipeline, 12" and 16" fittings, isolation valves, 2 air relief valves, 40 fire hydrants, pipe restraints, one HDD river crossing, four bored irrigation crossings, two tunneled railroad crossings, two county road crossings, and related work to provide water and loop the distribution system to the Town's new South Water Tank.

The bid of this project signifies the completion of design efforts with J-U-B Engineers, Inc. to connect and feed the 1.5-million-gallon elevated south water tank being constructed near the intersection of WCR 17 and WCR 40 with the installation of a new distribution line from Hwy 60 to the tank site and connection to the Pioneer Ridge development. The benefits of this project include additional system/water capacity, new distribution pressure zones providing consistent pressures, and better water service and water quality for Town Residents. The construction of the tank and distribution line was identified in the 2015 Water Utility report to meet the Town's current and future water distribution needs.

At the beginning of September 2021, the Town posted the project on the Rocky Mountain E-Purchasing System to solicit bids from qualified Contractors for construction. A non-mandatory Pre-Bid meeting was held virtually on September 9, 2021 at 10:00am. Bids were received by 2 pm on Thursday October 14, 2021.

The Town received seven bid submittals:

Contractor	**Total Bid Cost**
SMH West, LLC	$9,044.000.00
IHC Scott, Inc.	$9,364,230.50
K.R. Swerdfeger Construction, LLC	$10,933,435.00
BT Construction, Inc	$12,144,933.00
Hudick Excavating, Inc. DBA HEI Civil	$12,620,694.95
Mountain View Building, Inc.	$12,804,721.00
Native Sun Construction, Inc.	$15,170,478.35

J-U-B Engineers, Inc. performed an independent review of bid submittals as well as reference checks and collaborated with Town Staff to select a qualified bidder. Staff is recommending awarding the South Tank Water Distribution System to SMH West, LLC in an amount not to exceed the bid of $9,044,000.00 which came in below the cumulative budgeted amount. J-U-B Engineers, Inc.is also requesting the approval for authorization of two additional services requests. Additional Services Request 1 is in the amount of $768,000.00 and covers additional project design costs and construction administration services. Additional Services Request 2 is in the amount of $234,500.00 and covers the quality assurance testing for both the South Water Tank and South Tank Water Distribution System projects.

A total of sixteen million ($16,000,000) was allocated in the FY2021 budget for the entire project including the south tank construction, distribution system construction, permitting, south tank inspections/testing, distribution system inspections/testing, as well as design and construction administration. The attachment South Tank Total Cost Breakdown shows the remaining funds for the project of $727,300.00. Staff is requesting Council award the construction contract in the amount of $9,044,000.00 to SMH West, LLC, approve the additional services for J-U-B Engineers, Inc. in the amount of $768,000.00 for Additional Services Request 1 and $234,500.00 for Additional Services Request 2, as well as provide access to the remaining $727,300.00 by authorization from the Town Manager to approve the use of additional funds for unforeseen construction expenses encountered on the project not to exceed the budgeted amount.

LEGAL ADVICE:
Construction Contract has been reviewed and finalized with the Town's Attorney

FINANCIAL ADVICE:

The Town appropriated $16 million in Water Funds in the 2021 budget for the entire project and is currently $768,000.00 under budget.

RECOMMENDED ACTION:
Staff is requesting Council award the construction contract in the amount of $9,044,000.00 to SMH West, approve the additional services for J-U-B Engineers, Inc. in the amount of $768,000.00 for Additional Services Request 1 and $234,500.00 for Additional Service Request 2, as well as provide access to the remaining $727,300.00 by authorization from the Town Manager to approve additional funds for construction expenses encountered on the project not to exceed the budgeted amount.

SUGGESTED MOTIONS:

For Approval: I move to award the construction contract in the amount of $9,044,000.00 to SMH West, LLC, approve the additional services for J-U-B Engineers, Inc. in the amount of $768,000.00 for Additional Services Request 1 and $305,000.00 for Additional Services Request 2, as well as provide access to the remaining budgeted amount of $727,300.00 by authorization from the Town Manager to approve the use of additional funds for unforeseen construction expenses encountered on the project not to exceed the budgeted amount.

For Denial: I move to deny the selection of SMH West, LLC, as the Construction Contractor for the South Tank Water Distribution System project and direct Staff to rebid the project.

Reviewed and Approved for Presentation,

Town Manager

TOWN OF JOHNSTOWN - South Tank WDS Loop

BID OPENING - TOWN OF JOHNSTOWN, TOWN HALL - 2:00 P.M. - OCTOBER 14, 2021

BIDDER NAME	PIPE ALT. A (Schedule A+B+C +ADDALT1+ADDALT2)	PIPE ALT. B (Schedule A+B+D +ADDALT1+ADDALT2)
SMH West	$9,044,000.00	$10,255,000.00
IHC Scott, Inc.	$9,364,230.50	$9,941,830.50
K.R. Swerdfeger Construction, LLC	$10,933,435.00	$11,282,235.00
BT Construction, Inc.	$12,144,933.00	NO BID
Hudick Excavating, Inc. DBA HEI Civil	$12,620,694.95	NO BID
Mountain View Building, Inc.	$12,804,721.00	$14,357,021.00
Native Sun Construction, Inc.	$15,170,478.35	$13,936,693.35

J-U-B ENGINEERS, INC.

J-U-B COMPANIES THE LANGDON GROUP GATEWAY MAPPING INC.

October 22, 2021

Ellen Hilbig
Interim Director of Public Works
Town of Johnstown
450 S. Parish Ave,
PO Box 609
Johnstown, Colorado 80534

RE: TOWN OF JOHNSTOWN – SOUTH TANK WATER DISTRIBUTION SYSTEM BID REVIEW

Dear Ms. Hilbig:

The Town of Johnstown received seven bids for the South Tank WDS Loop Project on October 14, 2021. The bid included two different schedules to better apportion costs, two pipe alternates (PVC and HDPE) to address materials shortages, and two additive alternates in the event that inadequate budget exists for the project. Based on information provided by project bidders, it appears that both types of pipe are available so the costs summarized in this letter will reflect C-905 PVC which is the preferred pipe for this project.

The apparent low bid was submitted by SMH West, LLC of Castlerock, CO with a total Bid (including Schedules A&B, Pipe Alternate A, and Additive Alternates A&B) price of $9,044,000.00. A summary of the Bids, and the Engineer's Opinion of Cost, is included in the table below and a detailed Bid Abstract is **enclosed**.

BIDDER	SCHEDULE A	SCHEDULE B	PIPE ALTERNATE A	ADDITIVE ALT A	ADDITIVE ALT B	TOTAL BID (PIPE ALT A)
SMH West, LLC	$1,934,489.00	$2,223,611.00	$4,600,900.00	$187,000.00	$98,000.00	**$9,044,000.00**
IHC Scott, Inc.	$1,970,682.60	$1,829,247.90	$5,280,400.00	$172,200.00	$111,700.00	**$9,364,230.50**
K.R. Swerdfeger Construction, LLC.	$2,392,600.00	$2,787,635.00	$5,487,200.00	$152,000.00	$174,000.00	**$10,993,435.00**
BT Construction, Inc	$2,066,421.00	$2,331,772.00	$7,397,355.00	$227,895.00	$121,490.00	**$12,144,933.00**
Hudick Excavating, Inc DBA HEI Civil [a]	$3,446,383.00	$2,652,341.95	$6,212,715.00	$161,700.00	$147,485.00	**$12,620,624.95**
Mountain View Building, Inc.	$2,737,832.00	$3,244,727.00	$6,570,200.00	$138,789.00	$113,173.00	**$12,804,721.00**
Native Sun Construction, Inc	$3,276,195.12	$2,781,394.57	$8,290,647.00	$465,169.25	$357,072.41	**$15,170,478.35**
Engineer's Opinion of Cost	*$2,165,912.50*	*$2,085,475.00*	*$5,972,900.00*	*$82,500.00*	*$99,000.00*	***$10,405,787.50***

[a] *This Bidder made two errors on their Bid Form. The first appears to be an incorrect unit price for "one inch service line" and an incorrect total for "miscellaneous surface repair". This bidder was significantly higher than others so these errors do not affect the result. Please see the Bid Abstract for additional details.*

J-U-B Engineers, Inc. (J-U-B) reviewed the Bids to determine general compliance with the administrative requirements of the Bidding phase (i.e. whether each Bid received appears to be responsive) based on the following:

1. Bid received on time in a properly sealed envelope
2. Addenda properly acknowledged
3. Bid Form was completed in general conformance with the Instructions to Bidders
4. Bid Security included
5. Bid signed

Our review did not include the following:

1. Verification of the Bidder's business legal status,
2. The signatory's authority to sign, and
3. Other possible reasons for considering the bids unresponsive.

The Bid documents for the lowest Bidder, SMH Inc., appear to be complete and responsive. The remaining six Bids also appear to be complete and responsive, although the Bid from Hudick Excavating, Inc. included minor typographic errors as noted above but these did not affect the outcome of the Bid. We recommend you work with your legal counsel to review the apparent low Bid and conduct any further review that is warranted in order to determine the final award status.

If your review determines the Bid from SMH West Inc. is responsive, we recommend the City consider awarding Schedule A, Schedule B, Pipe Alternate A, Additive Alternate A, and Additive Alternate B to SMH West, Inc. for a total contract price of Nine Million, Forty Four Thousand and no/100 Dollars ($9,044,000.00).

Please review this information and let us know how you would like to proceed. J-U-B will prepare the Notice of Award and Agreement documents accordingly for the City's use should you choose to award the project to SMH West, Inc.

Please do not hesitate to contact me at (970) 377-3602 if you would like to discuss our review or have additional questions.

Sincerely,

J-U-B ENGINEERS, Inc.

Stephen P. James, P.E.
Project Manager

Encl. Bid Abstract

J-U-B ENGINEERS, INC.

J-U-B ENGINEERS, Inc.
AGREEMENT FOR PROFESSIONAL SERVICES

Authorization for Additional Services

CLIENT: Town of Johnstown

Project Name: South Tank and Water Distribution Loop - AAS #1

J-U-B Project Number: 87-20-004

1. *Additional Services.* The following additional items of work on the project referenced above have been or will be provided by J-U-B ENGINEERS, Inc. (J-U-B). These Additional Services are a supplement to the scope of services contained in J-U-B's existing Agreement for Professional Services for this Project, dated February 4th, 2020. All other TERMS AND CONDITIONS of said Agreement remain in full force and effect.

   Additional Engineering services (Site Survey, SUE, Geotechnical, Environmental, Engineering Design) to provide construction documents for:
   - Connection from WCR 15 to WCR 13 via WCR 42 and the Olson Property to fully loop the south water distribution system from the south water storage tank to WCR 13 and SH 60. (approximately 2 miles)
   - Realignment of 2 miles of waterlines to reduce utility conflicts.
   - Pre-design of a new booster pump station along WCR 13 to connect with Tank fill pipe at WCR 17 and WCR 42. Note: Town does not intend to build the BPS at this time.
   - Decommissioning of the Stroh Farm pump station along WCR 17 and replace it with a pressure reducing valve.
   - Addition of a second bid package for the waterline.

2. *Verbal Authorization by CLIENT, if Applicable.* J-U-B was verbally authorized by the CLIENT to provide these Additional Services by:

   _____ _____
   Name *Date*

3. *Payment for Additional Services.* Unless otherwise noted below, J-U-B will provide these Additional Services on a time and materials basis, using J-U-B's standard billing rates or, if applicable, the billing rates established in the initial Agreement for Professional Services.

   Other Basis for Payment:

   See Attached Scope of Work and Cost Summary

4. *Schedule of Services.* Due to the Additional Services, the Schedule of Services to be performed under the original Agreement for Professional Services is modified as follows:

   See Attached Scope of Work

Dated this 1 day of November, 2021,

CLIENT	**J-U-B ENGINEERS, Inc.**
By:	By:
Project Representative or Authorized Signatory for CLIENT	Project Representative or Authorized Signatory for J-U-B
Print or Type Name and Title	Print or Type Name and Title

J·U·B ENGINEERS, INC.

J-U-B ENGINEERS, Inc.
AUTHORIZATION FOR ADDITIONAL SERVICES

Attachment 1 – Scope of Services, Basis of Fee, and Schedule

PROJECT NAME: South Tank and Water Distribution Loop
CLIENT: Town of Johnstown
J-U-B PROJECT NUMBER: 87-20-004
CLIENT PROJECT NUMBER: Click or tap here to enter text.
ATTACHMENT TO:

☐ **AGREEMENT DATED:** Click or tap to enter a date.**; or**

☒ **AUTHORIZATION FOR ADDITIONAL SERVICES #1; DATED: 11/1/2021**

The referenced Agreement for Professional Services executed between J-U-B ENGINEERS, Inc. (J-U-B) and the CLIENT is amended and supplemented to include the following provisions regarding the Scope of Services, Basis of Fee, and/or Schedule:

PART 1 - PROJECT UNDERSTANDING

J-U-B's understanding of this project's history and CLIENT's general intent and scope of the project are described as follows:

Due to difficulty obtaining easements for the southern end of the waterline the Town has decided to realign approximately two miles of water line. In addition, the tank elevation was raised 60 feet to serve additional portions of the Town's Growth Management Area and requires a new booster pump station to fill the water tank. This scope covers Site Survey, SUE, Geotechnical, Environmental, Engineering Design to provide construction documents for:

- Connection from WCR 15 to WCR 13 via WCR 42 and the Olson Property to fully loop the south water distribution system from the south water storage tank to WCR 13 and SH 60. (approximately 2 miles)
- Realignment of 2 miles of waterlines to reduce utility conflicts.
- Pre-design of a new booster pump station along WCR 13 to connect with Tank fill pipe at WCR 17 and WCR 42. Note: Town does not intend to build the BPS at this time.
- Decommissioning of the Stroh Farm pump station along WCR 17 and replace it with a pressure reducing valve.
- Addition of a second bid package for the waterline.

PART 2 - SCOPE OF SERVICES BY J-U-B

J-U-B's Additional Services under this Agreement are limited to the following tasks. Any other items necessary to plan and implement the project, including but not limited to those specifically listed in PART 3, are the responsibility of CLIENT.

A. **Task 100: Management**

1. Subtasks 001 and 002: Project Management and meetings
   a. Meetings – assumed to be eight additional progress meetings
   b. Invoicing – monthly during the project
   c. Updates – monthly updates regarding project progress
   d. QC Reviews – for pipeline and booster pump station design
   e. Support Town Coordination with Utilities

B. **Task 200: Design**

1. Subtask 001: Preliminary Design
   a. Update Connection Requirements to existing pipeline
   b. Submit Preliminary Design (30%) Package to Town for review
2. Subtask 002: Interim Design (60%)
   a. Coordinate Changes based on Town's review of Drawings and Specifications
   b. Design Pipeline Connection Requirements and Details
   c. Prepare Legal Descriptions for ROW and/or Easements (assume 4 Exhibits and Legal Descriptions)
3. Subtask 003: Pre-Final (90%) and Final (100%) Design
   a. Confirm ROW and Required Easements (Town to perform negotiations)
   b. Prepare Pre-Final Pipeline Drawings Set for Town Review
   c. Update Engineer's Opinion of Probable Construction Costs
   d. Integrate Town Provided Review Comments
   e. Finalize Bid Documents
   f. Submit Final Bid Documents to Town for Bidding
   g. Contingency
4. Subtask 004: Design Completion/Change in Original Alignment - Utilities
   a. Evaluate Preliminary Traffic Control Requirements for Construction
   b. Update preliminary Opinion of Probable Construction Costs
   c. Update Tunnel Specifications and Design (geotechnical subconsultant – Lithos)
   d. Revise Traffic Control Layout
   e. Develop Environmental Impact Assessment
   f. Update SWMP Plan Sheets.
   g. Confirm SUE – potholing of new alignment conflicts.
   h. Coordinate with other utility providers
5. Subtask 005: Pipeline Realignment (Olson)
   a. Locate Utilities Via Private Locator for new pipeline and areas of existing pipeline as determined to be needed.
   b. Perform Topographical Survey of Additional Pipe Segments
   c. Update Geotechnical Investigation to evaluate new pipeline segment
   d. Revise 60% Design Drawings including pipeline layout and utility conflicts
   e. Develop SWMP plan sheets.
   f. Perform SUE Investigation of new pipeline
   g. Submit 90% Design Package (Final design documents including pipeline design drawings and specifications)
   h. Develop Preliminary Sediment and Erosion Control Design
   i. Coordinate Final Alignment with adjacent utilities
6. Subtask 006: Booster Pump Station Design
   a. Develop Design Technical Memorandum for booster pump station.
   b. Develop Preliminary BPS Design including configuration, layout, and pump alternatives.
   c. Develop 60% Booster Pump Station Drawings including final layout, building configuration, and mechanical details

C. **Task 300: Construction**

1. Subtask 001: Bidding and Award of Water Line
   a. Conduct a pre-bid meeting.
   b. Respond to Contractor questions.
   c. Issue addenda based on contractor questions, if required.
   d. Provide assistance during review of bids, including:
      i. Review of bids received for general conformance with the bid requirements.

ii. Prepare a bid summary letter summarizing bid results for review by CLIENT and CLIENT'S legal counsel.

e. Prepare contract award documents and construction agreements and facilitate execution of the documents, if CLIENT decides to award a contract for project construction.

2. Subtask 002: Construction Administration (See Attached Standard Exhibit A – Construction Phase Services).
   a. Collaborate with Contractor on Submittal Schedule
   b. Review and Respond to Submittals and Requests for Information
   c. Issue Supplemental Instructions as Requested by Town
   d. Prepare Record Drawings based on Contractor changes
   e. Coordinate Substantial Completion with Johnstown
   f. Perform Site Visit and Walk Through and Punch List
   g. Closeout Project files
   h. Assist Johnstown to Resolve Warranty Repair Issues
   i. Contingency
3. Subtask 003: Resident Project Representative
   a. Perform Periodic Field Observations – estimated to be 24hrs per week to support Town's Observation Staff
   b. Assumptions
      i. Field quality control (compaction and other testing) will be completed by the Contractor.
      ii. Construction observation services will be provided as detailed in the attached Standard Exhibit A – Construction Phase Services.

D. **Task 400: Additional Services**
1. Subtask 001: Service Pressure Evaluation along pipeline route
   a. Participate in 2 Client Meetings to Review Data
   b. Update Model for area South of Johnstown along Colorado Boulevard to WCR42.
   c. Prepare Summary Pressure Map

PART 3 - CLIENT-PROVIDED WORK AND ADDITIONAL SERVICES

A. **CLIENT-Provided Work -** CLIENT is responsible for completing, or authorizing others to complete, all tasks not specifically included above in PART 2 that may be required for the project including, but not limited to:
1. Negotiating all Easements and Right Of Way Takings.
2. Reviewing Submittals In a Timely Manner.

B. **Additional Services** - CLIENT reserves the right to add future tasks for subsequent phases or related work to the scope of services upon mutual agreement of scope, additional fees, and schedule. These future tasks, to be added by amendment at a later date as Additional Services, may include:
1. Additional Construction Support including Full Time Field Observation

PART 4 - BASIS OF FEE AND SCHEDULE OF SERVICES

A. CLIENT shall pay J-U-B for the identified Services in PART 2 as follows:
1. For Lump Sum fees:
   a. The portion of the Lump Sum amount billed for J-U-B's services will be based upon J-U-B's estimate of the percentage of the total services actually completed during the billing period.
2. For Time and Materials fees:
   a. For all services performed on the project, Client shall pay J-U-B an amount equal to the cumulative hours charged to the Project by each class of J-U-B's personnel times J-U-B's standard billing rates.
   b. Client shall pay J-U-B for Reimbursable Expenses times a multiplier of 1.1

c. Client shall pay J-U-B for J-U-B's Consultants' charges times a multiplier of 1.1.

3. For Cost Plus Fixed Fees:
   a. Client shall pay J-U-B an amount equal to the cumulative hours charged to the Project by each class of J-U-B's personnel times their hourly salary rate times J-U-B's audited overhead multiplier for all services performed on the Project.
   b. Client shall pay J-U-B a lump sum fixed fee.
   c. Client shall pay J-U-B for Reimbursable Expenses times a multiplier of 1.1.
   d. Client shall pay J-U-B for J-U-B's Consultants' charges times a multiplier of 1.1.
4. J-U-B may alter the distribution of compensation between individual tasks to be consistent with services actually rendered while not exceeding the total project amount.

B. Period of Service: If the period of service for the task identified above is extended beyond 12 months, the compensation amount for J-U-B's services may be appropriately adjusted to account for salary adjustments and extended duration of project management and administrative services.

C. CLIENT acknowledges that J-U-B will not be responsible for impacts to the schedule by actions of others over which J-U-B has no control.

D. The following table summarizes the increase in fees and anticipated schedule for the services identified in PART 2.

Task Number	Task Name	Fee Type	Additional Amount	Anticipated Schedule
100-001	Project Management and Meetings	Time and Materials (Estimated Amount Shown)	$40,000	Concurrent with work progress
200-001	Preliminary Design	Time and Materials (Ceiling Amount Shown)	$8,290	Completed
200-002	Interim Design (60%)	Time and Materials (Ceiling Amount Shown)	$14,290	Completed
200-003	Final Design	Time and Materials (Ceiling Amount Shown)	$64,910	Completed
200-004	Design Completion/Realignment	Time and Materials (Ceiling Amount Shown)	$169,210	Completed
200-005	Olson Realignment	Time and Materials (Ceiling Amount Shown)	$62,075	Completed
200-006	Booster Pump Station Design	Time and Materials (Ceiling Amount Shown)	$23,250	Completed
300-001	Waterline Bidding	Time and Materials (Estimated Amount Shown)	$28,000	• Subsequent to Task 300-001. Expected to Begin October 1, 2021
300-002	Construction Administration	Time and Materials (Estimated Amount Shown)	$177,735	• Subsequent to Task 300-001. • Bidding and award is expected to occur in October/November 2021.

				• Construction is expected to begin in winter 2021 and finish late fall 2022 (December, 2021 through October. 2022). • Record Drawings will be complete 30 calendar days after receipt of required information from contractor and CLIENT • Closeout is expected to occur in late summer 2022 (September).
300-003	Construction Observation (RPR)	Time and Materials (Estimated Amount Shown)	$168,000	• Concurrent with Task 300-002
060-001	Service Pressure Analysis Along Pipeline Route	Time and Materials (Estimated Amount Shown)	$12,240	Complete
		Total:	**$768,000**	

***NOTE on Coronavirus and Schedule**: J-U-B is committed to meeting your project schedule commitments as delineated above. As our response to the COVID-19 pandemic, J-U-B is engaging in safety procedures in help to protect clients, staff, their families, and the public. Our staff or offices may be subject to quarantine or other interruptions. Since COVID-19 impacts are beyond J-U-B's control, we are not responsible for the force majeure impacts to delivery timelines, or subsequent project delays and related claims, costs, or damages. Should circumstances related to the COVID-19 issue arise with J-U-B staff or in a J-U-B office that will impact our delivery schedule, we will notify you of the circumstances and mutually agree to a schedule adjustment.*

Exhibit(s):

- Standard Exhibit A: Construction Phase Services

For internal J-U-B use only:

PROJECT LOCATION (STATE): Colorado

TYPE OF WORK: City

R&D: Yes

GROUP: Water/Wastewater

PROJECT DESCRIPTION(S)**: Composite Tank, Booster Pump Station, Water Pipeline**

- Water Supply/Treatment/Distribution (W03)
- None

J-U-B ENGINEERS, Inc.
AGREEMENT FOR PROFESSIONAL SERVICES

J-U-B ENGINEERS, INC.

Standard Exhibit A – Construction Phase Services

Client Name: Town of Johnstown, CO **Project**: South Tank and WDS Loop

The Agreement for Professional Services dated February 4, 2020 is amended and supplemented to include the following agreement of the parties with respect to Services during the construction phase of the Project.

For the purposes of this exhibit, 'Agreement for Professional Services' and 'the Agreement' shall refer to the document entitled 'Agreement for Professional Services,' executed between J-U-B and CLIENT to which this exhibit and any other exhibits have been attached.

For the purposes of this exhibit, the term 'Contract Documents,' shall be defined as documents that establish the rights and obligations of the parties engaged in construction and include the Construction Agreement between CLIENT and contractor, Addenda (which pertain to the Contract Documents), contractor's bid (including documentation accompanying the bid and any post-bid documentation submitted prior to the notice of award) when attached as an exhibit to the Construction Agreement, the notice to proceed, the bonds, appropriate certifications, the General Conditions, the Supplementary Conditions, the Specifications and the Drawings, together with all Written Amendments, Change Orders, Work Change Directives, Field Orders, and J-U-B's written interpretations and clarifications issued on or after the Effective Date of the Construction Agreement. Shop Drawings and the reports and drawings of subsurface and physical conditions are not Contract Documents.

For the purposes of this exhibit, the term 'Work,' shall be defined as the entire construction or the various separately identifiable parts thereof required to be provided by the construction contractor under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction; all as required by the Contract Documents.

For the purposes of this exhibit, the term 'Site,' shall be defined as lands or areas indicated in the Contract Documents as being furnished by CLIENT upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by CLIENT which are designated for the use of contractor.

CONSTRUCTION PHASE SERVICES

J-U-B shall provide Construction Phase Services as agreed below. There is a "Yes" and "No" box to the left of each Service. If a box is marked "Yes", J-U-B agrees to perform the Service listed. If a box is marked "No", J-U-B undertakes no duty to perform the Service listed. If a duty or a condition of performance is listed below that is a responsibility of CLIENT, CLIENT's agreement to perform the same is assumed.

It is understood and agreed that J-U-B shall not, during the performance of Services, or as a result of observations of the Work in progress, supervise, direct, or have control over contractor(s) Work; nor shall J-U-B have authority over or responsibility for the means, methods, techniques, sequences or procedures of construction selected by contractor(s), for safety precautions and programs incident to the Work of the contractor(s) or for any failure of contractor(s) to comply with laws, rules, regulations, ordinances, codes or orders applicable to contractor(s) furnishing and performing their Work or providing any health and safety precautions required by any regulatory agencies. Accordingly, J-U-B does not guarantee or warrant the performance of the construction contracts by contractor(s) nor assume responsibility of contractor(s) failure to furnish and perform their Work in accordance with the Contract Documents.

The CLIENT agrees that the general contractor shall be solely responsible for jobsite safety, and warrants that this intent shall be carried out in the CLIENT's contract with the general contractor. The CLIENT also agrees that the CLIENT, J-U-B and J-U-B's subconsultants shall be indemnified by the general contractor in the event of general contractor's failure to assure jobsite safety and shall be named as additional insureds under the general contractor's policies of general liability insurance.

NOTE on Coronavirus: *The contractor and contractor's COVID-19 Site Supervisor are responsible for full monitoring, compliance, and enforcement of the contractor's plan. J-U-'s review or other actions related to the contractor COVID-19 plan do not extend to the means, methods, techniques, sequences, or procedures of construction or to the safety precautions and programs incident thereto.*

J-U-B does not have authority over or responsibility for safety precautions (including the COVID-19 plan and compliance) related to the work of the contractor(s), or for any failure of contractor(s) to comply with applicable laws, rules, regulations, ordinances, codes, or orders. CLIENT agrees to indemnify, defend, and hold J-U-B harmless from any claims, damages, or costs associated with Contractor's site safety, including their COVID-19 compliance program.

Construction Phase

After receiving written authorization from CLIENT to proceed with the construction phase, J-U-B may provide the following Services with respect to this part of the Project:

☒ Yes ☐ No

1. *General Administration of the Contract Documents.* Consult with, advise, and assist CLIENT in J-U-B's role as CLIENT's representative. Relevant J-U-B communications with contractor shall be imputed to the CLIENT. Nothing contained in this Standard Exhibit A creates a duty in contract, tort, or otherwise to any third party; but, instead, the duties defined herein are performed solely for the benefit of the CLIENT. CLIENT shall agree to include this language in any such agreements it executes with contractor, subcontractors or suppliers.

☒ Yes ☐ No

2. *Pre-Construction Conference.* Participate in a pre-construction conference.

3. *Visits to Site and Observation of Construction / Resident Project Representative (RPR) Services.* In connection with observations of the Work while it is in progress:

☒ Yes ☐ No

a. Periodic Site Visits by J-U-B. Make visits to the Site at intervals appropriate to the various stages of construction, as J-U-B deems necessary, to observe as an experienced and qualified design professional the progress and quality of the Work. Such visits and observations, if any, are not intended to be exhaustive or to extend to every aspect of the Work or to involve detailed inspections of the Work beyond the responsibilities specifically assigned to J-U-B in this Agreement, but rather are to be limited to spot checking, selective sampling, and similar methods of general observation of the Work based on J-U-B's exercise of professional judgment as assisted by the RPR, if any. Based on information obtained during such visits and observations, J-U-B will determine in general, for the benefit of CLIENT, if the Work is proceeding in accordance with the Contract Documents, and J-U-B shall keep CLIENT informed of the progress of the Work.

☒ Yes ☐ No

b. Resident Project Representative ("RPR"). When requested by CLIENT, provide the Services of a RPR at the Site to provide more extensive observation of the Work. Duties, responsibilities, and authority of the RPR, are as set forth in the section entitled Resident Project Representative, herein. Through more extensive observations of the Work and field checks of materials and equipment by RPR, J-U-B shall endeavor to provide further protection to the CLIENT against defects and deficiencies in the Work. The furnishing of such RPR's Services will not extend J-U-B's responsibilities or authority beyond the specific limits set forth elsewhere in this Agreement.

☒ Yes ☐ No

4. *Defective Work.* Recommend to CLIENT that the Work be disapproved and rejected while it is in progress if J-U-B believes that such Work does not conform generally to the Contract Documents or that the Work will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents.

☒ Yes ☐ No

5. *Clarifications and Interpretations; Field Orders.* Recommend to CLIENT necessary clarifications and interpretations of the Contract Documents as appropriate to the orderly completion of the Work. Such clarifications and interpretations will be consistent with the intent of and reasonably inferable from the Contract Documents. Based on J-U-B's recommendations, CLIENT may issue Field Orders authorizing minor variations from the requirements of the Contract Documents.

☒ Yes ☐ No

6. *Change Orders, and Work Change Directives.* Recommend to CLIENT Change Orders or Work Change Directives, as appropriate, and prepare required documents for CLIENT consideration. CLIENT may issue Change Orders or Work Change Directives authorizing variations from the requirements of the Contract Documents.

☒ Yes ☐ No

7. *Shop Drawings and Samples.* Review or take other appropriate action in respect to Shop Drawings, Samples, and other data that contractor is required to submit, but only for conformance with the design concept of the Project and compliance with the information given in the Contract Documents. Such reviews or other action shall not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions and programs incident thereto.

J-U-B's review or other actions related to the contractor COVID-19 plan do not extend to the means, methods, techniques, sequences, or procedures of construction or to the safety precautions and programs incident thereto.

☒ Yes
☐ No

8. *Substitutes.* Consult with and advise CLIENT concerning, and determine the acceptability of, substitute materials and equipment proposed by contractor.

☒ Yes
☐ No

9. *Inspections and Tests.* Make recommendations to CLIENT concerning special inspections or tests of the Work, and the receipt and review of certificates of inspections, testing, and approvals required by laws and regulations and the Contract Documents (but only to determine generally that the results certified indicate compliance with the Contract Documents).

☒ Yes
☐ No

10. *Disagreements between CLIENT and Contractor.* Assist CLIENT in rendering formal written decisions on claims of CLIENT and contractor relating to the acceptability of the Work or the interpretation of the requirements of the Contract Documents pertaining to the execution and progress of the Work. In assisting in such decisions, J-U-B shall not be liable in connection with any decision rendered in good faith.

☒ Yes
☐ No

11. *Applications for Payment.* Based on J-U-B's on-site observations as an experienced and qualified design professional, and upon written request of CLIENT, review Applications for Payment and the accompanying supporting documentation. Assist CLIENT in determining the amounts owed to contractor and, if requested by CLIENT, recommend in writing to CLIENT that payments be made to contractor in such amounts. Such recommendations of payment will constitute a representation to CLIENT that, to the best of J-U-B's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of such Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, and subject to any subsequent tests called for in the Contract Documents or to any other qualification stated in the recommendation), and the conditions precedent to contractor's being entitled to such payments appear to have been fulfilled insofar as it is J-U-B's responsibility to observe the Work. In the case of unit price Work, J-U-B's recommendation of payment will include final determinations of quantities and classifications of the Work (subject to any subsequent adjustments allowed by the Contract Documents). By recommending any payment and after reasonable inquiry, J-U-B shall not thereby be deemed to have represented that exhaustive, continuous, or detailed reviews or examinations have been made by J-U-B to check the quality or quantity of the Work as it is furnished and provided beyond the responsibilities specifically assigned to J-U-B in this Agreement and the Contract Documents. J-U-B's review of the Work for the purposes of recommending payments will not impose on J-U-B the responsibility to supervise, direct, or control such Work, or for the means, methods, techniques, sequences, or procedures of construction or safety precautions or programs incident thereto, or contractor's compliance with laws and regulations applicable to its furnishing and performing the Work. J-U-B's review will also not impose responsibility on J-U-B to make any examination to ascertain how or for what purposes contractor has used monies paid to contractor by CLIENT; to determine that title to any of the Work, including materials or equipment, has passed to CLIENT free and clear of any lien, claims, security interests, or encumbrances; or that there may not be other matters at issue between CLIENT and contractor that might affect the amount that should be paid.

☒ Yes
☐ No

12. *Contractor's Completion Documents.* Receive and review maintenance and operating instructions, schedules, guarantees, bonds and certificates of inspection, tests and approvals, Shop Drawings, Samples, other data approved, and the annotated record documents which are to be assembled by contractor in accordance with the Contract Documents (such review will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspection, tests, or approvals indicates compliance with, such Contract Documents); transmit them to CLIENT with written comments.

☒ Yes
☐ No

13. *Substantial Completion.* Promptly after notice from CLIENT that contractor considers the Work for this part of the Project is ready for its intended use, in company with CLIENT and contractor, conduct a site visit to determine if the Work is substantially complete. Provide recommendation to CLIENT relative to issuance of Certificate of Substantial Completion.

☒ Yes
☐ No

14. *Final Notice of Acceptability of the Work.* Assist CLIENT in conducting a final inspection to determine if the completed Work is acceptable so that J-U-B may recommend, in writing, that final payment be made to contractor.

☐ Yes
☒ No

15. *Additional Tasks.* Perform or provide the following additional construction phase tasks or deliverables as delineated in Attachment 1 – Scope of Services and/or Schedule and/or Basis of Fee, which is included with the Agreement.

General Limitation of Responsibilities. J-U-B shall not be responsible for the acts or omissions of any contractor or of any of their subcontractors, suppliers, or any other individual or entity performing or furnishing any of the Work. J-U-B shall not be responsible for failure of any contractor to perform or furnish the Work in accordance with the Contract Documents. CLIENT shall agree to include this language in any such agreements it executes with contractor, subcontractors or suppliers.

J-U-B's Construction Phase Services will be considered complete on the date of Final Notice of Acceptability of the Work.

Post-Construction Phase

After receiving authorization from CLIENT to proceed with the post-construction phase, J-U-B may:

☐ Yes
☒ No

1. *Testing/Adjusting Systems.* Provide assistance in connection with the testing and adjusting of equipment or systems.

☐ Yes
☒ No

2. *Operate/Maintain Systems.* Assist CLIENT in coordinating training for CLIENT's staff to operate and maintain equipment and systems.

☐ Yes
☒ No

3. *Control Procedures.* Assist CLIENT in developing procedures for control of the operation and maintenance of, and recordkeeping for, equipment and systems.

☐ Yes
☒ No

4. *O&M Manual.* Assist CLIENT in preparing operating, maintenance, and staffing manuals.

☒ Yes
☐ No

5. *Defective Work.* Together with CLIENT, visit the Project to observe any apparent defects in the Work, assist CLIENT in consultations and discussions with contractor concerning correction of any such defects, and make recommendations as to replacement or correction of Defective Work, if present.

☐ Yes
☒ No

6. *Record Surveying.* Provide field surveying of readily accessible elements of the final completed construction to supplement the preparation of Record Drawings.

☒ Yes
☐ No

7. *Record Drawings.* Furnish a set of reproducible prints of Record Drawings showing significant changes made during the construction process, based on the annotated record documents for the Project furnished by the contractor.

☒ Yes
☐ No

8. *Warrantee Inspection.* In company with CLIENT or CLIENT's representative, provide an inspection of the Project within one month before the end of the contractor correction period to ascertain whether any portion of the Work is subject to correction.

☐ Yes
☒ No

9. *Additional Tasks.* Perform or provide the following additional post-construction phase tasks or deliverables as listed in Attachment 1 - Scope of Services and/or Schedule and/or Basis of Fee, which is included with the Agreement.

The Post-Construction Phase Services may commence during the construction phase and, if not otherwise modified by the mutual agreement of CLIENT and J-U-B, will terminate at the end of the correction period.

CONSTRUCTION PHASE ADDITIONAL SERVICES

If authorized by CLIENT and expressly agreed by J-U-B; or, if performed by J-U-B with the knowledge of the CLIENT after the signing of the Agreement for Professional Services, J-U-B shall furnish or obtain from others Additional Services of the types listed in this paragraph:

1. Services in connection with Work Change Directives and Change Orders to reflect changes requested by CLIENT if the resulting change in compensation for Construction Phase Services is not commensurate with the Services rendered; Services in making revisions to Drawings and Specifications occasioned by the acceptance of substitutions proposed by contractor and Services after the award of the contract; Services in evaluating and determining the acceptability of an unreasonable or excessive number of substitutions proposed by contractor; and Services resulting from significant delays, changes, or price increases occurring as a direct or indirect result of material equipment, or energy shortages.

2. Services involving out-of-town travel required of J-U-B other than visits to the Site or CLIENT's office.

3. Assistance in connection with bid protests, rebidding, or renegotiating the Construction Agreement.

4. Services in connection with any partial utilization of the Work by CLIENT prior to Substantial Completion.

5. Additional or extended Services during construction of the Work made necessary by (a) emergencies or acts of God endangering or delaying the Work, (b) the discovery of constituents of concern, (c) Work damaged by fire or other cause during construction, (d) a significant amount of defective Work, (e) acceleration of the progress schedule involving Services beyond normal working hours, and (f) default by contractor, including extensions of the construction period.

6. Evaluating an unreasonable number of claims submitted by contractor or others in connection with the Work.

7. Protracted or extensive assistance in refining and adjusting any equipment or system (such as initial startup, testing, adjusting, and balancing).

8. Services or consultations after completion of the construction phase, such as excessive inspections during any correction period and reporting observed discrepancies under guarantees called for in the Construction Agreement for the Work (except as agreed to under Construction Phase Services).

9. Preparing to serve or serving as a consultant or witness for CLIENT in any litigation, arbitration, or other legal or administrative proceeding involving the Project to which J-U-B has not been made a party.

10. Additional Services in connection with the Work, including Services which are to be furnished by CLIENT and Services not otherwise provided for in this Agreement.

RESIDENT PROJECT REPRESENTATIVE

If provided as part of Construction Phase Services, J-U-B shall furnish a Resident Project Representative ("RPR"), assistants, and other field staff to assist J-U-B in observing progress and quality of the Work. The RPR, assistants, and other field staff may provide full-time representation or may provide representation to a lesser degree.

Through such additional observations of the Work and field checks of materials and equipment by the RPR and assistants, J-U-B shall endeavor to provide further protection for CLIENT against defects and deficiencies in the Work. It is understood and agreed that J-U-B shall not, during the performance of Services, or as a result of observations of the Work in progress, supervise, direct, or have control over contractor(s)' Work; nor shall J-U-B have authority over or responsibility for the means, methods, techniques, sequences or procedures of construction selected by contractor(s), for safety precautions and programs incident to the Work of the contractor(s) or for any failure of contractor(s) to comply with laws, rules, regulations, ordinances, codes or orders applicable to contractor(s) furnishing and performing their Work or providing any health and safety precautions required by any regulatory agencies. Accordingly, J-U-B does not guarantee or warrant the performance of the construction contracts by contractor(s) nor assume responsibility of contractor(s)' failure to furnish and perform their Work in accordance with the Contract Documents.

The RPR's duties under this Agreement shall be strictly limited to the following:

1. *General.* RPR is J-U-B's agent at the Site, will act as directed by and under the supervision of J-U-B, and will confer with J-U-B regarding RPR's actions.

2. *Schedules.* Review the progress schedule, schedule of Shop Drawing and Sample submittals, and schedule of values prepared by contractor and consult with CLIENT concerning acceptability of such schedules.

3. *Conferences and Meetings.* When requested by CLIENT to do so, attend meetings with contractor, such as preconstruction conferences, progress meetings, job conferences, and other project-related meetings.

4. *Liaison.* Serve as J-U-B's liaison with CLIENT.

5. *Interpretation of Contract Documents.* Report to CLIENT when clarifications and interpretations of the Contract Documents are needed.

6. *Shop Drawings and Samples.* Receive and record date of receipt of reviewed Samples and Shop Drawings.

7. *Modifications.* Consider and evaluate contractor's suggestions for modifications to Drawings or Specifications and report, with RPR's recommendations, to CLIENT. Transmittal to contractor of written decisions as issued by J-U-B will be in writing.

8. *Review of Work and Rejection of Defective Work.*

   a) Conduct on-site observations of the Work to assist J-U-B in determining if the Work is, in general, proceeding in accordance with the Contract Documents.

   b) Report to CLIENT whenever RPR believes that any part of the Work in progress will not produce a completed Project that conforms generally to the Contract Documents or will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents; has been damaged; or does not meet the requirements of any inspection, test, or approval required to be made. Advise CLIENT of that part of the Work that RPR believes should be corrected, rejected, or uncovered for observation, or that requires special testing, inspection, or approval**.**

9. *Inspections, Tests, and System Startups.*

   a) Advise CLIENT in advance of scheduled major inspections, tests, and system start-ups for important phases of the Work.

   b) Verify that tests, equipment, and system start-ups and operating and maintenance training is conducted in the presence of appropriate personnel and that contractor maintain adequate records thereof.

   c) Observe, record, and report to CLIENT appropriate details relative to the test procedures and system start-ups.

   d) Accompany visiting inspectors representing public or other agencies having jurisdiction over the Work, record the results of these inspections, and report to CLIENT.

10. *Records.*

   a) Maintain at the Site orderly files for correspondence, reports of job conferences, reproductions of original Contract Documents including all Change Orders, Field Orders, Work Change Directives, Addenda, additional Drawings issued subsequent to the execution of the Contract, J-U-B's clarifications and interpretations of the Contract Documents, progress reports, Shop Drawing and Sample submittals, and other Project-related documents.

   b) Prepare a daily report or keep a diary or log book, recording contractor's and subcontractors' hours on the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; furnish copies of such records to CLIENT.

   c) Maintain accurate, up-to-date lists of the names, addresses, e-mail addresses, and telephone numbers of all contractors, subcontractors, and major suppliers of materials and equipment.

   d) Maintain records for use in preparing documentation of the Work.

   e) Upon completion of the Work with respect to the Project, furnish a complete set of all RPR Project documentation to CLIENT.

11. *Reports.*

   a) Furnish to CLIENT periodic reports as required of progress of the Work and of contractor's compliance with the progress schedule and schedule of Shop Drawing and Sample submittals.

   b) Present to CLIENT proposed Change Orders, Work Change Directives, and Field Orders.

   c) Furnish to CLIENT copies of all inspection, test, and system startup reports.

   d) Report immediately to CLIENT the occurrence of any Site accidents, emergencies, acts of God endangering the Work, property damaged by fire or other causes, and the discovery or presence of any constituents of concern.

12. *Payment Request:* Review Applications for Payment for compliance with the established procedure for their submission and forward with recommendations to CLIENT, noting particularly the relationship of the payment requested to the schedule of values, Work completed, and materials and equipment delivered at the Site, but not incorporated in the Work.

13. *Certificates, Operation and Maintenance Manuals.* During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals, and other data required by the Specifications to be assembled and furnished

by contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to CLIENT for review.

14. *Completion.*

    a) Before issuing a Certificate of Substantial Completion, submit to CLIENT a list of observed items requiring completion or correction.

    b) Observe whether contractor has arranged for inspections required by laws and regulations, including but not limited to those to be performed by public agencies having jurisdiction over the Project.

    c) Participate in a final inspection in the company of CLIENT and contractor and prepare a final list of items to be completed or corrected with respect to the Work.

    d) Observe whether all items on final list have been completed or corrected and make recommendations to CLIENT concerning acceptance and issuance of CLIENT's Final Notice of Acceptability of the Work.

The RPR shall not:

1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).

2. Exceed limitations of J-U-B's authority as set forth in the Agreement for Professional Services .

3. Undertake any of the responsibilities of contractor, subcontractors, suppliers, or contractor's superintendent.

4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences, or procedures of construction or of the Work, unless such advice or directions are specifically required by the Contract Documents.

5. Advise on, issue directions regarding, or assume control over safety practices, precautions, and programs in connection with the activities or operations of CLIENT or contractor.

6. Participate in specialized field or laboratory tests or inspections conducted by others, except as specifically authorized.

7. Accept Shop Drawing or Sample submittals from anyone other than J-U-B.

8.. Authorize CLIENT to occupy the Work in whole or in part.

CLIENT'S RESPONSIBILITIES

Except as otherwise provided herein or in the Agreement for Professional Services, CLIENT shall do the following in a timely manner so as not to delay the Services of J-U-B and shall bear all costs incident thereto:

1. Provide, as may be required for the Project, such legal services as CLIENT may require or J-U-B may reasonably request with regard to legal issues pertaining to the Project, including any that may be raised by contractor.

2. Attend the pre-bid conference, bid opening, pre-construction conferences, construction progress and other job-related meetings and Substantial Completion, final payment, and other inspections.

3. Give prompt written notice to J-U-B whenever CLIENT observes or otherwise becomes aware of any development that affects the scope or time of performance or furnishing of J-U-B's Services, or any defect or nonconformance in J-U-B's Services or in the Work of any contractor.

4. Render all final decisions related to: 1) changes or modifications to the terms of the construction contract, 2) acceptability of the Work, and 3) claims or Work stoppages.

5. Unless included in J-U-B Scope of Services, provide construction staking and materials testing services for the project.

The Client agrees to require all contractors of any tier to carry statutory Workers Compensation, Employers Liability Insurance and appropriate limits of Commercial General Liability Insurance (CGL). The Client further agrees to require all contractors to have their CGL policies endorsed to name the Client, the Consultant and its sub-consultants as Additional insureds, on a primary and noncontributory basis, and to provide Contractual Liability coverage sufficient to insure the hold harmless and indemnity obligations assumed by the contractors. The Client shall require all contractors to furnish to the Client and the Consultant certificates of insurance as evidence of the required insurance prior to commencing work and upon renewal of each policy during the entire period of construction. In addition, the Client shall require that all contractors will, to the fullest extent permitted by law, indemnify and hold harmless the Client, the Consultant and its sub consultants from and against any damages, liabilities or costs, including reasonable attorneys' fees and defense costs, arising out of or in any way connected with the Project, including all claims by employees of the contractors.

INDEMNIFICATION

In addition to any other limits of indemnification agreed to between the Parties, CLIENT agrees to indemnify and hold harmless J-U-B, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work. This is to include, but not to be limited to any such claim, cost, loss, or damage that is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property, including the loss of use resulting therefrom to the extent caused by any negligent act or omission of contractor, any subcontractor, any supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable, as well as any general, special or other economic damages resultant from Work stoppages or delays that are caused in whole or part by J-U-B's exercise of the rights and duties as agreed herein (Construction Phase Services).

CLIENT agrees that CLIENT will cause to be executed any such agreements or contracts with contractors, subcontractors or suppliers to effectuate the intent of this part before any Work is commenced on the Project; if CLIENT negligently fails to do so, CLIENT agrees to fully indemnify J-U-B from any liability resulting therefrom, to include, but not to be limited to, all costs relating to tendering a defense to any such claims made.

J·U·B ENGINEERS, INC.

J-U-B ENGINEERS, Inc.
AUTHORIZATION FOR ADDITIONAL SERVICES

Attachment 1 – Scope of Services, Basis of Fee, and Schedule

PROJECT NAME: South Tank and Water Distribution Loop
CLIENT: Town of Johnstown
J-U-B PROJECT NUMBER: 87-20-004
CLIENT PROJECT NUMBER: Click or tap here to enter text.
ATTACHMENT TO:

☐ **AGREEMENT DATED:** Click or tap to enter a date.**; or**

☒ **AUTHORIZATION FOR ADDITIONAL SERVICES #2; DATED: 11/1/2021**

The referenced Agreement for Professional Services executed between J-U-B ENGINEERS, Inc. (J-U-B) and the CLIENT is amended and supplemented to include the following provisions regarding the Scope of Services, Basis of Fee, and/or Schedule:

PART 1 - PROJECT UNDERSTANDING

J-U-B's understanding of this project's history and CLIENT's general intent and scope of the project are described as follows:

The Town of Johnstown would like independent testing assistance for the South Tank and Water Distribution Loop construction anticipated to start in the fall of 2021. Specific Construction support includes:

- Geotechnical Engineering support for construction of the water tank piers and foundation.
- Geotechnical Engineering support for construction of railroad, canal, road, and utility crossing tunnels and bores.
- Special inspection support of the water tank welds and coating.
- Special inspection support for rebar and concrete of the water tank foundation and shaft.
- On-Call inspection support for compaction of the tank site and waterline trench

PART 2 - SCOPE OF SERVICES BY J-U-B

J-U-B's Additional Services under this Agreement are limited to the following tasks. Any other items necessary to plan and implement the project, including but not limited to those specifically listed in PART 3, are the responsibility of CLIENT.

A. **Task 500: Special Inspection Services**

1. Subtask 001: Geotechnical Engineering Support for Water Tank Piers
    a. See attached Proposal from Lithos Engineering
2. Subtask 002: Geotechnical Engineering Support for Tunnels and Bores
    a. See attached Proposal from Lithos Engineering
3. Subtask 003: Special Inspection Support for Water Tank Welds and Coating
    a. See attached Proposal from KLM Engineering
    b. Assumptions: contractor is responsible for quality control of all welds and coating including radiographic testing of welds, paint thickness testing, conformance with manufacturer's recommendations regarding application conditions.
4. Subtask 004: Special Inspection Support for Rebar and Concrete.
    a. Provide quality assurance testing of concrete as needed.

b. Provide observation of rebar installation as needed
c. Assumptions: contractor is responsible for quality control of all concrete and rebar including testing, installation, and protection.

5. Subtask 005: On-Call inspection support for compaction of the tank site and waterline trench
   a. Provide quality assurance testing of compaction as needed.
   b. Assumptions: contractor is responsible for quality control of all concrete and rebar including testing, installation, and protection.

PART 3 - CLIENT-PROVIDED WORK AND ADDITIONAL SERVICES

A. **CLIENT-Provided Work -** CLIENT is responsible for completing, or authorizing others to complete, all tasks not specifically included above in PART 2 that may be required for the project including, but not limited to:
   1. N/A.

B. **Additional Services** - CLIENT reserves the right to add future tasks for subsequent phases or related work to the scope of services upon mutual agreement of scope, additional fees, and schedule. These future tasks, to be added by amendment at a later date as Additional Services, may include:
   1. Additional Testing Services

PART 4 - BASIS OF FEE AND SCHEDULE OF SERVICES

A. CLIENT shall pay J-U-B for the identified Services in PART 2 as follows:
   1. For Lump Sum fees:
      a. The portion of the Lump Sum amount billed for J-U-B's services will be based upon J-U-B's estimate of the percentage of the total services actually completed during the billing period.
   2. For Time and Materials fees:
      a. For all services performed on the project, Client shall pay J-U-B an amount equal to the cumulative hours charged to the Project by each class of J-U-B's personnel times J-U-B's standard billing rates.
      b. Client shall pay J-U-B for Reimbursable Expenses times a multiplier of 1.1
      c. Client shall pay J-U-B for J-U-B's Consultants' charges times a multiplier of 1.1.
   3. For Cost Plus Fixed Fees:
      a. Client shall pay J-U-B an amount equal to the cumulative hours charged to the Project by each class of J-U-B's personnel times their hourly salary rate times J-U-B's audited overhead multiplier for all services performed on the Project.
      b. Client shall pay J-U-B a lump sum fixed fee.
      c. Client shall pay J-U-B for Reimbursable Expenses times a multiplier of 1.1.
      d. Client shall pay J-U-B for J-U-B's Consultants' charges times a multiplier of 1.1.
   4. J-U-B may alter the distribution of compensation between individual tasks to be consistent with services actually rendered while not exceeding the total project amount.

B. Period of Service: If the period of service for the task identified above is extended beyond 12 months, the compensation amount for J-U-B's services may be appropriately adjusted to account for salary adjustments and extended duration of project management and administrative services.

C. CLIENT acknowledges that J-U-B will not be responsible for impacts to the schedule by actions of others over which J-U-B has no control.

D. The following table summarizes the increase in fees and anticipated schedule for the services identified in PART 2.

Task Number	Task Name	Fee Type	Additional Amount	Anticipated Schedule
500-001	Geotech-Water Tank Piers	Time and Materials (Estimated Amount Shown)	$34,500	Concurrent with Construction
500-002	Geotech-Waterline Bores/Tunnels	Time and Materials (Estimated Amount Shown)	$91,250	Concurrent with Construction
500-003	Water Tank Welds/Coatings	Time and Materials (Estimated Amount Shown)	$79,750	Concurrent with Construction
500-004	Special Inspection – Tank Concrete/Rebar	Time and Materials (Estimated Amount Shown)	$17,500	Concurrent with Construction
500-005	On-Call Compaction	Time and Materials (Estimated Amount Shown)	$11,500	Concurrent with Construction
		Total:	**$234,500**	

***NOTE on Coronavirus and Schedule**: J-U-B is committed to meeting your project schedule commitments as delineated above. As our response to the COVID-19 pandemic, J-U-B is engaging in safety procedures in help to protect clients, staff, their families, and the public. Our staff or offices may be subject to quarantine or other interruptions. Since COVID-19 impacts are beyond J-U-B's control, we are not responsible for the force majeure impacts to delivery timelines, or subsequent project delays and related claims, costs, or damages. Should circumstances related to the COVID-19 issue arise with J-U-B staff or in a J-U-B office that will impact our delivery schedule, we will notify you of the circumstances and mutually agree to a schedule adjustment.*

Exhibit(s):

- Lithos Proposal
- KLM Engineering Proposal
- Ground Engineering Proposal

For internal J-U-B use only:

PROJECT LOCATION (STATE): Colorado
TYPE OF WORK: City
R&D: No
GROUP: Water/Wastewater
PROJECT DESCRIPTION(S)**: Composite Tank, Water Pipeline**

- Water Supply/Treatment/Distribution (W03)
- None

LITHOS ENGINEERING
5205 S College Ave., Suite B
Fort Collins, CO 80525
970.373.3195
www.LithosEng.com

June 8th, 2021
Project No. 19074

J-U-B Engineers, Inc.
4745 Boardwalk Drive, Building D, Suite 200
Fort Collins, Colorado 80525

Attention: Mr. Steve James, Vice President
Mr. KC Young, EIT, Project Designer

Regarding: Proposal Addendum
Johnstown Water Tank Drilled Shaft Construction Observation
Johnstown, Colorado

Mr. James and Mr. Young,

Lithos Engineering (Lithos) is pleased to have the opportunity to provide this proposal addendum to J-U-B Engineers (J-U-B) for Water Tank Drilled Shaft Construction Observation as part of the Johnstown South Tank and WDS Loop project.

Project Understanding

The Town of Johnstown (Town) intends to construct a new 16-inch diameter waterline loop generally along Colorado Boulevard and County Road 17 in Weld County, Colorado. As part of the proposed waterline, a 1.5-million-gallon, elevated water tank founded on a drilled shaft foundation will also be constructed. The Town has selected CB&I to design and construct the water tank under a separate contract from the waterline. CB&I intends to go to construction in the summer of 2021. Lithos has provided geotechnical design for the water tank foundation and was contacted by J-U-B to provide a scope and fee for construction observation of the drilled shafts. Based on our understanding of CB&I's schedule and our experience with drilled shaft construction observation, we propose the scope of work provided in the following sections.

Proposed Scope of Services

Based on our understanding of the project, Lithos proposes the following scope of services:

Task – 1: Submittal Review and Information Requests

- Review submittals related to drilled shaft foundation design and construction.
- As needed, assist J-U-B in responding to Contractor requests for information.

Task – 2: Drilled Shaft Construction Observation

- Provide full-time construction observation during drilled shaft construction activities and two site visits during at grade foundation work to observe the connection between drilled shafts and the at grade foundation. Based on CB&I's schedule, we have assumed drilled shaft construction will be approximately 3 weeks. If drilled shaft construction takes longer than 3 weeks, additional effort may be required in excess of the presented scope and fee.

- Provide daily field reports (DFR's) to include drilled shaft construction logs during construction observation. DFR's will include a summary of all drilled shaft construction activities, site and geotechnical conditions encountered during drilled shaft construction, as-built drilled shaft materials, changes to construction plans, communications with CB&I, etc.
- Provide daily email updates to J-U-B and the Town summarizing construction activities and any issues that were noted.

Task 3 – Construction Meetings

Lithos will attend up to four meetings for the project during construction. We have assumed one of the meetings will be a pre-construction meeting and the other three meetings will be weekly drilled shaft construction update meetings. We have assumed meetings will be held onsite and have estimated one-hour meetings will be required for the project and have included time for travel and meeting preparation.

Task – 3: Closeout Memorandum

Lithos will provide a brief closeout memorandum summarizing drilled shaft construction. The memo will be submitted to J-U-B. At a minimum, the closeout memorandum will include:

- Daily field reports and drilled shaft construction logs
- Deviations from construction drawings and specifications and resolutions to those deviations
- Major drilled shaft construction changes from CB&I design drawings, if any

Fee Estimate

Based on our proposed Scope of Services outlined above, we estimate a total fee for this proposal addendum of $31,292. Lithos proposes to provide these services on a time and expense basis in accordance with the attached fee schedule and previously agreed upon terms and conditions for the project with J-U-B. Scope of work tasks other than the tasks listed herein can be provided on a time and expense basis in accordance with the attached fee schedule.

Closing

We appreciate the opportunity to submit a proposal and look forward to the opportunity to work with you on this project. For this project, Mr. Heyer will be your key contact and Project Manager. If you have any questions regarding the contents of this proposal, please contact the undersigned.

Sincerely,

Lithos Engineering

Lance Heyer, PE
Associate

Dylan Fawaz, PE
Staff Engineer

Detailed Fee Estimate

Project - Johnstown Water Tank Drilled Shaft Observation
Project Number - 19074
Date - 06/08/21

LABOR

No.	Phase	Senior Consultant	President	Vice President	Senior Professional II	Senior Professional I	Professional II	Professional I	Staff Professional III	Staff Professional II	Staff Professional I	Administrative	Hours per Task	Labor Fees per Task
	Rate/Hr	$ 200	$ 200	$ 185	$ 180	$ 160	$ 145	$ 130	$ 110	$ 100	$ 95	$ 65		
1	Submittal Document Review		2			8		8					18	$ 2,720
2	Drilled Shaft Construction Observation		4			20		83	75				182	$ 23,040
3	Meetings		4			12							16	$ 2,720
4	Closeout Memorandum		2			2		12					16	$ 2,280
	Fee Schedule (21G)												Total Hours	Total Labor
	Labor Fees per Position	$ -	$ 2,400	$ -	$ -	$ 6,720	$ -	$ 13,390	$ 8,250	$ -	$ -	$ -	232	$ 30,760

SUBCONSULTANTS and DIRECT COSTS

No.	Phase	Driller	Lab Testing	Traffic Control		Fees per Task	Mileage $0.70/mi	Per Diem	Lodging	Airline	Other	Fees per Task
1	Submittal Document Review					$ -						$ -
2	Drilled Shaft Construction Observation					$ -	600					$ 420
3	Meetings					$ -	160					$ 112
4	Closeout Memorandum					$ -						$ -
	Subtotal	$ -	$ -	$ -	$ -	$ -	$ 532	$ -	$ -	$ -	$ -	$ 532
	Markup 10%	$ -	$ -	$ -	$ -	$ -		$ -	$ -	$ -	$ -	$ -
	Total	$ -	$ -	$ -	$ -		$ 532	$ -	$ -	$ -	$ -	
					Total Subconsultants	$ -					Total Direct Costs	$ 532

SUMMARY

No.	Phase	Labor	Subconsultants	Direct Costs	Total
1	Submittal Document Review	$ 2,720			$ 2,720
2	Drilled Shaft Construction Observation	$ 23,040		$ 420	$ 23,460
3	Meetings	$,720		$ 112	$ 2,832
4	Closeout Memorandum	$ 2,280			$ 2,280
	Markup 10%		$ -	$ -	$ -
	Total	$ 30,760	$ -	$ 532	$ 31,292

LITHOS ENGINEERING

LITHOS ENGINEERING

FEE SCHEDULE
2021

1. Services will be billed on the time worked by staff personnel as follows unless noted otherwise in the proposal or contract. Overtime hours will be charged a straight time rates.

Senior Consultant	$200
President	$200
Vice President	$185
Senior Professional II	$180
Senior Professional I	$160
Professional II	$145
Professional I	$130
Staff Professional III	$110
Staff Professional II	$100
Staff Professional I	$95
Administrative	$65

1. Direct non-salary expenses will be billed at Lithos Engineering's cost plus a ten (10) percent markup for the following:
    a. Reproduction and printing costs for project-related documents
    b. Transportation and subsistence costs for travel including: rental cars, truck, boats, trains, and other public carriers.
    c. Express delivers such as UPS.

2. Mileage for use of personal or company vehicles will be billed at $0.70/mile.

3. Subcontractors retained by Lithos Engineering for project-related services will be billed at our cost plus ten (10) percent.

4. Payment: Invoices will be submitted about once a month unless otherwise noted in the proposal or contract for services performed. Payment is due upon receipt of the invoice. Interest of two (2) percent per month may be added to the outstanding balance on invoices older than 30 days. In the event that Lithos Engineering must engage collection services to receive payment, Client will reimburse Lithos Engineering for all reasonable collection, attorney's, and court fees.

5. Billing rates are subject to change at any time unless otherwise noted in the proposal or contract.

LITHOS ENGINEERING
5205 S College Ave., Suite B
Fort Collins, CO 80525
970.373.3195
www.LithosEng.com

September 14th, 2021
Project No. 19074

J-U-B Engineers, Inc.
4745 Boardwalk Drive, Building D, Suite 200
Fort Collins, Colorado 80525

Attention: Mr. Steve James, PE
Vice President

Mr. KC Young, EIT
Project Designer

Regarding: Proposal Addendum – Construction Phases Services
Johnstown Waterline Tunnel Construction
Johnstown, Colorado

Mr. James and Mr. Young,

Lithos Engineering (Lithos) is pleased to have the opportunity to provide this proposal addendum to J-U-B Engineers (J-U-B) for Tunnel Construction Observation as part of the Johnstown South Tank and WDS Loop project.

Project Understanding

The Town of Johnstown (Town) intends to construct a new 16-inch diameter waterline loop generally along Colorado Boulevard and County Road 17 in Weld County, Colorado. The Town has issued a proposal request for waterline construction. The project will include one horizontal directional drill of the Little Thompson River and six tunneled crossings of various ditches, railroads, and county roads along the waterline alignment. Based on conversations with J-U-B and our experience with similar projects, we are proposing the following scope of work for tunnel construction.

Proposed Scope of Services

Based on our understanding of the project, Lithos proposes the following scope of services:

Task – 1: Submittal Review and Information Requests

- Review submittals related to tunnel construction.
- As needed, assist J-U-B in responding to Contractor requests for information.

Task – 2: Tunnel and HDD Construction Observation

- Provide part-time construction observation tunnel construction.
    - We have assumed an average of half-time observation during daily tunnel construction.
    - We have assumed full-time observation of the HDD installation.
    - We have assumed tunnel construction will be an average of 8-hours per day and 5-days per week.
    - Based on our experience with similar projects, we have assumed each tunnel or HDD installation will take an average of 3 weeks to build. If the average tunnel construction duration takes longer than 3 weeks, additional effort may be required in excess of the presented scope and fee.

- Provide daily field reports (DFR's) during construction observation. DFR's will include a summary of tunnel related construction activities, site and geotechnical conditions encountered during tunnel construction, changes to construction plans, communications with the selected tunnel construction, etc.
- Provide daily email updates to J-U-B and the Town summarizing construction activities and any issues that were noted for days when the site is visited during construction.

Task 3 – Construction Meetings

Lithos will attend up to four meetings for the project during construction. We have assumed one of the meetings will be a pre-construction meeting and the other three meetings will be weekly tunnel and HDD construction update meetings. We have assumed meetings will be held onsite and have estimated one-hour meetings will be required for the project and have included time for travel and meeting preparation.

Task – 3: Closeout Memorandum

Lithos will provide a brief closeout memorandum summarizing tunnel and HDD construction. The memo will be submitted to J-U-B. At a minimum, the closeout memorandum will include:

- Daily field reports
- Deviations from construction drawings and specifications and resolutions to those deviations

Fee Estimate

Based on our proposed Scope of Services outlined above, we estimate a total fee for this proposal addendum of $82,952. Lithos proposes to provide these services on a time and expense basis in accordance with the attached fee schedule and previously agreed upon terms and conditions for the project with J-U-B. Scope of work tasks other than the tasks listed herein can be provided on a time and expense basis in accordance with the attached fee schedule.

Closing

We appreciate the opportunity to submit a proposal and look forward to the opportunity to work with you on this project. For this project, Mr. Heyer will be your key contact and Project Manager. If you have any questions regarding the contents of this proposal, please contact the undersigned.

Sincerely,
Lithos Engineering

Lance Heyer, PE
Associate

Robin Dornfest, PG
President

Detailed Fee Estimate

Project - Johnstown Waterline Tunnel Construction Observation
Project Number - 19074
Date - 09/14/21

LABOR

No.	Phase	Senior Consultant	President	Vice President	Senior Professional II	Senior Professional I	Professional II	Professional I	Staff Professional III	Staff Professional II	Staff Professional I	Administrative	Hours per Task	Labor Fees per Task
	Rate/Hr	$ 230	$ 215	$ 190	$ 190	$ 170	$ 155	$ 140	$ 125	$ 110	$ 95	$ 75		
1	Submittal Review		2			8			24				34	$ 4,790
2	Tunnel Construction Observation		8			40			480				528	$ 68,520
3	Meetings		4			12							16	$ 2,900
4	Closeout Memorandum		2			4			24				30	$ 4,110
5													0	$ -
6													0	$ -
7													0	$ -
8													0	$ -
9													0	$ -
10													0	$ -
	Fee Schedule (21T)												Total Hours	Total Labor
	Labor Fees per Position	$ -	$ 3,440	$ -	$ -	$ 10,880	$ -	$ -	$ 66,000	$ -	$ -	$ -	608	$ 80,320

SUBCONSULTANTS and DIRECT COSTS

No.	Phase	Driller	Lab Testing	Traffic Control		Fees per Task	Mileage $0.70/mi	Per Diem	Lodging	Airline	Other	Fees per Task
1	Submittal Review					$ -						$ -
2	Tunnel Construction Observation					$ -	3600					$ 2,520
3	Meetings					$ -	160					$ 112
4	Closeout Memorandum					$ -						$ -
5						$ -						$ -
6						$ -						$ -
7						$ -						$ -
8						$ -						$ -
9						$ -						$ -
10						$ -						$ -
	Subtotal	$ -	$ -	$ -	$ -	$ -	$ 2,632	$ -	$ -	$ -	$ -	$ 2,632
	Markup 12%	$ -	$ -	$ -	$ -	$ -		$ -	$ -	$ -	$ -	$ -
	Total	$ -	$ -	$ -	$ -		$ 2,632	$ -	$ -	$ -	$ -	
						Total Subconsultants						
						$ -						
								Total Direct Costs				$ 2,632

SUMMARY

No.	Phase	Labor	Subconsultants	Direct Costs	Total
1	Submittal Review	$ 4,790			$ 4,790
2	Tunnel Construction Observation	$ 68,520		$ 2,520	$ 71,040
3	Meetings	$ 2,900		$ 112	$ 3,012
4	Closeout Memorandum	$ 4,110			$ 4,110
5					
6					
7					
8					
9					
10					
	Markup 12%		$ -	$ -	$ -
	Total	$ 80,320	$ -	$ 2,632	$ 82,952

LITHOS ENGINEERING

LITHOS ENGINEERING

FEE SCHEDULE
2021

1. Services will be billed on the time worked by staff personnel as follows unless noted otherwise in the proposal or contract. Overtime hours will be charged a straight time rates.

Senior Consultant	$230
President	$215
Vice President	$190
Senior Professional II	$190
Senior Professional I	$170
Professional II	$155
Professional I	$140
Staff Professional III	$125
Staff Professional II	$110
Staff Professional I	$95
Administrative	$70

2. Direct non-salary expenses will be billed at Lithos Engineering's cost plus a twelve (12) percent markup for the following:
    a. Reproduction and printing costs for project-related documents
    b. Transportation and subsistence costs for travel including: rental cars, truck, boats, trains, and other public carriers.
    c. Express delivers such as UPS.

3. Mileage for use of personal or company vehicles will be billed at $0.70/mile.

4. Subcontractors retained by Lithos Engineering for project-related services will be billed at our cost plus 12 (twelve) percent.

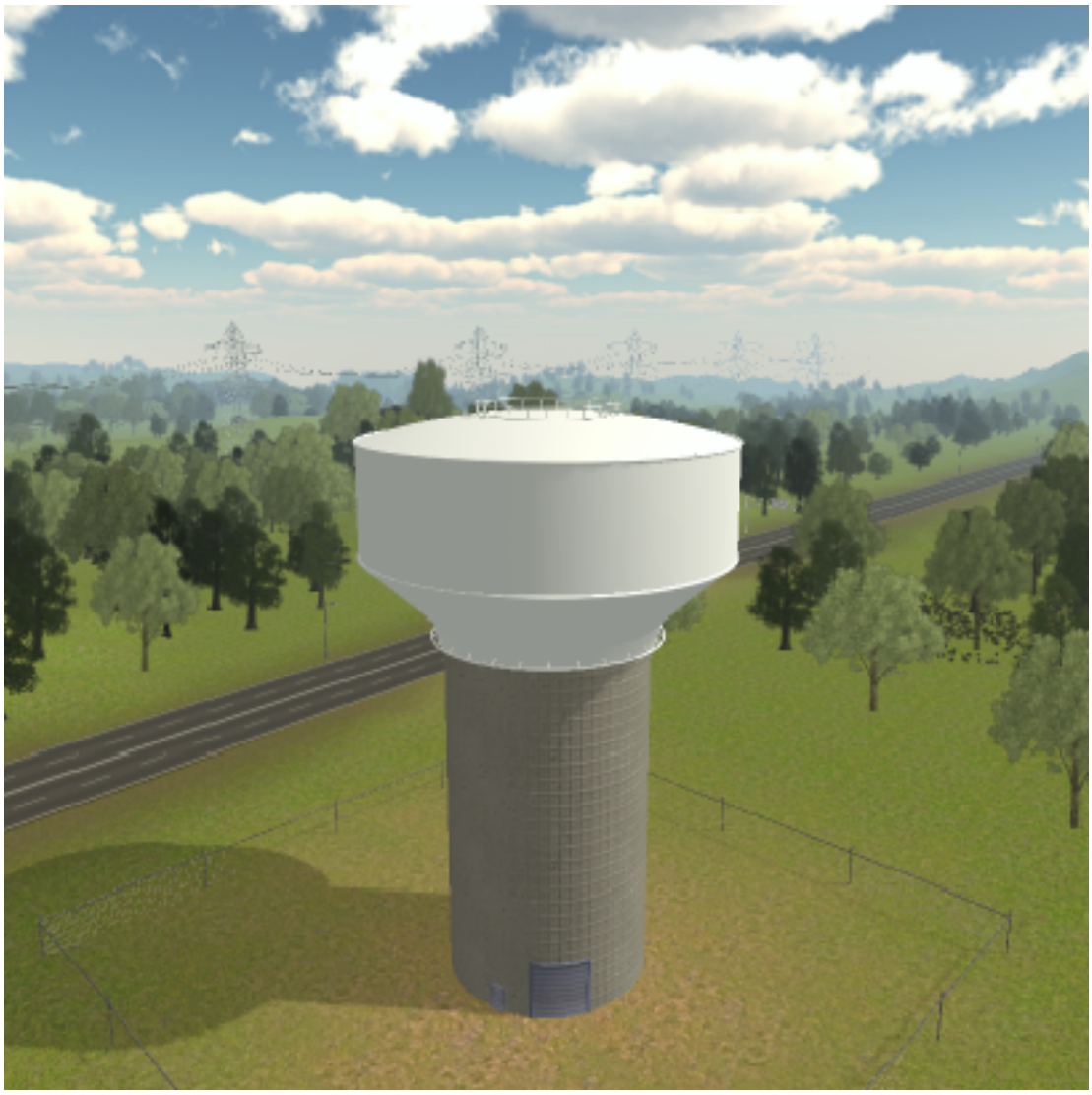
5. Payment: Invoices will be submitted about once a month unless otherwise noted in the proposal or contract for services performed. Payment is due upon receipt of the invoice. Interest of two (2) percent per month may be added to the outstanding balance on invoices older than 30 days. In the event that Lithos Engineering must engage collection services to receive payment, Client will reimburse Lithos Engineering for all reasonable collection, attorney's, and court fees.

6. Billing rates are subject to change at any time unless otherwise noted in the proposal or contract.

September 7, 2021

Item #15.

Proposal for New Tank Construction Services



Johnstown, Colorado 1.5MG Composite Elevated Tank

KLM Engineering, Inc. | 1976 Wooddale Drive, Suite 4 | Woodbury, MN 55125
Toll Free: 888-959-5111 | Phone: 651-773-5111 | Fax: 651-773-5222 | www.klmengineering.com

KLM ENGINEERING, INC.
1976 Wooddale Drive, Suite 4 | Woodbury, MN 55125
Phone (651) 773-5111 | Fax (651) 773-5222

September 7, 2021 **SENT EMAIL ONLY**

Mr. Steve James
Project Engineer
J-U-B Engineers, Inc.
4745 Boardwalk Drive
Building D, Suite 200
Fort Collins, Colorado 80525

Dear Mr. James,

Thank you for the opportunity to submit this proposal to provide submittal review and inspection services during the construction of the new 1.5MG CET, for the City of Johnstown, Colorado.

KLM has a staff with the most credentials associated with AWS welding and NACE coating inspections of water storage tanks in the five-state area. When it comes to quality inspections on water towers, KLM sets the standard that other companies try to duplicate. Our dedication to quality inspections can be seen nationally as our projects are represented each year in Tnemec's Tank of the Year calendar contest.

Asbury, Iowa

West Fargo, North Dakota

Farmington, Minnesota

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Our inspections are performed by a professional staff with current and proper credentials. Our inspectors, who work directly under our Structural Engineer and Project Supervisor, are certified as both NACE and AWS inspectors. Each employee takes ownership of their project. Our professional staff has a combined 150 years of experience and have successfully completed over 500 rehabilitations and new construction of water tanks of various sizes. The KLM staff is fluent in the current codes and standards for new and reconditioned water tower projects.

KLM inspectors accept or reject the workmanship of the day. The main reason owners hire a professional consultant is to protect the owner's investment. The average tank without a professional inspection usually needs to be repaired after 15 years, compared to KLM projects which are lasting 22 or more years.

No firm receives respect from tank contractors and subcontractors like KLM. Our role is to provide quality assurance and enforce the specification. KLM is very thorough with our documentation of what and how the work is being performed each day. KLM's reputation of quality is second to none. We stand behind every project we work on.

KLM would like to assist you with our expertise on quality control, which will make this a successful project for many years to come. By selecting KLM, you can be assured that the project will be completed to your satisfaction.

We look forward to working with you.

Sincerely,

KLM ENGINEERING, INC.
Tom Quammen
West Central Regional Manager
Located in: Prairie Village, KS
Cell: 913-291-9076
Fax: 651-773-5222
Email: tquammen@klmengineering.com

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Proposal for New Tank Construction 1.5MG CET for the City of Johnstown, Colorado

Project Understanding

KLM Engineering will provide construction services for J-U-B Engineers, Inc., Ft. Collins, Colorado on the City of Johnstown's new 1.5 MG CET, 2021/22. These services include: field weld inspection and field NACE coatings inspection. KLM will provide project management during these services, submittal, and shop drawing review plus, deliverables through a ShareFile® on-line program for all stakeholders.

Potential Benefits to the City of Johnstown

- Engineering review will be performed to check that the contractor has submitted complete construction drawings, certifications of welder qualifications and steel and coatings material. KLM will also look at the drawings for future potential problems with OSHA and future maintenance issues.
- Part-time inspection by KLM Certified Welding Inspectors during the construction phase and full-time inspection by a NACE Coating Inspector during the field coating phase, assures that the work performed by the contractor is in conformance with the specifications and will realize its intended operating life. KLM inspectors monitor workmanship during all phases of work and approve the contractor's work. Utilizing this process, maintenance costs will be reduced by the decrease in the number of reconditioning cycles over the life of the tank.
- Today's protective coating systems are designed to last 20 plus years with only minor maintenance. Tight project specifications and full-time inspection gives the coating systems the opportunity to realize their intended service life.

Engineering Submittal Review

The construction submittals from the tank fabricator will be reviewed for conformance to the specifications of OSHA, AWWA D100-11 and general construction practices. The coatings material submitted will be reviewed for conformance to the specifications of AWWA. KLM will respond in writing regarding the acceptance of the submittals.

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Shop Sub-Assembly Welding and Coating Inspection

This component can be revisited at Owner or Engineers request.

Intermittent Construction Inspection

The primary purpose of this type of inspection is to ensure that any fabrication defects that could adversely affect the life of the coating system such as, fit ups, erection scab marks, weld spatter, or rough welds are removed prior to coating application. The KLM inspector will also monitor construction for conformance to the AWWA D100-11 Standard, AWS D1.1, and the project specifications.

To monitor tank construction effectively, an inspector will be required to make one trip per week to the project site. The inspector assigned to this project will be an AWS Certified Welding Inspector. All our inspectors have extensive practical experience and knowledge of water storage tank erection per AWWA D100-11 Standards. The cost includes travel, labor, subsistence, and the attendance of a qualified and assigned inspector at the preconstruction conference at the project location. This proposal does not include inspection of the foundation or the concrete pedestal.

At a minimum, the field construction inspections will include the following:

- A preconstruction meeting with the client and contractor to clearly define the role of the inspector and to discuss the intent of the specifications.
- Monitoring and approval of the tower construction for conformance to the specifications.
- Recording the contractor's progress for adherence to the construction schedule.
- Submittal of daily and weekly inspection reports.
- Monitor punch list items and subsequent corrective action by the contractor.
- Final inspection, substantial completion, and project acceptance.

Intermittent Construction Inspection Fees

KLM's inspection fees are based on estimated project duration of six (6) weeks for the erection phase during a 2021-22 construction schedule. With an estimated schedule of six (6) weeks for the erection and an anticipated one trip to the project site per week. KLM construction inspection services will be charged on a time and material basis at a rate of $130.00 per hour for an AWS Certified welding inspector. KLM estimates the costs for the construction inspection to be $12,735.00. KLM will attend one preconstruction meeting at the site with the Foreman. Additional meetings or inspection requested by the owner will be charged according to our fee schedule.

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Construction Services

Construction Administration

The project manager and project supervisor work together on managing the project. The project supervisor does the review of the submittals from the contractor. The supervisor communicates with the inspector daily. The supervisor will enforce the project specifications, as necessary. The supervisor is the main contact between the contractor representative and the Owner. The manager does the final review of the submittals and pay requests.

Construction management will include:

- Send notices for, attend, and facilitate preconstruction meeting.
- Periodically perform on-site review of project's work status and report to the city.
- Coordinate progress meetings, as necessary.
- Review meeting minutes.
- Scheduling of inspections.
- Prepare monthly payment request forms.
- Processing change orders.
- Project close out administration.
- Establishes warranty date.
- Review of inspector's daily documentation on a weekly basis.
- Review of the contractor's submittals:
    1. Drawing reviews
    2. Welder Certifications
    3. Welder Qualifications
    4. Welding Procedures
    5. Coating Materials Submittal
    6. Spent material collection and disposal
    7. Lettering and logo

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Field Coating Inspection

The frequency of inspection is more critical during field coating than during construction. We propose to provide a KLM inspector on-site full-time. This will ensure that the contractor's equipment and procedures are proper and efficient, that all surface preparation, both interior and exterior, has been inspected and approved prior to coating, and that all coating is mixed and applied properly. The inspector assigned to this project will be a NACE Coating Inspector. All our inspectors have extensive practical experience and knowledge of water storage tank painting. They are experienced sandblasters, painters, climbers, riggers, and coating inspectors, which enables them to perform inspections alongside the contractor to ensure conformance to the project specifications.

At a minimum, the field inspections will include the following:

- A preconstruction meeting with the client and contractor to clearly define the role of the engineer and inspector and to discuss the intent of the specifications.
- Inspection of the abrasive blasting media and equipment for conformance to the specifications and to prevent contamination of surfaces during surface preparation with moisture and oil and/or other contaminants.
- Monitoring the surface preparation and painting for conformance to the specifications and environmental regulations.
- Monitoring the contractor's mixing and application of the coatings for conformance to the specifications and the coating manufacturer's recommendations.
- Approving surface preparation samples.
- Recording the contractor's progress for adherence to the construction schedule.
- Submittal of daily and weekly inspection reports.
- Prepare punch lists.
- Monitor punch list items and subsequent corrective action by the contractor.
- Final inspection, substantial completion, and project acceptance.

Field Coating Inspection Fees

KLM's inspection fees are based on an estimated project duration of eight (8) weeks, a 2021/22 construction and coating schedule, and KLM's current Fee Schedule and Terms and Conditions, and an anticipated 48 hours of field inspection per week. Our field inspection services will be charged on a Time and Material basis per our current Fee Schedule and Terms and Conditions. KLM anticipates a 48-hour work week, with a budget estimate of $55,242.00. KLM is proposing to use a NACE Coatings inspector at an hourly rate of $125.00 per hour. The duration of the field inspection depends upon the construction schedule and on the time it takes the contractor to perform the field coating work.

This cost estimate includes the attendance of a qualified and assigned inspector at the preconstruction meeting. Additional meetings or inspection requested by the owner will be charged according to our fee schedule.

KLM's fee is based on a project duration of eight (8) weeks. If the contractor goes over the estimated eight (8) weeks, KLM will charge a weekly fee of $6,905.00.

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Field Coating Inspection Fees Continued

This estimate is for eight (8) hours per day for six (6) days a week. Additional hours, per day or Sunday work, are not included in these hours. This would be an extra charge above the existing contract.

Warranty Inspection (optional)

KLM proposes to perform a warranty inspection on the referenced tank prior to the expiration of the performance bonded one (1) or two (2) year warranty for an estimated fee of $3,000.00. This fee includes two (2) copies of the warranty inspection report for the Owner and Engineer and one (1) copy of the report for the contractor. This fee does not include any necessary inspection(s) should warranty repair work be required.
This phase of the project will be billed upon submittal of the warranty inspection reports.

Fee Summary

1. Submittal Reviews	Fixed	$1,500.00
2. Erection Inspection (6 weeks)	Estimated	$12,735.00
3. Inspection Services (8 weeks)	Estimated	$55,242.00
	Total	**$69,477.00**
Warranty Inspection (2024, optional)	Estimated	$3,000.00

This cost estimate includes travel, labor, subsistence, and the attendance of a qualified and assigned inspector at the preconstruction meeting at the project location.

Terms and Conditions

KLM has attached our standard Terms and Conditions. The attached Terms and Conditions are part of this agreement between the J-U-B Engineers, Inc. and KLM Engineering, Inc. unless otherwise agreed to, in writing, by both parties.

Additional Information

Additional information can be found at KLM's website at: www.klmengineering.com

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Agreement

This proposal is valid for sixty (60) days from September 7, 2021. If J-U-B Engineers, Inc. finds this proposal acceptable, please sign and return. We can begin work immediately once an agreement has been executed.

If you have any questions regarding this proposal, please call me at 913-291-9076 or fax this proposal back at 651-773-5222.

This agreement, between JUB Engineers, Inc., Ft. Collins, Colorado and KLM Engineering, Inc. of Woodbury, Minnesota is accepted by:

_____, Steve James, PE
(Name) (Title) J-U-B Engineers, Inc.
Fort Collins, Colorado

_____
(Date)

Thomas K. Quammen Western Central Regional Manager, KLM Engineering, Inc.
(Name) (Title) Woodbury, Minnesota

September 7, 2021
(Date)

We look forward to working with you on this project.

Sincerely,

KLM ENGINEERING, INC.
Tom Quammen
West Central Regional Manager
Located in: Prairie Village, Kansas
Cell: 913-291-9076
Fax: 651-773-5222
Email: tquammen@klmengineering.com

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Proposal

Project Team

KLM Engineering Inc.
WATER TOWER SPECIALISTS

KLM Project Team Chart

When you hire KLM, you hire a team of *the* water tower specialists.

- Shawn Mulhern, President / CEO, NACE III & AWS
  - Olivia Harrington, HR Director
    - Laurie Sylte, Finance Manager
      - Senia Swanson, Marketing Coordinator
        - Nancy Hofer, Administrative Assistant
  - Dewey Prinzing, VP of Business Dev., NACE I
    - Michael Novitzki, Dir. of Business Dev.
      - Loren Mollet, Marketing Associate
        - Tom Quammen, Central Regional Manager, NACE I
          - James Creed, Great Lakes Regional Manager, NACE III
            - Kim Dietmeier, Administrative Assistant
  - Scott Kriese, Project Field Supv., NACE III
    - Edward Doyle, On-site Resident Inspector, NACE III & MPI
      - Chris Block, On-site Resident Inspector, NACE III
        - Ethan Hutar, On-Site Resident Inspector, NACE II
          - Thomas Yardley, On-Site Resident Inspector, NACE II
            - Perry Seidel, On-site Resident Inspector
              - Curtis Parison, On-site Resident Inspector
                - Lucas Tomperi, On-site Resident Inspector, NACE II
                - Kevin Miller, On-Site Resident Inspector, NACE II
                - Theresa Anderson, Project Field Assistant
  - Ben Feldman, P.E., Civil Engineer
    - Thomas Brown, P.E., Structural Engineer
      - Joey Clasemann, E.I.T., Civil/Structural Engineer
        - Emma Jackson, Administrative Assistant
- Rodney Ellis, VP / COO, NACE III & AWS
  - Devin Severson, Lead Evaluation Inspector, NACE I
    - Tim Lindsay, Lead Evaluation Inspector
      - Matt Finley, Evaluation Inspector
  - Tadd Oachs, Telecom Manager
    - Michelle Nelson, Operations Coordinator

All inspectors work directly under a Professional Engineer and a NACE Certified Project Supervisc

Project Team

To provide a combination of client satisfaction and industry expertise, KLM has assembled a staff specific to the needs of our clients. The Project Team, listed in the organizational chart on the previous page, work year-round, with current projects booked into 2021 and beyond. In addition, KLM's staff have an extensive knowledge base, specializing in water storage systems, whether it be inspection, recondition, coatings, new tanks, or telecommunications. To ensure each project is held to the highest of standards, our team consists of Professional Engineers and certified inspectors by the National Association of Corrosion Engineers (NACE) and American Welding Society (AWS). Further details on the expertise of KLM's project team can be found in the preceding pages.

SHAWN MULHERN - PRESIDENT/ CEO/ PRINCIPAL OWNER

Mr. Mulhern has been inspecting, testing, and evaluating water towers for over 36 years. He has been involved in the inspection of over 300 elevated water towers, ground storage reservoirs, and industrial tanks of sizes ranging from 50,000 gallons to 120 million gallons. Shawn is a NACE Level III Certified Coatings Inspector and an American Welding Society (AWS) Associate Welding Inspector. He is also an avid volunteer and educational presenter nation-wide.

EXPERIENCE & EDUCATION

- American Water Works Association
- American Welding Society
- National Association for Corrosion Engineers
- Society for Protective Coatings
- Water Industry Professionals
- 2018 AWWA Benjamin G. Mason Award of Excellence

- AEC Engineering, Inc. | Coating Systems Supervisor
- Neumann Company Contractors, Inc. | Journeyman Painter
- NACE Successful Coating & Lining of Concrete
- Supervisory Leadership | Wilson Learning
- 3M Safety Training Program
- Tnemec Protective Services Seminar
- Industrial Technology | UW-Stout
- NACE III Inspector | No. 1293
- AWS- Welding Inspector No. 89040022
- OSHA Lead Abatement
- NDE Level II TU, PT, MT and vacuum box

RODNEY ELLIS - VICE PRESIDENT/ COO/ PRINCIPAL OWNER

Mr. Ellis has extensive experience working with a wide range of municipalities, military, and industrial facilities. He has worked on hundreds of water storage reservoirs, lead abatement projects, industrial tank reconditioning projects, water treatment plants, and bridges over the past 29 years. Rodney is a NACE Level III Certified Coatings Inspector, and an AWS Certified Welding Inspector. Rodney offers significant benefits to clients because of his work with all types of contractors on many types of complex projects.

EXPERIENCE & EDUCATION

- American Welding Society
- National Association for Corrosion Engineers
- Society for Protective Coatings
- Water Industry Professionals

- AEC Engineering, Inc. | NACE Coatings Inspector
- Neumann Company Contractors, Inc. | Industrial Sandblaster & Painter
- Mount Scenario College
- NACE III Inspector | No. 1686
- AWS- Welding Inspector No. 95040714
- API 653 | Above ground storage tank inspection
- NDE Level II TU, PT, MT, and vacuum box
- OSHA 10

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BEN FELDMAN, P.E. - CIVIL ENGINEER

Mr. Feldman has worked in both the private and public sector starting out his career as an engineer and project manager with the Midwest leader in design of state-of-the-art municipal facilities and other complexes. Ben's project experience ranges from treatment plants, pump stations to distribution studies and maintenance plans. He is also an active member of Minnesota section AWWA as Board Security-Treasurer for over four years. Ben provides KLM's clients with creative, cost-effective solutions, exceptional service, and a level of quality as if it were his own.

EXPERIENCE & EDUCATION

- American Water Works Association
- MN-AWWA Young Professionals

- St. Paul Regional Water Services | Civil III
- SRF Consulting Group, Inc. | Field Engineer
- Anderson-Johnson Associates, Inc. | Project Manager
- University of Minnesota | Bachelor of Science- Civil Engineering
- Minnesota License | No. 49598
- Colorado License | No. 0057334
- OSHA 10

SCOTT KRIESE - PROJECT FIELD SUPERVISOR

Mr. Kriese is a NACE Level III Certified Coatings Inspector with fourteen years of experience on projects including surface preparation, coating application, and inspection services during reconditioning, new tank construction, and structural repairs on water storage tanks and towers. Scott is currently a Project Field Supervisor overseeing NACE inspectors who are performing daily inspections of new and reconditioned water storage tanks. Scott has provided resident inspection services or oversite on hundreds of potable water and fire protection tanks during his tenure at KLM.

EXPERIENCE & EDUCATION

- National Association for Corrosion Engineers
- Society for Protective Coatings

- KLM Engineering, Inc. | Project Field Supervisor
- NACE III Inspector | No. 11236
- OSHA 10

DEWEY PRINZING - VP OF BUSINESS DEVELOPMENT

Mr. Prinzing has been in the construction, inspection, testing, and evaluation industry for more than twenty years. He has been involved in the inspection of elevated water towers, ground storage reservoirs, and industrial tanks of sizes ranging from 50,000 gallons to 3 million. Dewey transitioned his knowledge as a NACE Inspector to his current role in sales. In sales, Dewey successfully assists clients with their various needs whether it be on rehabilitation, new tank construction, structural repairs, evaluations, tank cleaning, or mixing.

EXPERIENCE & EDUCATION

- National Association for Corrosion Engineers
- Society for Protective Coatings
- Water Industry Professionals

- Southwest Manufacturing, Inc. | Regional Sales Manager
- Otte Log Homes | Carpenter
- NACE I Inspector | No. 44811

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MICHAEL NOVITZKI - DIRECTOR OF BUSINESS DEVELOPMENT

Mr. Novitzki has been in the sales and marketing industry for over four years. Since joining KLM, Michael has been able to utilize his skills in sales to excel in the water storage industry with a desire to assist communities of all different sizes. Michael has been involved in projects ranging from 50,000 to over one million gallons. Michael's goal to make sure every community has a positive experience regarding their water storage tank is evident in his superior workmanship and making sure the needs of his clients are taken care. He is also a valued member of the AWWA Young Professionals and a MAC Committee liaison.

EXPERIENCE & EDUCATION

- American Water Works Association
- MN-AWWA Young Professionals
- Water Industry Professionals

- First Financial | Director of Sales & Business Development
- New York Life | Financial Advisor
- Target Corporate | Merchandise Analyst
- Holy Cross College | Bachelor of Arts & Science-Finance, Marketing & Spanish
- Series 6
- MRWA Operator Training

JAMES CREED - GREAT LAKES REGIONAL SALES MANAGER

Mr. Creed is the Regional Manager located in our New Lennox, Illinois office. He has a combined 30+ years in the coatings industry primarily in General Industrial, OEM, Marine, Protective Coatings and Linings. The knowledge and understanding of protective coatings, surface preparation, and local, federal, and industry regulations Jim brings to KLM, confirms clients are receiving the most reliable guidance for their assets. Jim is also a NACE Level III Certified Coatings Inspector and SSPC Certified Concrete Coating Inspector.

EXPERIENCE & EDUCATION

- American Water Works Association
- Society for Protective Coatings
- Water Industry Professionals
- National Association for Corrosion Engineers

- The Society for Protective Coatings | Midwest Chapter Board Member
- Carboline Company | Senior Engineer Sales Manager
- Sherwin Williams | Senior Protective Coating Specialist
- NACE III Certified | No. 8970
- SSPC Certified Concrete Coating Inspector | No. 29820
- Engineering Sales Presidents Award | 2017, 2018

TOM QUAMMEN - WEST CENTRAL REGIONAL MANAGER

Mr. Quammen is the Regional Manager located in our Prairie Village, Kansas office. He has a combined 30+ years of water tank/ tower experience, first as a NACE and UT inspector for a small structural engineering firm in Minneapolis, then as a Principal Tnemec Company Representative, first in MN, then CO, ID, MT, NM, NV, UT, and WY. In addition, he has knowledge of structural engineering, extensive protective coatings experience, and ACI/ ICRI training. His skills and experience are an asset to KLM and our clients.

EXPERIENCE & EDUCATION

- American Water Works Association
- KS/MO/CO Rural Water Association
- Water Industry Professionals
- Tnemec Corporate Award (Retired)

- Tnemec Company | Principal, Agency Owner
- AEC Engineers & Designers | Technician
- Twin City Testing | Technician
- Anoka Technical College
- Mankato State University
- CSI CDT

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- ICRI Slab Certified

TADD OACHS - TELECOM MANAGER

Mr. Oachs has worked in the telecommunications industry for over 9 years. His knowledge and skill in the field, along with his experience with some of the newest technologies, are an asset to KLM projects. Tadd's extraordinary focus and strategic way of thinking, with his uncanny ability to facilitate clear communication between different teams and departments, is invaluable to completing projects on-time and within budget.

EXPERIENCE & EDUCATION

- St. Cloud University
- Siren Telephone Company | Telecommunications Technician
- CenturyLink | Broadband Technician
- Bear Communications | Installation and Drop Bury Supervisor

LAURIE SYLTE - FINANCE MANAGER

Mrs. Sylte has been in the finance management industry for over 20 years. Of these years, 15 are specific to water storage systems. Laurie excels in project support and budget management for tanks ranging from 25,000 to over a million gallons. She works directly with clients to ensure accounting and budget timelines are met and executed to city and/or council requirements.

EXPERIENCE & EDUCATION

- Somerset Telephone | Finance
- St. Croix Telephone | Finance
- Wisconsin Indian Technical College

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DEVIN SEVERSON- LEAD EVALUATIONS INSPECTOR

Mr. Severson is one of KLM's Lead Inspectors, supervising our evaluations team. Devin has been involved with the evaluation of over 500 elevated water towers and ground storage reservoirs in 15 states. Devin received his training directly under a NACE III Coating Inspector and currently works under the supervision of a NACE III/AWS Certified Inspector and Structural Engineer. Devin has extensive knowledge with rigging, coating analysis, and destructive/non-destructive testing. Devin's experience with multiple towers has given him the understanding of how to approach information gathering in many different settings. He is also a NACE Level 1 Certified Coatings Inspector.

CERTIFICATIONS

- NACE I Inspector | No. 78234
- OSHA 10

EXPERIENCE

- Joliet, IL | 1 Million-Gallon Rock Run Tower
- Los Alamos County, NM | 20 water reservoirs
- Lino Lakes, MN | 1 Million-Gallon Towers No. 1 & 2

TIM LINDSAY- LEAD EVALUATIONS INSPECTOR

Mr. Lindsay is part of KLM's evaluation team, performing inspections and maintenance services as well as product installations. Tim comes with a strong background in equipment operations and mechanics, which comes in handy with our robotic inspection tools. Tim brings to KLM a strong work ethic, something that is seen by our clients with his onsite professionalism and communication style

TRAINING

- KLM Inspector Training

EXPERIENCE

- University of Notre Dame, IN | 500,000-Gallon Tower No. 1
- MCF Stillwater, MN | 330,000-Gallon Tower
- Kansas City, MO | 5 water reservoirs

CHRIS BLOCK- ON-SITE RESIDENT INSPECTOR

Mr. Block has been in the industrial coatings industry for more than 25 years with projects worldwide including the United States and Japan. His project portfolio includes surge tanks, pipelines and million-plus gallon water towers, all adding to his vast knowledge in coatings and tank structures. Chris also holds numerous professional certifications as well as being a NACE Level 3 Coatings Inspector.

TRAINING

- KLM Inspector Training
- NACE III Inspector | No. 69860
- OSHA 30
- CAS Full Intern
- SSPC 14
- C3 & C5 Lead

EXPERIENCE

- Japan | jet fuel tanks
- MN Power | penstocks and fuel tanks
- Eveleth, MN | 750,000-Gall Water Tower

CURTIS PARISON ON-SITE RESIDENT INSPECTOR

As a Coatings Inspector, Mr. Parison has over seven years' experience working on projects nationwide. Curtis is an expert climber/rigger with an extensive background in projects ranging from new construction to reconditioning of elevated water towers and ground storage reservoirs. He is a strong advocate for quality workmanship from the start of the project to completion with a thorough attention to detail.

TRAINING

- KLM Inspector Training
- NACE I Inspector (IT)

EXPERIENCE

- Great Falls, MT | 500,000-Gallon Gore Hill Tower
- Moorhead, MN | 500,000-Gallon Woodlawn Tower
- New England, ND | 200,000-Gallon Tower

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PERRY SEIDEL- ON-SITE RESIDENT INSPECTOR

Mr. Seidel has been working in the water storage tank industry for over 16 years, with advanced experience in construction supervision and project management. He has been involved with projects across the United States, with an average of 125 each year. His experience ranges from new construction to rehabilitation of tanks from small to large. His dedication to quality control, safety, and superior project inspection makes him a valued member of the KLM team.

TRAINING

- KLM Inspector Training
- Aerial & Scissor Lift
- Scaffolding Safety Qualification Training
- SAIS Suspended Scaffold Competent Person
- Telehandler Operation Certification
- First Aid/ CPR/ AED
- OSHA 30

EXPERIENCE

- Brooklyn Park, MN | 1,000,000-Gallon Legged Tower
- St. Louis Park, MN | 1,500,000-Gallon Water Reservoir
- New Hope, MN | 500,000-Gallon Legged Tower

EDWARD DOYLE- ON-SITE RESIDENT INSPECTOR

Mr. Doyle is a NACE III Certified Coatings Inspector and a Certified MPI Architectural Coating Technologist. He has been a key inspector for projects ranging from asset management, adhesion testing, and NACE inspections. He utilizes his strong level of expertise to provide superior workmanship.

TRAINING

- NACE III Inspector | No. 26066
- MPI Architectural Coating Technologist | No. 0794
- Construction Safety Certified

EXPERIENCE

- Erie, CO | Water Treatment Plant
- Erie, CO | 4,000,000-Gallon Water Reservoir

SCOTT FLATT- ON-SITE RESIDENT INSPECTOR

Mr. Flatt is a NACE Level III Coatings Inspector with experience in the water storage tanks for the past 12years. He has been involved on coating and sandblasting projects on tanks of diverse capacities and holds multiple professional certifications. Scott is also a commercial diver and former member of the National Guard.

TRAINING

- KLM Inspector Training
- NACE III Inspector | No.11236
- ASME

EXPERIENCE

- Elgin, IL | 1 Million-Gallon Alft Lane Tower
- Elgin, IL | 2 Million-Gallon Shales Parkway Tower
- Joliet, IL | 12D Tower

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References And Project Profiles

REFERENCES

The following is a summary list of projects from the past 5 years. A more complete list of references can be provided upon request.

New Tank Construction

- 1,500,000 Gallon Composite
Owner: City of St. Cloud, MN
Client: Apex Engineering
Contact: Lisa Vollbrecht, 320-255-7225
* 2017 Tnemec Tank of the Year 1st Runner-Up
- Northwest & East Towers
1 Million Gallon Composites
Owner: City of Watford City, ND
Client: AE2S
Contact: Donovan Voeller, PE, 701-746-8087
- 200,000 Gallon Single Pedestal
Owner: City of Wahpeton, IA
Client: ISG
Contact: Kelly Evans, PE, 515-243-9143
- Tower No. 1
50,000 Gallon Hydrocone
Owner: City of Kelliher, MN
Client: WSN
Contact: Curtis Meyer, PE, 218-766-7205
- 200,000 Gallon Elevated Water Tower
Owner: City of Warren, MN
Client: WSN
Contact: Steve Emery, 218-773-5626
- 750,000 Gallon Single Pedestal Spheroid
Owner: City of Jamestown, ND
Client: Interstate Engineering
Contact: Travis Dillman, 701-252-0234
- Tower No. 1
50,000 Gallon Hydrocone
Owner: City of Lismore, MN
Client: WSN
Contact: Larry Van Hout, PE, 320-335-5014
- Tower No. 6
1.5 Million Gallon Composite
Owner: City of West Fargo, ND
Client: Moore Engineering, Inc.
Contact: Jim Sepp, PE, 701-282-4692
- Reservoir 6
300,000 Gallon Tower
Owner: Northern Prairie Rural Water, ND
Client: Interstate Engineering, Inc.
Contact: Darrell Hournbuckle, PE, 701-320-2462
- Tower No. 1
50,000 Gallon Hydrocone
Owner: City of Pennock, MN
Client: WSN
Contact: Larry Van Hout, PE, 320-762-8149
- East & West Towers
1 Million Gallon & 500,000 Gallon Single Pedestals
Owner: City of Williston, ND
Client: AE2S
Contact: Donovan Voeller, PE, 701-746-8087
- East Tower
1,250,000 Gallon Hydropillar
Owner: City of Baxter, MN
Client: WSN
Contact: Aric Welch, 218-316-3645
- Tower No. 2
200,000 Gallon Composite
Owner/ Client: Village of Somerset, WI
Contact: Bob Gunther, 715-760-0884
- North Park Tower
250,000 Gallon Single Ped. Spheroid
Owner: New Ulm Public Utilities
Client: Short Elliot Hendrickson
Contact: Miles Jensen, 651-490-2020
- 250,000 Gallon Elevated Water Tower
Owner: Williams Rural Water District
Client: AE2S
Contact: Donovan Voeller, PE, 701-746-8087
- 250,000 Gallon Single Ped Spheroid
Owner: City of Park River, ND
Client: AE2S
Contact: Donovan Voeller, PE, 701-746-8087
- New Tower
500,000 Gallon Elevated Water Tower
Owner: City of Great Falls, MT
Client: AE2S
Contact: Alan Wendt, PE, 406-257-8990
- New Tower
500,000 Gallon Composite
Owner: City of Ray, North Dakota
Client: Interstate Engineering
Contact: Dean Peterson, PE, 701-320-4295
- Tower No. 2
75,000 Gallon Hydrocone
Owner: City of Herman, MN
Client: WSN
Contact: Larry Brunkow, 320-677-2200
- Tower No. 1
400,000 Gallon Single Pedestal
Owner: City of Surrey, ND
Client: SE2S
Contact: 701-746-8087

PROJECT PROFILES

KLM has an unparalleled record of consistently delivering successful projects like yours. KLM has planned, designed, and refurbished water towers for the past twenty years. The longevity of our projects is what we are most proud of. What owners most appreciate is the return in investment KLM brings to each project. The following pages list projects KLM has completed, similar to the proposed tank.

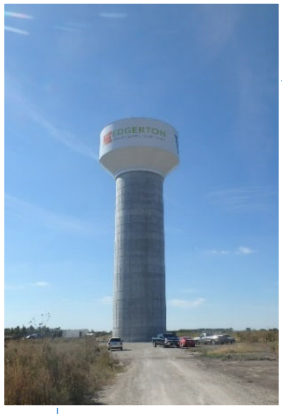
City of St. Cloud, MN

New Construction of: 1,500,000 Gallon Composite

Dates of Service: 2017 New Construction

Conditions & Services: The City of St. Cloud, Minnesota was in need of a new water tower for potable water storage and flow equalization along the I-94 and 33rd street south corridors adjacent to County Road 75. Hydraulic studies were conducted, which indicated a new 1.5 million-gallon water tower was the best solution. KLM performed shop inspection, surface preparation, and primer application at the manufacturer's facility. KLM also performed onsite welding, surface preparation and coating inspections while the tower was erected and painted at the location of the tower.

* 2017 Tnemec Tank of the Year First Runner-Up

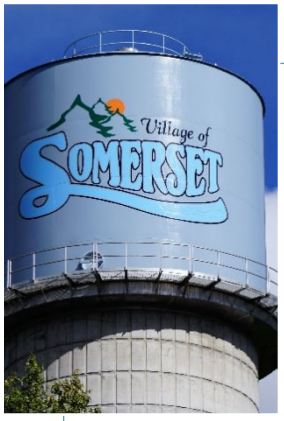


Water District No. 7- Edgerton, KS

New Construction of: 1,000,000 Gallon Composite

Dates of Service: 2015 New Construction

Conditions & Services: KLM was called into this project during the construction phase for our expertise in water towers. Duirng construction, the Owner noticed wrinkles/dents in the shell plates. KLM performed sweep board testing of shell plates and verified deflections exceeded building codes. The erection contractor replaced all of the shell plates post haste. KLM was employeed to stay on board during the plate replacement and through the coating phase. Even with the steel replacement, the project was completed on time.



Village of Somerset, WI Tower No. 2

New Construction of: 200,000 Gallon Composite Spheroid

Dates of Service: 2011 Evaluation, 2018 New Construction

Conditions & Services: The Village of Somerset inherited a unique situation. In 2004 a bolted/glass lined tank was erected on a concrete column to provide water to the Village. Due to corrosion beyond repair, the Village elected to replace the bolted manufactured tank with a new welded steel reservoir. KLM's structual engineering department was able to design a welded steel tank of comparable size to replace the bolted tank. The new tank was constructed on the ground adjacent to the exsiting tank, painted, and lifted onto the concrete column after the bolted tank was removed. The actual swop of the tanks were performed in less than one day, minimizing any water shortage for hte community. The project was a tremendous success, with all parties envolved working together for the best interest of the Village.

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City of Ray, ND New Composite

New Construction of: 500,000 Gallon Hydropillar

Dates of Service: 2017 New Construction

Conditions & Services: KLM was contracted to perform weld and coating inspection services for the City of Ray, North Dakota's new water tower. With a challenging location of the tower being constructed in a residential area, a containment system was required to control paint and dust emmissions during the blasting and coating process. The overall project was completed on time with all expectations met.

City of Wahpeton, IA New Tower

New Construction: 200,000 Gallon Single Pedestal

Dates of Service: 2017 New Construction

Conditions & Services: With the City of Wahpeton, Iowa growing expedentially they needed to increase their water storage capacity. KLM worked jointly with I&S Group out of Des Moines, Iowa, to contruct a new water tower. KLM provided certified welding and coating inspections during the project to ensure work was performed per the specification. The tower was constructed adjacent to, and replaced the old water tower during the course of one season. With the contractor's home base in South Dakota, I&S Group being from Des Moines and KLM arising from Minnesota, multiple facets were involved to complete this successful project.

KLM Support Documents

KLM ENGINEERING, INC.
1976 Wooddale Drive, Suite 4 | Woodbury, MN 55125
Phone (651) 773-5111 | Fax (651) 773-5222

KLM 2021 Fee Schedule

Principal Associate	$160.00 per hour
Structural Engineering	$220.00 per hour
Professional Engineering	$195.00 per hour
Engineer in Training	$125.00 per hour
Project Manager/Supervisor	$140.00 per hour
Field Inspectors – CWI/NACE	$130.00 per hour
Field Inspectors – NACE I & II	$125.00 per hour
Clerical	$85.00 per hour

* Per Client needs, customized pricing is provided based on the total project requirements and time frame.

Reimbursable Expenses

The following expenses are reimbursable to KLM Engineering Inc.:

1. Travel time billed at the labor rates listed above or as contracted.
2. Vehicle mileage billed at $0.85 per mile. KLM onsite vehicle/trailer will be charged at $35.00 per day.
3. Daily Per Diem billed at $180.00 per calendar day or as contracted.
4. Projected related expenses such as onsite rental equipment and sub-contractor or sub-consultants billed at actual cost plus 5%.
5. Production supplies, duplicating, and delivery expenses will be billed at the actual costs incurred, no mark-up.
6. Cell Phone charges will be billed at $20.00 per week.

**Rates may vary due to location*

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KLM ENGINEERING, INC.
TERMS AND CONDITIONS

1. BASIC SERVICES. The scope of KLM's work is described in the attached proposal or contract agreement and may not be expanded or reduced except by mutual agreement in writing.

2. ADDITIONAL SERVICES. Additional work or services shall not be performed without a duly executed change order or purchase order outlining the scope of additional work on services.

3. OWNER'S RESPONSIBILITIES. OWNER shall fully disclose to KLM its knowledge of the condition of the structure and its past and present contents and shall provide KLM with full information regarding the requirements for the project; shall designate an individual to act on OWNER'S behalf regarding the project. If necessary, shall clean and make the structure safe for entry; shall furnish the service of other consultants (including engineers, insurance consultants, accountants, attorneys, etc.) when those services are reasonable required or are reasonably requested by KLM; shall test for pollution and hazardous materials when required by law or requested by KLM; and shall provide all necessary permits and other authorization.

4. SAFETY. KLM shall only be responsible for safety of KLM personnel at the work site. The Owner or other persons shall be responsible for the safety of all other persons at the site. Owner shall inform KLM of any known or suspected hazardous materials or unsafe conditions at the work site. If, during the course of the work, such materials, or conditions are discovered, KLM reserves the right to take measures to protect KLM personnel and equipment or to immediately terminate services. Owner agrees to be responsible for payment of such additional protection costs. Upon such discovery, KLM agrees to immediately notify the Owner in writing, of the hazardous materials or unsafe conditions.

5. HAZARDOUS MATERIALS. Unless agreed in the scope of work KLM has no responsibility for the discovery, presence, handling, removal or disposal of or exposure of persons to hazardous materials at the project site. To the full extent permitted by the law, OWNER shall defend and indemnify KLM and its employees from all claims, including costs and attorney fees, arising out of the presence of hazardous materials on the job site.

6. SITE ACCESS AND RESTORATION. Owner will furnish KLM safe and legal site access. It is understood by Owner that in the normal course of work, some damage to the site or materials may occur. KLM will take reasonable precautions to minimize such damage. Restoration of the site is the responsibility of the Owner, unless agreed to in the scope of work.

7. STANDARD OF CARE. KLM will perform services consistent with the level of care and skill normally performed by other firms in the profession at the time of this service and in the geographic area, and under similar budgetary constraints. No other warranty is implied or intended.

8. SCHEDULING. Prior to scheduling the OWNER shall furnish a written purchase order or request for the services required and shall give as much notice as possible in advance of the time when the services are desired. Our ability to respond to such an order will depend upon the amount of advance notice provided. If an inspection is canceled or delayed after KLM personnel and/or equipment are in transit to the work site, then the OWNER shall be billed, according to the TERMS AND CONDITIONS, for costs incurred by KLM.

9. INSURANCE. KLM will maintain worker's compensation insurance and comprehensive general liability insurance and will provide OWNER with a certificate of insurance upon owner's request.

10. PAYMENT, INTEREST AND BREACH. KLM will submit itemized monthly or other periodic invoices for work previously performed. Invoices are due upon receipt. OWNER will inform KLM of invoice questions or disagreements within 15 days of invoice date, unless so informed, invoices are deemed correct. OWNER shall make payment within 30 days after receiving each statement, and overdue payments will bear interest at 1.5 percent per month if OWNER is a business entity and at the legal rate of interest of the state in which the project is located if OWNER is a consumer. If any invoice remains unpaid for 60 days, such non-payment shall be a material breach of this agreement. As a result of such material breach, KLM may, at its sole option, suspend all duties to the Owner or other persons, without liability. Owner will pay all KLM collection expenses and attorney fees relating to past due fees, which the Owner owes under this agreement.

11. MUTUAL INDEMNIFICATION. Except as to matters actually covered by insurance purchased by KLM. KLM agrees to hold harmless and indemnify OWNER from and against liability arising out of KLM's negligent performance of the work, subject to any limitations, other indemnification's or other provisions OWNER and KLM have agreed to in writing. Except as to matters actually covered by insurance purchased by OWNER, OWNER agrees to hold harmless and indemnify KLM from and against liability arising out of OWNER'S negligent conduct, subject to any limitations, other indemnification's or other provisions OWNER and KLM have agreed to.

12. LIMITATION OF LIABILITY. OWNER agrees to limit KLM's liability to OWNER arising from professional acts, errors or omissions, such that the total aggregate liability of KLM does not exceed KLM's project fees except as to matters actually covered by insurance purchased by KLM.

13. DELAYS. If KLM work delays are caused by Owner, work of others, strikes, natural causes, weather, or other items beyond KLM's control, a reasonable time extension for performance of work shall be granted, and KLM shall receive an equitable fee adjustment.

14. TERMINATION. After 7 days written notice, either party may elect to terminate work for justifiable reasons. In this event, the OWNER shall pay for all work performed, including demobilization and reporting costs to complete the file project and reports to OWNER.

15. SEVERABILITY. Any provisions of this agreement later held to violate a law or regulation shall be deemed void, and all remaining provisions shall continue in force. However, OWNER and KLM will in good faith attempt to replace an invalid or unenforceable provision with one that is valid and enforceable, and which comes as close as possible to expressing the intent of the original provision.

16. KLM'S DOCUMENTS. All reports, specifications, drawings and other documents furnished by KLM are part of KLM's services to OWNER for use only for the project, and KLM retains all ownership of said documents regardless of whether the project is completed. OWNER may retain copies for reference in connection with the use and occupancy of the project; but KLM does not represent that the documents are suitable for reuse on extension of the project or on other projects. OWNER and others shall not use the documents on other projects or extensions of this project except by KLM's written agreement. OWNER will defend and indemnify KLM from all claims or losses arising out of the unauthorized use of the documents.

17. ARBITRATION. Any controversy or claim for money damages arising out of or relating to the making or performance or interpretation of this AGREEMENT, or the breach of this AGREEMENT, shall be settled by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association. The arbitration panel shall consist of three arbitrators, at least one of who is a structural engineer; and the panel may award only money damages and shall not award equitable relief. Judgment upon the arbitration award may be entered in any court having jurisdiction of the parties. The enforceability of these arbitration provision and arbitration awards will be governed by the Federal Arbitration Act.

18. ARBITRATION FEES. The prevailing party to any dispute arising out of this AGREEMENT shall be entitled to recover its reasonable fees and costs from the other party.

19. JOB SITE IMAGES, PHOTOGRAPHY AND VIDEO. During the term of this contract and thereafter, KLM has permission to take still photographs or video of the site for training, documentation, education or promotional purposes. A signed agreement constitutes the Owner's written permission to use the photographic image or video in the manner described herein. The only identifiable information to be used by KLM will be the Owner's name as displayed on the image. Acceptance of these terms and conditions is considered a legal release by the Owner allowing KLM to use of photographic images as described herein.

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GROUND ENGINEERING

October 19, 2021

Subject: Proposal for Quality Assurance Materials Testing Services, Johnstown Tank and Pipeline Project

Proposal No. 2110-2010

Ms. Ellen Hilbig
Town of Johnstown
450 South Parish Avenue, PO Box 609
Johnstown, CO 80534

Dear Ms. Hilbig,

Ground Engineering Consultants, Inc. (GROUND) appreciates the opportunity to prepare a proposal to perform quality assurance materials testing services for the Johnstown Tank and Pipeline project. It is our understanding that our scope of services will include materials testing services, specifically soils compaction testing, concrete testing, reinforcing observations, and the associated laboratory testing services. Please note that the services will only be provided as scheduled by the Owner, Owner's Representative, Contractor, or applicable Subcontractors. Additional services beyond those below can be provided. Please contact this office for a fee estimate for additional services that may be needed.

Proposed Unit Rates/Fees – our services will be completed at the rates outlined in the attached fee schedule. For budgetary purposes, we have provided a total fee estimate below based on an assumed scope of services to be scheduled:

Estimated Time

Soils Technician	**$48.00**	per hour	116	Hours	$5,568.00
Concrete Technician	**$48.00**	per hour	137	Hours	$6,576.00
Reinforcing Steel Technician	**$55.00**	per hour	56	Hours	$3,080.00
PM Management/Meetings/Review	**$105.00**	per hour	24	Hours	$2,520.00

Laboratory Testing and Unit Billing

Soil				
Proctor Compaction	15	Tests @	**$110.00**	$1,650.00
Gradation	15	Tests @	**$60.00**	$900.00
Atterberg Limit	15	Tests @	**$65.00**	$975.00
Concrete				
Concrete Compression Test, Cylinders (each)	250	Tests @	**$14.00**	$3,500.00
Total Proposed Estimate				**$24,769.00**

This estimate has been compiled based on information provided to GROUND Engineering Consultants, Inc. as of the date of proposal. General Conditions and Limitations of Liability have been submitted herew ith, and are incorporated herein by reference. This estimate is not inclusive of any retests, nor of any changes to scope or schedule of w ork.

Noted Proposal Assumptions/Exclusions/Conditions

1. This proposal includes concrete testing of drilled piers, over a duration of 2 weeks (10 total days). Continuous inspection during drilled pier installations is excluded (assumed to be completed by others). If requested, GROUND can provide pier observations under an added scope of services.

Service Agreement/Proposal Conditions

The scope addressed by this proposal does not include geotechnical engineering services, other than any specifically identified herein. Should geotechnical engineering services be requested, including but not necessarily limited to soil bearing pressure evaluation, remedial earthwork/soil stabilization recommendations, groundwater evaluation, and assessment of soil suitability for specific uses, the Client/Owner/Contractor must realize additional time, exploration, evaluation/analysis, and costs likely will be incurred for such services. Such services would be provided under a separate scope and fee. Performing materials testing and observation services does not place the Consultant in the role of Geotechnical Engineer for the project, and the Consultant cannot assume that role unless specifically contracted to do so.

You will be invoiced for the amount of services actually performed, so actual total cost may be more or less than the amount estimated above. The terms under which our services will be performed are outlined in the General Conditions that contain a limitation of GROUND's liability. This proposed estimate shall be valid for a period of 120 calendar days from the date of submittal. GROUND reserves the right to review and revise the proposed quantities and unit rates thereafter. The referenced “Fee Schedule” and “General Conditions” are included and are part of this proposal. We propose that our fees for any additional services be based on our hourly and unit costs in accordance with the “Fee Schedule”. Also note that GROUND reserves the right to withhold data and reports until we have received a signed proposal. If this proposal meets with your approval, please sign one copy and return it to this office.

Thank you for considering us for the materials testing and special inspection services on this project.

Sincerely,
GROUND ENGINEERING CONSULTANTS, INC.

Levi Klingsmith

Agreed to this _____ day of _____2021

Town of Johnstown, by: _____

Print:_____

Item #15.

GROUND ENGINEERING

FEE SCHEDULE - CONSTRUCTION SERVICES

MATERIAL TESTING AND SPECIAL INSPECTION

(Time is round trip from office to project site and return)

• Concrete and Asphalt Testing (hourly)	$48.00
• Soil Testing (hourly)	$48.00
• Rebar, Masonry, Post Tension, Piers (hourly)	$55.00
• Floor Flatness (hourly)	$75.00
• Wastewater Pipe Inspection (hourly)	$75.00
• Coring and Concrete Humidity/Moisture (hourly)	$75.00
• Certified Welding Inspector (CWI) (hourly)	$80.00
• Certified Building Inspector (hourly)	$80.00
• Certified Fire Stop Inspector (hourly)	$95.00

MANAGEMENT AND ENGINEERING

• Project Management-Review/Supervision (hourly)	$105.00
• Senior Project Engineer/Geologist (hourly)	$175.00
• Project Engineer/Geologist (hourly)	$140.00
• Staff Engineer/Geologist (hourly)	$105.00
• Open Hole (hourly)	$95.00
• Principal Engineer, Senior Project Manager	Quote
• Overtime (Over 8hrs/day, weekends, after 6pm)	rate + $15.00
• Trip Charge (covers vehicle and equipment)	$0.00
• Interest charged after 30 days from invoice date	1.5%

MISCELLANEOUS

(These units are on a project by project basis and will only apply as detailed in the proposal)

• Construction Management, Civil Inspection	Quote
• Quality Management	Quote
• Out-of-town living expenses, commercial travel costs, equipment rental, etc.	Quote
• Mobile Laboratory	Quote
• Outside Laboratory Services	Quote
• Vibration Monitoring/Geotechnical Instrumentation Services, Thermal Conductivity and Resistivity	Quote
• Pile Dynamic Analysis, Ground Penetrating Radar, Cross Hole Sonic Logging, Sonic Echo, Falling Weight Deflectometer	Quote

LABORATORY TESTING

Soil and Aggregate

Proctor Compaction	$110.00
Atterberg Limit	$65.00
Gradation	$60.00
No. 200 Wash	$35.00
Gradation and Hydrometer	$135.00
Specific Gravity of Fine Aggregate	$65.00
Natural Density and Moisture Content	$15.00
"R"-Value	$350.00
Soil Cement Proctor	$150.00
Unconfined Comp. Str.-Soil Stab. (per set)	$250.00
pH Test	$50.00
Water Soluble Sulfates Test	$50.00
Triaxial Permeability	$375.00
Alkali Silica Reactivity (to 28 days)	$450.00
Denver Swell	$75.00
Direct Shear	$500.00
Sand Equivalent	$95.00
Relative Density	$200.00
Clay Lumps and Friable Particles	$45.00
Flat or Elongated Particles	$60.00
Sulfate Soundness	$300.00
Fractured Faces Test	$60.00
Los Angeles Abrasion Test	$150.00
Uncompacted Voids Test	$95.00
Specific Gravity of Coarse Aggregate	$95.00
Soil Stabilization Mixture Analysis	$3,500.00

Concrete

Concrete Compression Test, Cylinders (each)	$14.00
Concrete Comp. St. Cylinders (high strength concrete)	$75.00
Compressive Strength-CLSM Cylinders	$20.00
Concrete Flexural Test, Beams	$55.00
Maturity Data Logger (each)	$95.00
Moisture Coupons (each)	$95.00
Relative Humidity Sensors (ASTM F2170) (each)	$95.00
Shotcrete Comp. Str. (per panel)	$225.00
Maturity Meter Strength Correlation	$3,000.00
Concrete Mix Trial Blend	$4,000.00

Asphalt

AC Content and Extracted Gradation	$160.00
Sp.G.(SSD), Stability, Flow (Marshall) (per test)	$350.00
Specific Gravity (SSD) and Voids (Gyratory) (per test)	$250.00
Theoretical Maximum Specific Gravity	$100.00
Modified Lottman (TSR)	$325.00
Ignition Oven Calibration	$225.00
Specific Gravity (SSD) and Voids (per Core)	$40.00
Coring-Asphalt (Dia. (*in.*) X Depth (*in.*) X No. cores)	$1.50
Stability (Gyratory)	$105.00
Asphalt Moisture Content	$15.00
Micro Deval	$175.00

Masonry

Mortar Compressive Strength	$20.00
Masonry Prism Comp. Strength	$95.00
Grout Compressive Strength	$30.00
Compressive Strength CMU/Brick Coupon	$50.00

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GENERAL CONDITIONS

INTENT OF SERVICES: The services and any subsequent analysis and reporting performed by the Consultant under this agreement are intended to assist the Client. It must be understood that the Consultant's tests, observations, or inspection results do not mean that Consultant is approving any aspect of the design, or the work performed or materials used by the Contractor or any Subcontractors. Client acknowledges that Consultant is not responsible for the contractor's or subcontractor's compliance with regulating agencies, safety, materials, means, methods, techniques, sequences, procedures of construction, nor for contractor's failure to follow recommendations or good construction practices, and that the services provided by the Consultant shall not relieve the contractor of its obligation to perform the Work in accordance with the project plans and specifications, as well as use materials that are in accordance with the plans and specifications.

The observation and testing services outlined herein, or lack thereof, do not relieve the contractor, subcontractors or any other applicable trades of their responsibilities to perform their portion of this project in conformance to the project plans, specifications, and other applicable documents.

Any exploration, testing, specific observations, inspection and/or analysis associated with the services will be performed by Consultant solely to fulfill the purpose of this Service Agreement and Consultant is not responsible for interpretation by others of the information developed. Client recognizes that conditions on the project site may vary from those encountered during testing and that information generated by Consultant is based solely on the information available to the Consultant at the time and location of such testing. Furthermore, the Client acknowledges that actual testing, observation, or inspection performed is likely on a very small percentage of the overall project and that as such, may not fully reflect the work performed or materials used by Project Contractors or Subcontractors.

The proposed scope of services provided herein does not include engineering review of the project documents in regard to the geotechnical aspects of the project such as foundations, slabs, pavements, drains, walls, etc; nor does the proposed scope of work consist of construction management services relating to acceptance of materials, material types, or placement methodology. It is not the responsibility of the Consultant to accept or reject material placement or material types, nor to alter, amend, or revise project specifications. If required, these services can be provided under a separate scope of work.

RIGHT-OF-ENTRY: Unless otherwise agreed, Client will furnish right-of-entry for Consultant to take the scheduled tests or observations. Consultant will take reasonable precautions to reduce damage to property. However, cost of restoration or damage that may result from field operations are not included in the fee unless otherwise stated, and Consultant cannot be held responsible. Any construction debris or waste generated as a result of the required testing is the responsibility of the Client and their respective Contractor or Subcontractors.

SCHEDULING OF SERVICES: ALL observation and testing requests must be scheduled at least 24 hours in advance of each required observation or test. Verbal test results can be provided to the Contractor/Subcontractor and/or any other entities or representatives as designated by the Client as tests are completed, and formal, typed reports can be forwarded once they have been processed and reviewed. Unless specifically scheduled through our main office for a specific test/observation, date, and time, testing or observations may not occur.

The required amount of work for materials testing depends on the Client's, Contractor's, Subcontractor's, or other Entity's scheduling of our services, as well as their production schedule. Having no control over these factors, our proposed scope of work is in general accordance to the attached Fee Schedule.

The proposed scope of work is for periodic testing and observation. It is therefore important that the Client, Contractor, or Subcontractors schedule our field technicians such that: (1) Sufficient tests are conducted to comply with project specifications; and, (2) That such testing occurs at locations that are randomly distributed throughout the materials being tested. The quantity of tests provided for the various elements in the attached sheets are estimates; actual amounts of individual tests and locations are highly dependent on the Contractor's schedule and the scheduling of our field personnel (technicians, CWI, utility inspectors or building inspectors) by the Client, Contractor and/or Subcontractors.

INVOICES: Consultant will submit progress invoices to client monthly and a final bill upon completion of the services. Invoices will show charges for different personnel and expense classifications. Each invoice is due on presentation and is past-due thirty (30) days from invoice date. Rates quoted in this proposal reflect a 3% cash/check discount. Pricing will be adjusted to remove this discount in the event client prefers to pay by credit card. Client agrees to pay a finance charge of one and one-half percent (1.5%) per month, or the maximum rate allowed by law, on past-due accounts. Should Consultant bring suit to recover past due payment for services rendered to Client, Consultant shall be entitled to recover all costs of collection, including reasonable attorneys' fees.

REPORTS: Reports, plans and other work products prepared by Consultant remain the property of Consultant until all fees for Consultant's services have been paid. Client agrees that all reports and other documents furnished to the Client and his agents not paid for will be returned upon demand, and will not be used for licensing, permits, design and/or construction. Any Contractor or Subcontractor other than the Client who uses any test data or other information provided by Consultant in support of this scope of work must indemnify the Consultant from and against any and all claims resulting from such use.

FINAL LETTERS: Many governing agencies require that the Consultant provide some form of final letter at the completion of a project. Such letters are usually required to state that the project was constructed in compliance or general compliance to certain specifications, plans, or codes. As professional consulting engineers, it is not possible or reasonable to state with certainty that all work completed by others completely complied with any specification, plan, or code, and any interpretation as such is incorrect. The Consultant can only make such statements based on the best of their knowledge, their experience, as well as on the specific periodic testing and/or observations that were performed and for the time they were performed. Any use of the word "inspection" shall be assumed to mean "observation" in any document provided by our office that is in any way connected with this project. Such letters do not constitute any form of warranty, guarantee, or certification, expressed or implied, regardless of the wording used.

It must also be understood that such testing and observation only occur when properly scheduled by the owner, owner's representatives, contractor, or subcontractors, and therefore, it is their responsibility to schedule accordingly and in a manner consistent with the project specifications and the scope of work provided herein.

USE OF ELECTRONIC OR OTHER SUPPLIED DATA: Electronic documents, site plans, or other information provided to Consultant for the subject project may be used in compiling geotechnical, environmental, or construction-related reports for the subject project. It is the responsibility of the Owner or Supplier of such documents to ensure that our use does not violate any copyright or confidentiality that may be pertinent to the supplied information.

LIMITATION OF LIABILITY: Consultant agrees in connection with services performed under this Agreement that such services are performed with the care and skill ordinarily exercised by members of the profession practicing under similar conditions at the same time and in the same or a similar locality and scope. No warranty, expressed or implied, is made or intended by rendition of consulting services or by furnishing oral or written reports of the findings made. Liability of Consultant or Subconsultant(s) for damages due to or arising from professional negligence, breach of contract, or any cause of action, shall be limited to the Consultant's fee for this project.

Any exploration, testing, specific observations and analysis associated with the services will be performed by Consultant solely to fulfill the purpose of this Service Agreement and Consultant is not responsible for interpretation by others of the information developed. The services we have been retained to provide consist of periodic material testing and/or observations to assist the client, owner, construction manager and design team members with evaluating compliance with project specifications.

STANDARD OF CARE: In providing its services, Consultant shall perform in a manner consistent with that degree of care and skill ordinarily exercised by members of Consultant's profession practicing under the same or similar circumstances.

CORPORATE PROTECTION: It must be agreed to by all parties affiliated with this agreement that the services provided by the Consultant that are in any way connected to this project shall not connect Consultant's employees, owners, directors, or officers to any personal exposure for risks associated with any portion of this project. Therefore, and not withstanding anything to the contrary that may be contained herein or in any other document related to this project, the Client, future owners, future users, and/or any other trade or professional, agrees that as the sole and exclusive remedy for any claim, demand, or suit shall be directed and/or asserted against the Consultant, a Colorado Corporation, and not against any of GROUND's employees, owners, officers, or directors.

Town of Johnstown - South Tank and WDS Loop

Engineer's Budget Update 10-23-21

Item No.	Payment Item No.	ITEM DESCRIPTION	EST. QUAN.	UNIT	UNIT PRICE	TOTAL PRICE
BASE BID						
1	1	Tank Construction	1	LS	$4,494,200.00	$4,494,200.00
2	2	Pipeline Construction	1	LS	$9,044,000.00	$9,044,000.00
3	3	Permitting (Railroad, ditch, Weld County)	1	LS	$100,000.00	$100,000.00
4	4	Design + Construction Engineering (10%)	1	LS	$1,400,000.00	$1,400,000.00
5	5	Inspection (Tank)	1	LS	-	$131,750.00
6	5.01	Geotechnical (Excavation, Drilled Piers)	1	LS	$34,500.00	-
7	5.02	CMT (Concrete & Rebar)	1	LS	$17,500.00	-
8	5.03	Tank (Steel, Coatings)	1	LS	$79,750.00	-
5	6	Special Inspection (Waterline)	1	LS	-	$102,750.00
5	6.01	Compaction Testing	1	LS	$11,500.00	
9	6.02	Inspection & Submittal Review (Pipeline Geotech - Bores)	1	LS	$91,250.00	
					BASE COST	**$15,272,700.00**
					CONTINGENCY	**$727,300.00**
					PROJECT TOTAL:	**$16,000,000.00**

AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

THIS AGREEMENT is by and between Town of Johnstown ("Owner") and SHM West, LLC ("Contractor").

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

The work consists of furnishing and installing approximately 37,300 LF of 12 and 16-inch C905 (DR 18) PVC pipeline, 12" and 16" fittings, isolation valves, 8 air relief valves, 40 fire hydrants, pipe restraints, one HDD river crossing, four bored canal crossings, two tunneled railroad crossings, two county road crossings, two PRV stations, and related work in conjunction with construction of the Town's new South Water Tank.

ARTICLE 2 – THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: South Tank Water Distribution System.

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by J-U-B Engineers, Inc. an Idaho corporation ("Engineer").

3.02 The Owner has retained Engineer to act as Owner's representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 *Time of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Contract Times: Dates*

A. The Work shall be substantially completed within 300 calendar days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within 330 calendar days after the date when the Contract Times commence to run (i.e, Work will be finally complete and ready for final payment 30 calendar days after the date of Substantial Completion).

B. Parts of the Work shall be substantially completed on or before the following Milestone(s):

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1. The following Work described in Schedule A, including final surface repair, shall be completed between November 1st, 2021 and February 28th, 2022.
    a. Work on private property within Town of Johnstown permanent and temporary construction easements (Olson Bros. property – Sheet C-213 through Sheet C-231)
2. The following Work described in Schedules A & B, including final surface repair, shall be completed between October 1st, 2021 and March 31st, 2022.
    a. Farmers Extension Canal bored crossings (Sheets C-209 & C-220)
    b. Hillsboro Consolidated Ditch bored crossings (Sheets C-247 & C-253)

4.03 *Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. Substantial Completion: Contractor shall pay Owner $1500 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner $1500 for each day that expires after such time until the Work is completed and ready for final payment.
3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

4.04 *Special Damages*

A. In addition to the amount provided for liquidated damages, Contractor shall reimburse Owner (1) for any fines or penalties imposed on Owner as a direct result of the Contractor's failure to attain Substantial Completion according to the Contract Times, and (2) for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract), until the Work is substantially complete.

B. After Contractor achieves Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times, Contractor shall reimburse Owner for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Work to be completed and ready for final payment (as duly adjusted pursuant to the Contract), until the Work is completed and ready for final payment.

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ARTICLE 5 – CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents the amounts that follow, subject to adjustment under the Contract:

A. For all Work, at the prices stated in Contractor's Bid, attached hereto as an Exhibit and made a part of the Contract Documents. The extended prices for Unit Price Work set forth as of the Effective Date of the Contract are based on estimated quantities. As provided in Paragraph 13.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the 25th day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract

a. 95 percent of Work completed (with the balance being retainage); and

b. 95 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 95 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 200 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06 and in accordance with the Colorado Public Works Act, Section 38-26-101, *et seq*., C.R.S.

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ARTICLE 7 – INTEREST

7.01 All amounts not paid when due shall bear interest at the rate of 3 percent per annum, except that interest shall not accrue upon funds withheld pursuant to the Contract Documents.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:

A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.

B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.

F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.

G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.

H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

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ARTICLE 9 – CONTRACT DOCUMENTS

9.01 *Contents*

A. The Contract Documents consist of the following:

1. This Agreement (pages 1 to _8_, inclusive).
2. Performance bond (pages __1_ to _3__, inclusive).
3. Payment bond (pages _1__ to _3__, inclusive).
4. Other bonds.
   a. ___ (pages ___ to ___, inclusive).
5. General Conditions (pages _1__ to _65__, inclusive).
6. Supplementary Conditions (pages 1 to 21, inclusive).
7. Specifications as listed in the table of contents of the Project Manual.
8. Drawings (not attached but incorporated by reference) consisting of ___ sheets with each sheet bearing the following general title: _South Tank Water WDS Loop_.
9. Addenda (numbers _1_ to _4_, inclusive).
10. Exhibits to this Agreement (enumerated as follows):
    a. Contractor's Bid (pages _1_ to _96_, inclusive).
11. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
    a. Notice to Proceed.
    b. Work Change Directives.
    c. Change Orders.
    d. Field Orders.

B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 9.

D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 *Terms*

A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

10.02 *Assignment of Contract*

A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited

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by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 *Successors and Assigns*

A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 *Severability*

A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.05 *Contractor's Certifications*

A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

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IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on _____ (which is the Effective Date of the Contract).

OWNER:	CONTRACTOR:
Town of Johnstown, Colorado	_____
By: Gary Lebsack	By: _____
Title: _____	Title: _____
	(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)
Attest: _____	Attest: _____
Title: _____	Title: _____
Address for giving notices:	Address for giving notices:
450 S. Parish Ave	_____
Johnstown, CO 80534	_____
_____	_____
	License No.: _____ *(where applicable)*

CONTRACTOR NOTARY BLOCK

STATE OF COLORADO)
)ss
COUNTY OF _____)

SUBSCRIBED AND SWORN to before me this _____day of _____, 2021, by _____ as the _____ of _____.

WITNESS my hand and official seal.

My commission expires:_____

_____
Notary Public

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NOTICE OF AWARD

Date of Issuance: November 1, 2021

Owner:	Town of Johnstown	Owner's Contract No.:	N/A
Engineer:	J-U-B ENGINEERS, Inc.	Engineer's Project No.:	87-20-004
Project:	South Tank Water Dist. System	Contract Name:	South Tank WDS
Bidder:	SMH West, LLC.		

Bidder's Address: 900 Castleton Rd, Ste. 125, Castle Rock, CO 80109

TO BIDDER:

You are notified that Owner has accepted your Bid dated October 14, 2021 for the above Contract, and that you are the Successful Bidder and are awarded a Contract for: South Tank Water Distribution System Schedules A&B, Pipe Alternate A, and Additive Alternates A&B.

The work consists of furnishing and installing approximately 37,300 LF of 12 and 16-inch C905 (DR 18) PVC pipeline, 12" and 16" fittings, isolation valves, 8 air relief valves, 40 fire hydrants, pipe restraints, one HDD river crossing, four bored canal crossings, two tunneled railroad crossings, two county road crossings, two PRV stations, and related work in conjunction with construction of the Town's new South Water Tank.

The Contract Price of the awarded Contract is: $ $9,044,000.00 (Schedule A, $1,934,489.00; Schedule B, $2,223,611.00; Pipe Alternate A, $4,600,900; Additive Alternate A, $187,000; Additive Alternate B, $98,000 based on unit prices.

[1] unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award, or has been transmitted or made available to Bidder electronically. *[revise if multiple copies accompany the Notice of Award]*

☒ a set of the Drawings will be delivered separately from the other Contract Documents.

You must comply with the following conditions precedent within 15 days of the date of this Notice of Award:

1. Deliver to Owner [_3_]counterparts of the Agreement, fully executed by Bidder.
2. Deliver with the executed Agreement(s) the Contract security (i.e. Performance and Payment Bonds) and insurance documentation as specified in the Instructions to Bidders and General Conditions, Articles 2 and 6.
3. Other conditions precedent (if any): Construction schedule

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

Owner: Town of Johnstown, Colorado

By: _____

Authorized Signature Date

Name:

Title:

Copy: Engineer

NOTICE TO PROCEED

Owner:	Town of Johnstown	Owner's Contract No.:	N/A
Contractor:	SMH West, LLC.	Contractor's Project No.:	N/A
Engineer:	J-U-B Engineers, Inc.	Engineer's Project No.:	87-20-004
Project:	South Tank Water Dist. System	Contract Name:	South Tank WDS
		Effective Date of Contract:	

TO CONTRACTOR:

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on [_____, 20__]. *[see Paragraph 4.01 of the General Conditions]*

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work shall be done at the Site prior to such date. In accordance with the Agreement, [the date of Substantial Completion is _____, and the date of readiness for final payment is_____] ***or*** [the number of days to achieve Substantial Completion is _____, and the number of days to achieve readiness for final payment is _____].

Before starting any Work at the Site, Contractor must comply with the following:
[Note any access limitations, security procedures, or other restrictions]

Owner**:** Town of Johnstown

Authorized Signature

By:

Title:

Date Issued:

Copy: Engineer

EJCDC
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

PERFORMANCE BOND

CONTRACTOR *(name and address)*:

SMHWest LLC
900 Castleton Rd, Ste. 125
Castle Rock, CO 80109

SURETY *(name and address of principal place of business)*:

OWNER *(name and address)*:

Town of Johnstown
450 S. Parish Ave.
Johnstown, CO 80534

CONSTRUCTION CONTRACT

Effective Date of the Agreement:
Amount: $9,044,000
Description *(name and location)*: South Tank Water Distribution Loop (Schedules A&B, Pipe Alternate A, and Additive Alternates A&B), Johnstown, CO

BOND

Bond Number:
Date *(not earlier than the Effective Date of the Agreement of the Construction Contract)*:
Amount:
Modifications to this Bond Form: ☐ None ☐ See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

_____ *(seal)*
Contractor's Name and Corporate Seal

By: _____
Signature

_____
Print Name

_____
Title

Attest:_____
Signature

_____
Title

SURETY

_____ *(seal)*
Surety's Name and Corporate Seal

By:_____
Signature *(attach power of attorney)*

_____
Print Name

_____
Title

Attest:_____
Signature

_____
Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

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1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.

3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after:

3.1 The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

3.2 The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

3.3 The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:

7.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

7.2 additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and

7.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.

9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.

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10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

11. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs later. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

14. Definitions

14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

14.2 Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

14.3 Contractor Default: Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

14.4 Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

14.5 Contract Documents: All the documents that comprise the agreement between the Owner and Contractor.

15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

16. Modifications to this Bond are as follows:

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EJCDC
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

PAYMENT BOND

CONTRACTOR *(name and address)*:

SMHWest LLC
900 Castleton Rd, Ste. 125
Castle Rock, CO 80109

SURETY *(name and address of principal place of business)*:

OWNER *(name and address)*:

Town of Johnstown
450 S. Parish Ave.
Johnstown, CO 80534

CONSTRUCTION CONTRACT

Effective Date of the Agreement:
Amount: $9,044,000
Description *(name and location)*: South Tank Water Distribution System ~~Loop~~ (Schedules A&B, Pipe Alternate A, and Additive Alternates A&B), Johnstown, CO

BOND

Bond Number:
Date *(not earlier than the Effective Date of the Agreement of the Construction Contract)*:
Amount:
Modifications to this Bond Form: ☐ None ☐ See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

_____ *(seal)*
Contractor's Name and Corporate Seal

By: _____
Signature

_____
Print Name

_____
Title

Attest:_____
Signature

_____
Title

SURETY

_____ *(seal)*
Surety's Name and Corporate Seal

By:_____
Signature *(attach power of attorney)*

_____
Print Name

_____
Title

Attest:_____
Signature

_____
Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

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1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.

4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.

5. The Surety's obligations to a Claimant under this Bond shall arise after the following:

   5.1 Claimants who do not have a direct contract with the Contractor,

      5.1.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and

      5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).

   5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).

6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.

7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

   7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

   7.2 Pay or arrange for payment of any undisputed amounts.

   7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.

11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

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12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of two years from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first later. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

16. **Definitions**

16.1 **Claim:** A written statement by the Claimant including at a minimum:

1. The name of the Claimant;
2. The name of the person for whom the labor was done, or materials or equipment furnished;
3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
4. A brief description of the labor, materials, or equipment furnished;
5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
7. The total amount of previous payments received by the Claimant; and
8. The total amount due and unpaid to Claimant for labor, materials, or equipment furnished as of the date of the Claim.

16.2 **Claimant:** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

16.3 **Construction Contract:** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

16.4 **Owner Default**: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

16.5 **Contract Documents:** All the documents that comprise the agreement between the Owner and Contractor.

17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

18. Modifications to this Bond are as follows:

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.

3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

5. *Bidder*—An individual or entity that submits a Bid to Owner.

6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.

7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.

8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.

9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.

10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer

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has declined to address. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. ("CERCLA"); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. ("RCRA"); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

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24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.

25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.

26. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.

27. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.

28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.

29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.

30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.

31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.

32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or "RPR" includes any assistants or field staff of Resident Project Representative.

33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.

34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer's review of the submittals and the performance of related construction activities.

35. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

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37. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.

38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.

39. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.

40. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.

42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.

43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.

44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.

45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

46. *Unit Price Work*—Work to be paid for on the basis of unit prices.

47. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

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48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 *Terminology*

A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. *Intent of Certain Terms or Adjectives*:

1. The Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.

C. *Day*:

1. The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective*:

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:

a. does not conform to the Contract Documents; or

b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or

c. has been damaged prior to Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).

E. *Furnish, Install, Perform, Provide*:

1. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

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3. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words "furnish," "install," "perform," or "provide," then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

A. *Bonds*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.

B. *Evidence of Contractor's Insurance*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.

C. *Evidence of Owner's Insurance*: After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.

B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;

2. a preliminary Schedule of Submittals; and

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3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.

B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Initial Acceptance of Schedules*

A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

2.06 *Electronic Transmittals*

A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.

B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.

C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or

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computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is required by one is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.

C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.

D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.

E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

3.02 *Reference Standards*

A. Standards Specifications, Codes, Laws and Regulations

1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*:

1. *Contractor's Verification of Figures and Field Measurements*: Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict,

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error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

2. *Contractor's Review of Contract Documents*: If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies*:

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:

   a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or

   b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.

B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.

C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

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3.05 *Reuse of Documents*

A. Contractor and its Subcontractors and Suppliers shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or

2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to such date.

4.03 *Reference Points*

A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.

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2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.

B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.

C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:

1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;

2. abnormal weather conditions;

3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and

4. acts of war or terrorism.

D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.

E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.

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G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*:

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.

2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part

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by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

B. *Removal of Debris During Performance of the Work*: During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning*: Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading of Structures*: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

A. *Reports and Drawings*: The Supplementary Conditions identify:

1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;

2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and

3. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

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5.04 *Differing Subsurface or Physical Conditions*

A. *Notice by Contractor*: If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site either:

1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or

2. is of such a nature as to require a change in the Drawings or Specifications; or

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

B. *Engineer's Review*: After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.

C. *Owner's Statement to Contractor Regarding Site Condition*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.

D. *Possible Price and Times Adjustments*:

1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. such condition must fall within any one or more of the categories described in Paragraph 5.04.A;

b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,

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c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:

a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or

b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or

c. Contractor failed to give the written notice as required by Paragraph 5.04.A.

3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.

4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

5.05 *Underground Facilities*

A. *Contractor's Responsibilities*: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and

2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;

b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;

c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and

d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.

B. *Notice by Contractor*: If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after

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becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.

C. *Engineer's Review*: Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

D. *Owner's Statement to Contractor Regarding Underground Facility*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.

E. *Possible Price and Times Adjustments*:

1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

   a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;

   b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;

   c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and

   d. Contractor gave the notice required in Paragraph 5.05.B.

2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.

3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

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5.06 *Hazardous Environmental Conditions at Site*

A. *Reports and Drawings*: The Supplementary Conditions identify:

1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and

2. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.

D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.

E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.

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F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.

G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.

H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.H shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

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ARTICLE 6 – BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.

B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.

D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.

E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.

F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

6.02 *Insurance—General Provisions*

A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.

B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.

C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is

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maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.

F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.

G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.

H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.

I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.

J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 *Contractor's Insurance*

A. *Workers' Compensation*: Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.

2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).

3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).

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4. Foreign voluntary worker compensation (if applicable).

B. *Commercial General Liability—Claims Covered*: Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:

1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
2. claims for damages insured by reasonably available personal injury liability coverage.
3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.

C. *Commercial General Liability—Form and Content*: Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:

1. Products and completed operations coverage:
   a. Such insurance shall be maintained for three years after final payment.
   b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
3. Broad form property damage coverage.
4. Severability of interest.
5. Underground, explosion, and collapse coverage.
6. Personal injury coverage.
7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.

D. *Automobile liability*: Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.

E. *Umbrella or excess liability*: Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.

F. *Contractor's pollution liability insurance*: Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result

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of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.

G. *Additional insureds*: The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.

H. *Contractor's professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.

I. *General provisions*: The policies of insurance required by this Paragraph 6.03 shall:

1. include at least the specific coverages provided in this Article.
2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.

J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

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6.04 *Owner's Liability Insurance*

A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

6.05 *Property Insurance*

A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."

2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.

3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.

4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).

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5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
6. extend to cover damage or loss to insured property while in transit.
7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
8. allow for the waiver of the insurer's subrogation rights, as set forth below.
9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
10. not include a co-insurance clause.
11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
12. include performance/hot testing and start-up.
13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.

B. *Notice of Cancellation or Change*: All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.

C. *Deductibles*: The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.

D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.

E. *Additional Insurance*: If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.

F. *Insurance of Other Property*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

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6.06 *Waiver of Rights*

A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.

D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

6.07 *Receipt and Application of Property Insurance Proceeds*

A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the

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policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.

C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.02 *Labor; Working Hours*

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.

B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and

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guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.04 *"Or Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.

1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that:

1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;

3) it has a proven record of performance and availability of responsive service; and

4) it is not objectionable to Owner.

b. Contractor certifies that, if approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times; and

2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

B. *Contractor's Expense*: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.

C. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

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D. *Effect of Engineer's Determination*: Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.

E. *Treatment as a Substitution Request*: If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

7.05 *Substitutes*

A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.

1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.

2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

a. shall certify that the proposed substitute item will:

1) perform adequately the functions and achieve the results called for by the general design,

2) be similar in substance to that specified, and

3) be suited to the same use as that specified.

b. will state:

1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,

2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and

3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.

c. will identify:

1) all variations of the proposed substitute item from that specified, and

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2) available engineering, sales, maintenance, repair, and replacement services.

d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.

B. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.

C. *Special Guarantee*: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

D. *Reimbursement of Engineer's Cost*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense.

F. *Effect of Engineer's Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

7.06 *Concerning Subcontractors, Suppliers, and Others*

A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.

B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.

C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.

D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.

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E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.

F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.

G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.

I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.

J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.

K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.

L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.

N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.

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O. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor

2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 *Patent Fees and Royalties*

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.08 *Permits*

A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work

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7.09 *Taxes*

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.10 *Laws and Regulations*

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.11 *Record Documents*

A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.12 *Safety and Protection*

A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:

1. all persons on the Site or who may be affected by the Work;

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2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.

C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.

D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

F. Contractor's duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.13 *Safety Representative*

A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

7.14 *Hazard Communication Programs*

A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or

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exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

7.16 *Shop Drawings, Samples, and Other Submittals*

A. *Shop Drawing and Sample Submittal Requirements*:

1. Before submitting a Shop Drawing or Sample, Contractor shall have:

a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;

b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and

d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.

B. *Submittal Procedures for Shop Drawings and Samples*: Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.

1. *Shop Drawings*:

a. Contractor shall submit the number of copies required in the Specifications.

b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to

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provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.

2. *Samples*:

   a. Contractor shall submit the number of Samples required in the Specifications.

   b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.

3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. *Other Submittals*: Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.

D. *Engineer's Review*:

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.

3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.

5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.

6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.

7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.

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8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.

E. *Resubmittal Procedures*:

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.

3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 *Contractor's General Warranty and Guarantee*

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.

B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;

2. recommendation by Engineer or payment by Owner of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. use or occupancy of the Work or any part thereof by Owner;

5. any review and approval of a Shop Drawing or Sample submittal;

6. the issuance of a notice of acceptability by Engineer;

7. any inspection, test, or approval by others; or

8. any correction of defective Work by Owner.

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D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.

B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:

1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

7.19 *Delegation of Professional Design Services*

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.

B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop

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Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 *Other Work*

A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.

B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.

C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

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8.02 *Coordination*

A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:

1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
2. an itemization of the specific matters to be covered by such authority and responsibility; and
3. the extent of such authority and responsibilities.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.

C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.

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D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9 – OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 *Replacement of Engineer*

A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents shall be that of the former Engineer.

9.03 *Furnish Data*

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

9.05 *Lands and Easements; Reports, Tests, and Drawings*

A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.

B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.

C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

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9.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

9.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.

B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during

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or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Project Representative*

A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

10.04 *Rejecting Defective Work*

A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 *Shop Drawings, Change Orders and Payments*

A. Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.

B. Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.

C. Engineer's authority as to Change Orders is set forth in Article 11.

D. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.06 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.07 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.08 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

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B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

10.09 *Compliance with Safety Program*

A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs (if any) of which Engineer has been informed.

ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK

11.01 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.

1. *Change Orders*:

a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.

b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.

2. *Work Change Directives*: A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an

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adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.

3. *Field Orders*: Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.02 *Owner-Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.03 *Unauthorized Changes in the Work*

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.

11.04 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.

B. An adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on

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the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).

C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

   a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;

   b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five percent;

   c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.01.C.2.a and 11.01.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;

   d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;

   e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and

   f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

11.05 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.

B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

11.06 *Change Proposals*

A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under

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the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.

1. *Procedures*: Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.

2. *Engineer's Action*: Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

3. *Binding Decision*: Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.

B. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

11.07 *Execution of Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders covering:

1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;

2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;

3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and

4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.

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B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

11.08 *Notification to Surety*

A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12 – CLAIMS

12.01 *Claims*

A. *Claims Process*: The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:

1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;

2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and

3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.

B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.

D. *Mediation*:

1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.

2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim

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submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.

E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.

F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.

G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 *Cost of the Work*

A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:

1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.

B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable

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thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

    a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

    b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

    c. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

    d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.

    e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

    f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes

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other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded*: The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.

2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee*: When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.

E. *Documentation*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

13.02 *Allowances*

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

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B. *Cash Allowances*: Contractor agrees that:

1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. *Contingency Allowance*: Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

13.03 *Unit Price Work*

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.

E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:

1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;

2. there is no corresponding adjustment with respect to any other item of Work; and

3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

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ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

14.02 *Tests, Inspections, and Approvals*

A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.

B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:

1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;

2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;

3. by manufacturers of equipment furnished under the Contract Documents;

4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and

5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.

F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to

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cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

A. *Contractor's Obligation*: It is Contractor's obligation to assure that the Work is not defective.

B. *Engineer's Authority*: Engineer has the authority to determine whether Work is defective, and to reject defective Work.

C. *Notice of Defects*: Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.

D. *Correction, or Removal and Replacement*: Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.

E. *Preservation of Warranties*: When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

F. *Costs and Damages*: In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

A. Engineer has the authority to require special inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.

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B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.

C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.

1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.

2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.

C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will

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include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 *Progress Payments*

A. *Basis for Progress Payments*: The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.

B. *Applications for Payments*:

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. *Review of Applications*:

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

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a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and

c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or

b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

a. to supervise, direct, or control the Work, or

b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or

c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or

d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or

e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.

6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:

a. the Work is defective, requiring correction or replacement;

b. the Contract Price has been reduced by Change Orders;

c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or

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e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due*:

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. *Reductions in Payment by Owner*:

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:

a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;

c. Contractor has failed to provide and maintain required bonds or insurance;

d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;

e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;

f. the Work is defective, requiring correction or replacement;

g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

h. the Contract Price has been reduced by Change Orders;

i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;

j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;

k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;

l. there are other items entitling Owner to a set off against the amount recommended.

2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount

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remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

15.03 *Substantial Completion*

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.

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E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.

F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.

2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

A. *Application for Payment*:

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of

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inspection, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:

   a. all documentation called for in the Contract Documents;

   b. consent of the surety, if any, to final payment;

   c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.

   d. a list of all disputes that Contractor believes are unsettled; and

   e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

B. *Engineer's Review of Application and Acceptance*:

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Completion of Work*: The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.

D. *Payment Becomes Due*: Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation,

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including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.07 *Waiver of Claims*

A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.

B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

15.08 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. correct the defective repairs to the Site or such other adjacent areas;
2. correct such defective Work;
3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.

B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

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E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);

2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;

3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or

4. Contractor's repeated disregard of the authority of Owner or Engineer.

B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:

1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and

2. enforce the rights available to Owner under any applicable performance bond.

C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.

D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.

E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses,

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and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.

G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate For Convenience*

A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and

3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.

B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for

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expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

A. *Disputes Subject to Final Resolution*: The following disputed matters are subject to final resolution under the provisions of this Article:

1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.

B. *Final Resolution of Disputes*: For any dispute subject to resolution under this Article, Owner or Contractor may:

1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
2. agree with the other party to submit the dispute to another dispute resolution process; or
3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18 – MISCELLANEOUS

18.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

18.02 *Computation of Times*

A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

18.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

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18.04 *Limitation of Damages*

A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

18.07 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

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SUPPLEMENTARY CONDITIONS

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These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract, EJCDC® C-700 (2013 Edition). All provisions that are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added thereto.

To the extent there is a conflict between the General Conditions and these Supplementary Conditions, these Supplementary Conditions shall control.

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

SC-1.01 Defined Terms

SC-1.01. Add to the list of definitions in Paragraph 1.01.A by inserting the following as numbered items in their proper alphabetical positions:

Geotechnical Baseline Report (GBR) — The interpretive report prepared by or for Owner regarding subsurface conditions at the Site, and containing specific baseline geotechnical conditions that may be anticipated or relied upon for bidding and contract administration purposes, subject to the controlling provisions of the Contract, including the GBR's own terms.

Geotechnical Data Report (GDR) — The factual report that collects and presents data regarding actual subsurface conditions at or adjacent to the Site, including Technical Data and other geotechnical data, prepared by or for Owner in support of the Geotechnical Baseline Report. The GDR's content may include logs of borings, trenches, and other site investigations, recorded measurements of subsurface water levels, the results of field and laboratory testing, and descriptions of the investigative and testing programs. The GDR does not include an interpretation of the data. If opinions, or interpretive or speculative non-factual comments or statements appear in a document that is labeled a GDR, such opinions, comments, or statements are not operative parts of the GDR and do not have contractual standing.

ARTICLE 2 – PRELIMINARY MATTERS

SC-2.01 Delivery of Bonds and Evidence of Insurance

SC-2.01 Delete Paragraphs 2.01 B. and C. in their entirety and insert the following in their place:

B. Evidence of Contractor's Insurance: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner copies of the policies of insurance (including all endorsements, and identification of applicable self-insured retentions and deductibles) required to be provided by Contractor in Article 6. Contractor may redact any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

C. Evidence of Owner's Insurance: After receipt from Contractor of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor copies of the policies of insurance to be provided by Owner under Article 6 (if any). Owner may redact any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

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SC-2.02 Copies of Documents

SC-2.02 Delete Paragraph 2.02.A in its entirety and insert the following in its place:

A. Owner shall furnish to Contractor only electronic copies of conformed Contract Documents incorporating and integrating all Addenda and any amendments negotiated prior to the Effective Date of the Contract (including one fully executed counterpart of the Agreement). Additional printed copies of the conformed Contract Documents will be furnished upon request at the cost of reproduction.

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

SC-5.03 Subsurface and Physical Conditions

SC-5.03 and 5.04. Delete Paragraphs 5.03 and 5.04 in their entireties and insert the following in their place:

SC-5.03 Subsurface and Physical Conditions

A. Reports and Drawings: The Supplementary Conditions hereby identify:

1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site (other than any Geotechnical Data Report or Geotechnical Baseline Report), and Technical Data contained in such reports. Such reports are as follows:

a. Report dated *October 7th, 2020, as prepared by Lithos Engineering Entitled Geotechnical Baseline Report, Town of Johnstown, South Tank and WDS Loop, Weld County, Colorado.* **The Technical Data contained in such report upon whose accuracy Contractor may rely are those indicated in the definition of Technical Data in the General Conditions.**

b. Report dated *October 7th, 2020, as prepared by Lithos Engineering Entitled Geotechnical Investigation Report, Town of Johnstown, South Tank and WDS Loop, Weld County, Colorado.* **The Technical Data contained in such report upon whose accuracy Contractor may rely are as indicated in the definition of Technical Data in the General Conditions.**

B. Reliance by Contractor on Technical Data Authorized:

Contractor may rely upon the accuracy of the Technical Data contained in such reports and drawings, but such reports and drawings are not Contract Documents. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or

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2. **other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or**

3. **any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.**

C. **Geotechnical Baseline Report:**

1. **The GBR and GDR are to be used in conjunction with other Contract Documents, including the Drawings and Specifications. If there is a conflict between the terms of the GBR and the GDR, the GBR's terms shall prevail.**

2. **The GBR describes certain select subsurface conditions that are anticipated to be encountered by Contractor during construction in specified locations (referred to here in the Supplementary Conditions as "Baseline Conditions"). These may include ground, geological, groundwater, and other subsurface geotechnical conditions, and baselines of anticipated Underground Facilities or subsurface structures.**

3. **The Baseline Conditions shall be used to assist in the administration of the Contract's differing site conditions clause at locations where subsurface conditions have been baselined. If a condition is baselined in the GBR, then only the pertinent Baseline Conditions shall be used to determine whether there is a differing site condition; and no other indication of that condition in the Contract Documents or Technical Data, or of a condition that describes, quantifies, or measures a similar characteristic of the subsurface, shall be used for the differing site condition determination.**

4. **The Baseline Conditions shall not be used to make differing site conditions determinations at locations that have not been baselined in the GBR, or at any location with respect to subsurface conditions that the Baseline Conditions do not address. If Underground Facilities or Hazardous Environmental Conditions are expressly addressed in the Baseline Conditions, then comparison to such Baseline Conditions shall be the primary means of determining (a) whether an Underground Facility was shown or indicated with reasonable accuracy, as provided in Paragraph 5.05 of the General Conditions, or (b) whether a Hazardous Environmental Condition was shown or indicated in the Contract Documents as indicated in Paragraph 5.06.H of the General Conditions. As indicated in Paragraph SC-5.04 below, the GDR shall be the primary resource for differing site conditions determinations in cases in which the GBR is inapplicable.**

5. **The descriptions of subsurface conditions provided in the GBR are based on geotechnical investigations, laboratory tests, interpretation, interpolation, extrapolation, and analyses. Neither Owner, Engineer, nor any geotechnical or other consultant warrants or guarantees that actual subsurface conditions will be as described in the GBR, nor is the GBR intended to warrant or guarantee the use of specific means or methods of construction.**

6. **The behavior of the ground during construction depends substantially upon the Contractor's selected means, methods, techniques, sequences, and procedures of construction. If ground behavior conditions are baselined in**

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the GBR, they are based on stated assumptions regarding construction means and methods.

7. The GBR shall not reduce or relieve Contractor of its responsibility for the planning, selection, and implementation of safety precautions and programs incident to Contractor's means, methods, techniques, sequences, and procedures of construction, or to the Work.

SC-5.04 Differing Subsurface or Physical Conditions

A. Notice: If Contractor believes that any subsurface condition that is uncovered or revealed at the Site:

1. differs materially from conditions shown or indicated in the GBR; or

2. differs materially from conditions shown or indicated in the GDR, to the extent the GBR is inapplicable; or

3. differs materially from conditions shown or indicated in Contract Documents other than the GBR or GDR, to the extent the GBR and GDR are inapplicable; or

4. to the extent the GBR and GDR are inapplicable, is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or

5. to the extent the GBR and GDR are inapplicable, is of such a nature as to require a change in the Drawings or Specifications; or

6. to the extent the GBR and GDR are inapplicable, is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

B. Engineer's Review: After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph SC/GBR 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption or continuation of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.

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C. Owner's Statement to Contractor Regarding Site Condition:

After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption or continuation of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.

D. Possible Price and Times Adjustments:

1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. such condition must fall within any one or more of the categories described in Paragraph SC-5.04.A;

b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03 of the General Conditions; and

c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:

a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or

b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or

c. Contractor failed to give the written notice as required by Paragraph SC-5.04.A.

3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.

4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

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SC-5.02 Use of Site and Other Areas

SC-5.02.E Add Paragraph 5.02.E to read as follows:

E. The responsibility for protection and safekeeping of equipment and materials on or near the Site is entirely that of Contractor, and no claim shall be made against Owner by reason of any act of an employee or trespasser. It shall be further understood that should any occasion arise necessitating access to the sites occupied by stored materials and equipment, Contractor shall immediately move the same. No materials or equipment may be placed upon Owner's property until Owner has agreed to the location contemplated by the Contractor to be used for storage.

SC-5.06 Hazardous Environmental Conditions

SC-5.06.A Delete Paragraph 5.06.A in its entirety and insert the following in its place:

A. *Reports and Drawings*: The following reports regarding Hazardous Environmental Conditions at the Site are known to Owner:

1. Report dated *November 20, 2020, prepared by J-U-B Engineering Inc., Fort Collins, CO., entitled: "Basis of Design Report: Town of Johnstown – South Tank"*.

2. The Technical Data contained in such report upon whose accuracy Contractor may rely are the representative Data posted by the State of Colorado and Colorado Department of Public Health and Environment.

SC-5.06.I Delete Paragraph 5.06.I in its entirety and renumber the subsequent paragraphs.

ARTICLE 6 – BONDS AND INSURANCE

SC-6.01 Performance, Payment and Other Bonds

SC-6.01.A Delete 6.01.A in its entirety and insert the following in its place:

A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until two years after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations or other specific provisions of the Contract.

SC-6.02 Insurance—General Provisions

SC-6.02.B Delete 6.02.B in its entirety and insert the following in its place:

B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Excepting any Colorado public entity self-insurance pool, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better. Notwithstanding the foregoing, Contractor may obtain worker's compensation

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insurance from an insurance company that has not been rated by A.M. Best, provided that such company (a) is domiciled in the state in which the project is located, (b) is certified or authorized as a worker's compensation insurance provider by the appropriate state agency, and (c) has been accepted to provide worker's compensation insurance for similar projects by the state within the last 12 months.

SC-6.03 Contractor's Liability Insurance

SC-6.03.E Delete 6.03.E in its entirety and insert the following in its place:

E. *Umbrella or excess liability*: Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Excepting only industry-standard exclusions that are acceptable to Owner, the coverage afforded shall follow form as to each and every one of the underlying policies.

SC-6.03.H Delete 6.03.H in its entirety and insert the following in its place:

H. *Contractor's professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. This insurance shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.

SC-6.03.K Add Paragraph 6.03.K to read as follows:

K. The limits of liability for the insurance required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Workers' Compensation, and related coverages under Paragraphs 6.03.A.1 and A.2 of the General Conditions:

State:		**Statutory**
Federal, if applicable (e.g., Longshoreman's):		**Statutory**
Jones Act coverage, if applicable:		
Bodily injury by accident, each accident	**$**	**Not Applicable**
Bodily injury by disease, aggregate	**$**	**Not Applicable**
Employer's Liability:		
Bodily injury, each accident	**$**	**1,000,000**

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Bodily injury by disease, each employee	**$**	**1,000,000**
Bodily injury/disease aggregate	**$**	**1,000,000**

For work performed in monopolistic states, stop-gap liability coverage shall be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of: **$ Not Applicable**

Foreign voluntary worker compensation **Statutory**

2. Contractor's Commercial General Liability under Paragraphs 6.03.B and 6.03.C of the General Conditions:

General Aggregate	**$**	**2,000,000**
Products - Completed Operations Aggregate	**$**	**2,000,000**
Personal and Advertising Injury	**$**	**1,000,000**
Each Occurrence (Bodily Injury and Property Damage)	**$**	**1,000,000**

3. Automobile Liability under Paragraph 6.03.D. of the General Conditions:

Bodily Injury:

Each person	**$**	**1,000,000**
Each accident	**$**	**1,000,000**

Property Damage:

Each accident	**$**	**1,000,000**

[or]

Combined Single Limit of	**$**	**2,000,000**

4. Excess or Umbrella Liability:

Per Occurrence	**$**	**5,000,000**
General Aggregate	**$**	**5,000,000**

5. Contractor's Pollution Liability:

Each Occurrence	**$**	**Not Applicable**
General Aggregate	**$**	**Not Applicable**

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☒ **If box is checked, Contractor is not required to provide Contractor's Pollution Liability insurance under this Contract**

6. **Additional Insureds: Contractor shall include all subcontractors, the Owner, and the Engineering as additional insured on the policy**
7. **Contractor's Professional Liability:**

Each Claim	**$ 500,000**
Annual Aggregate	**$ 500,000**

SC-6.05 Property Insurance

SC-6.05.A Amend Paragraph 6.05.A as follows:

Remove the language from the paragraph: "Unless otherwise provided in the Supplementary Conditions."

SC-6.05.A.2 Delete Paragraph 6.05.A.2 in its entirety and insert the following in its place:

2. **be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; hail; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.**

SC-6.05.B Amend Paragraph 6.05.B as follows:

Replace "10 days" with "30 days."

SC-6.06 Waiver of Rights

SC-6.06 Delete Paragraph 6.06 in its entirety and insert the following in its place:

A. **All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Contractor waives all rights against Owner and its officers, employees and agents**

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for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.

B. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

SC-7.02 Labor; Working Hours

SC-7.02.C Add Paragraph 7.02.C to read as follows:

C. If Owner consents to Work outside regular working hours or on Saturdays, Sundays or legal holidays, Contractor shall be responsible for the cost of any overtime pay or other expense incurred by Owner, including but not limited to those for Engineer's services (including those of the Resident Project Representative, if any), occasioned by the performance of Work at such times. If Contractor is responsible but does not pay, or if the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

SC-7.07 Patent Fees and Royalties

SC-7.07.B Delete Paragraph 7.07.B in its entirety and renumber the subsequent paragraph.

SC-7.09 Taxes

SC-7.09 Delete Paragraph 7.09 in its entirety and insert the following in its place:

A. All sales to Owner in its governmental capacity only shall be exempt from sales and use tax pursuant to Section 39-26-704, C.R.S. Contractor shall apply with the Department of Revenue, Sales Tax for an exemption certificate pursuant to and purchase the materials for incorporation in this Project tax-free pursuant to Section 39-26-708, C.R.S. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

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B. Owner is exempt from payment of sales and compensating use taxes of the State of Colorado and of cities and counties thereof on all materials to be incorporated into the Work.

1. Owner will furnish the required certificates of tax exemption to Contractor for use in the purchase of supplies and materials to be incorporated into the Work.

2. Owner's exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Contractor, or to supplies or materials not incorporated into the Work.

SC-7.12 Safety and Protection

Add Paragraph 7.12.H to read as follows:

H. Contractor shall comply with all state and federal laws, rules and regulations regarding Coronavirus 2019 (COVID-19). To the extent of an ambiguity or inconsistency therein, Contractor shall notify Owner and, unless Owner provides specific direction, act in a manner reasonably consistent with the state and federal laws, rules and regulations.

SC-7.20 Illegal Aliens.

Add Paragraph 7.20 to read as follows:

7.20 Illegal Aliens.

Pursuant to Section 8-17.5-101, et. seq., C.R.S., Owner may not enter into or renew a public contract for services with a contractor who knowingly employs or contracts with an illegal alien to perform work under the contract or who knowingly contracts with a subcontractor who knowingly employs or contracts with an illegal alien to perform work under the contract. In accordance with the mandatory provisions of Section 8-17.5-101, et. seq., C.R.S., Contractor shall not knowingly employ or contract with an illegal alien to perform work under the Contract nor shall Contractor enter into a contract with a subcontractor who fails to certify to Contractor that the subcontractor shall not knowingly employ or contract with an illegal alien to perform work under this contract.

Contractor shall verify or attempt to verify the employment eligibility of all employees who are newly hired to perform work under the Contract through participation in the E-Verify of the Department Program [as defined in Section 8-17.5-101(3.3), C.R.S.]. Contractor shall not use the E-Verify Program or the Department Program to undertake pre-employment screening of job applicants while the Contract is being performed.

If Contractor obtains actual knowledge that a subcontractor performing work under the Contractor knowingly employs or contracts with an illegal alien, Contractor shall:

a. Notify the subcontractor and Owner within three (3) days that Contractor has actual knowledge that the subcontractor is employing or contracting with an illegal alien; and

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b. Terminate the subcontract if within three (3) days of receiving actual notice the subcontractor does not stop employing or contracting with the illegal alien, except the Contractor shall not terminate the subcontractor if during such three (3) days the subcontractor provides information to establish that the subcontractor has not knowingly employed or contracted with an illegal alien.

Contractor shall comply with any reasonable request by the Department of Labor and Employment ("Department") made in the course of an investigation that the Department is undertaking pursuant to Section 8-17.5-102(5), C.R.S.

If Contractor violates the provisions of this paragraph, Owner may terminate the contract for breach and Contractor shall be liable for actual and consequential damages.

ARTICLE 8 – OTHER WORK AT THE SITE

SC-8.02 Coordination

SC-8.02 Delete Paragraph 8.02 in its entirety and insert the following in its place:

A. Owner is under contract with McDermott International to construct the South Water Tank and connecting pipeline for the performance of other work at or adjacent to the Site, including construction of an access road and a pipeline to the Site (within the gates).

B. Unless otherwise directed by Owner or Engineer, the *Pipeline Contractor* **shall have authority and responsibility for coordination of the various contractors and work forces at the Site.**

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

SC-10.03 Project Representative

SC-10.03 Add Paragraphs 10.03.B and 10.03.C to read as follows:

B. The Resident Project Representative (RPR) will be Engineer's representative at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions.

1. General: RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner only with the knowledge of and under the direction of Engineer.

2. Schedules: Review the progress schedule, schedule of Shop Drawing and Sample submittals, and Schedule of Values prepared by Contractor and consult with Engineer concerning acceptability.

3. Conferences and Meetings: Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other

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Project-related meetings, and prepare and circulate copies of minutes thereof.

4. **Liaison:**

   a. **Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.**

   b. **Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.**

   c. **Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.**

5. **Interpretation of Contract Documents: Report to Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Engineer.**

6. **Shop Drawings and Samples:**

   a. **Record date of receipt of Samples and Contractor-approved Shop Drawings.**

   b. **Receive Samples which are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.**

   c. **Advise Engineer and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal for which RPR believes that the submittal has not been approved by Engineer.**

7. **Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report such suggestions, together with RPR's recommendations, if any, to Engineer. Transmit to Contractor in writing decisions as issued by Engineer.**

8. **Review of Work and Rejection of Defective Work:**

   a. **Conduct on-Site observations of Contractor's work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.**

   b. **Report to Engineer whenever RPR believes that any part of Contractor's work in progress is defective, will not produce a completed Project that conforms generally to the Contract Documents, or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.**

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9. **Inspections, Tests, and System Start-ups:**

   a. **Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.**

   b. **Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.**

10. **Records:**

   a. **Prepare a daily report or keep a diary or log book, recording Contractor's hours on the Site, Subcontractors present at the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, deliveries of equipment or materials, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Engineer.**

   b. **Record names, addresses, fax numbers, e-mail addresses, web site locations, and telephone numbers of all Contractors, Subcontractors, and major Suppliers of materials and equipment.**

   c. **Maintain records for use in preparing Project documentation.**

11. **Reports:**

   a. **Furnish to Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the Progress Schedule and schedule of Shop Drawing and Sample submittals.**

   b. **Draft and recommend to Engineer proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from Contractor.**

   c. **Immediately notify Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, force majeure or delay events, damage to property by fire or other causes, or the discovery of any Constituent of Concern or Hazardous Environmental Condition.**

12. **Payment Requests: Review applications for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the Schedule of Values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.**

13. **Certificates, Operation and Maintenance Manuals: During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Engineer for review and forwarding to Owner prior to payment for that part of the Work.**

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14. **Completion:**

    a. **Participate in Engineer's visits to the Site to determine Substantial Completion, assist in the determination of Substantial Completion and the preparation of a punch list of items to be completed or corrected.**

    b. **Participate in Engineer's final visit to the Site to determine completion of the Work, in the company of Owner and Contractor, and prepare a final punch list of items to be completed and deficiencies to be remedied.**

    c. **Observe whether all items on the final list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the notice of acceptability of the work.**

C. **The RPR shall not:**

1. **Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).**
2. **Exceed limitations of Engineer's authority as set forth in the Contract Documents.**
3. **Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.**
4. **Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of Contractor's work.**
5. **Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.**
6. **Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.**
7. **Accept Shop Drawing or Sample submittals from anyone other than Contractor.**
8. **Authorize Owner to occupy the Project in whole or in part.**

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

SC-13.03 Unit Price Work

SC-13.03.E Delete Paragraph 13.03.E in its entirety and insert the following in its place:

E. **The unit price of an item of Unit Price Work shall be subject to reevaluation and adjustment under the following conditions:**

1. **the extended price of a particular item of Unit Price Work amounts to 10 percent or more of the Contract Price (based on estimated quantities at the time of Contract formation) and the variation in the quantity of that particular item of Unit Price Work actually furnished or performed by**

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Contractor differs by more than 25 percent from the estimated quantity of such item indicated in the Agreement; and

2. **there is no corresponding adjustment with respect to any other item of Work; and**
3. **Contractor believes that Contractor has incurred additional expense as a result thereof, Contractor may submit a Change Proposal, or if Owner believes that the quantity variation entitles Owner to an adjustment in the unit price, Owner may make a Claim, seeking an adjustment in the Contract Price.**

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

SC-15.01 Progress Payments

SC-15.01.B Amend Paragraph 15.01.B.1 as follows:

Remove the following language from the paragraph: "(but not more often than once a month)".

SC-15.01.B Amend Paragraph 15.01.B.3 as follows:

Add the following language to the end of the paragraph: "No payments will be made that would deplete the retainage, place in escrow any funds that are required for retainage, or invest the retainage for the benefit of the Contractor."

SC-15.01.D Amend Paragraph 15.01.D.1 as follows:

Replace "Ten days" with "Thirty days" in the first sentence in the paragraph.

SC-15.03 Substantial Completion

SC 15.03.B Add the following new subparagraph to Paragraph 15.03.B:

1. **If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, shall be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.**

SC-15.06 Final Payment

SC-15.06A Modify the first sentence of 15.06.A.1 as follows:

After Contractor has, in the opinion of Engineer and *Owner*, satisfactorily….

SC-15.08 Correction Period

SC-15.08A Delete Paragraph 15.08A in its entirety and insert the following in its place:

A. **If within two years after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be**

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defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. **correct the defective repairs to the Site or such other adjacent areas;**
2. **correct such defective Work;**
3. **if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective; and**
4. **satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.**

SC-15.08F Add Paragraph 15.08.F to read as follows:

F. In Owner's discretion, a warranty inspection shall be held during the sixty (60) day period prior to the expiration of the two-year warranty period. Contractor shall provide an authorized representative at such inspection to represent Contractor's interests.

ARTICLE 18 – MISCELLANEOUS

SC-18.01 Giving Notice

Add Paragraph 18.01.B to read as follows:

B. Notwithstanding the foregoing, notice of routine matters may be delivered by electronic mail on the condition that the intended recipient of the electronic mail acknowledges receipt thereof.

SC-18.05 No Waiver

Add Paragraph 18.05.B to read as follows:

B. Contractor understands and agrees that any waiver granted by Engineer or Owner of any term or provision of the Contract shall not constitute a precedent. Neither the acceptance of the Work by Engineer or Owner nor the payment of all or part of the sum due Contractor hereunder shall constitute a waiver by Owner of any claim Owner may have against Contractor.

SC-18.09 Venue

Add Paragraph 18.09 to read as follows:

A. Venue for any legal proceeding shall be in the County of Weld, State of Colorado.

SC-18.10 Appropriation.

Add Paragraph 18.10 to read as follows:

A. Pursuant to Section 24-91-103.6, C.R.S., as amended, Owner has appropriated the money necessary to fund the Project. No Change Order or other form of directive shall be issued by Owner requiring additional compensable work to be performed, which causes the aggregate amount payable under the Contract to exceed the amount appropriated for the original contract amount, unless Owner provides written assurance to the Contractor that lawful appropriations have been made to cover the cost of the additional work or unless such work is covered under the remedy-granting provisions of the Contract.

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B. Pursuant to Section 29-1-110, C.R.S., as amended, financial obligations of Owner payable as set forth herein, after the current fiscal year, are contingent upon funds for that purpose being appropriated, budgeted, and otherwise made available. This Contract shall be terminated effective January 1 of the first fiscal year for which funds are not appropriated.

SC-18.11 Independent Contractor

Add Paragraph 18.11 to read as follows:

A. Contractor understands and agrees that Contractor is an independent contractor and not an employee of Owner. Owner shall not provide benefits of any kind to Contractor. Owner shall not be responsible for withholding any portion of Contractor's compensation for the payment of Federal Insurance Contributions Act (FICA) tax, workers' compensation, or other taxes or benefits. CONTRACTOR IS NOT ENTITLED TO UNEMPLOYMENT COMPENSATION COVERAGE FROM OWNER. CONTRACTOR IS OBLIGATED TO PAY FEDERAL AND STATE INCOME TAX ON MONEYS PAID PURSUANT TO THIS AGREEMENT. As long as there is not a conflict of interest with Owner, Contractor may engage in any other lawful business activities during the term of this Contract.

SC-18.12 Governmental Immunity

Add Paragraph 18.12 to read as follows:

A. No term or condition of this Contract shall be construed or interpreted as a waiver, express or implied, of any of the notices, requirements, immunities, rights, benefits, protections, limitations of liability, and other provisions of the Colorado Governmental Immunity Act, C.R.S. § 24-10-101 et seq. and under any other applicable law.

SC-18.13 Arbitration

Add Paragraph 18.13 to read as follows:

A. Notwithstanding any provision in the Contract Documents to the contrary, the Owner shall have the sole right to determine whether to submit a dispute or other matters to arbitration. It shall be otherwise presumed that all disputes and matters shall be resolved by a court of competent jurisdiction.

SC-18.14 Colorado Public Works Act

Add Paragraph 18.14 to read as follows:

A. Notwithstanding any other provision of the Contract, Owner may withhold funds if required to do so pursuant to the Colorado Public Works Act, Section 38-26-101, *et seq*., C.R.S.

SC- 18.15 Colorado Labor

Add Paragraph 18.15 to read as follows:

A. Pursuant to Title 8, Article 17, C.R.S., Contractor agrees, except as otherwise waived by Owner, to employ Colorado labor to perform the Work to the extent of not less than eighty percent of each type or class of labor in the several classifications of skilled and common labor employed under the Contract. "Colorado labor" means any person who is a resident of the state of Colorado, at the time of employment, without discrimination as to race, color, creed, sex, sexual orientation, marital status, national origin, ancestry, age, or religion except when sex or age is a bona fide occupational qualification.

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SC-18.16 Costs and Attorney Fees

Add Paragraph 18.16 to read as follows:

A. In the event of litigation enforcing or interpreting the terms of the Contract, to the extent permitted by law, recognizing the constitutional and statutory limitations regarding Owner's ability to pay unbudgeted and unappropriated funds, the prevailing party shall be entitled an award of reasonable attorney fees and all costs of suit, including expert witness fees, court reporter fees and similar litigation expenses.

SC-18.17 No Presumption

Add Paragraph 18.17 to read as follows:

A. Each party acknowledges that it has carefully read and reviewed the terms of this Agreement. Each party acknowledges that the entry into and execution of this Agreement is of its own free and voluntary act and deed, without compulsion. Each party acknowledges that it has obtained, or has had the opportunity to obtain, the advice of legal counsel of its own choosing in connection with the negotiation and execution of this Agreement and with respect to all matters set forth herein. The parties agree that this Agreement reflects the joint drafting efforts of all parties and in the event of any dispute, disagreement or controversy arising from this agreement, the parties shall be considered joint authors and no provision shall be interpreted against any party because of authorship.

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Town of Johnstown

TOWN COUNCIL AGENDA COMMUNICATIONS

AGENDA DATE: November 1, 2021

SUBJECT: Contract Award for Downtown Johnstown Parklet Project

ACTION PROPOSED: Consider Approval of Small Vendor Contractor Agreement regarding Downtown Johnstown Parklet Project

ATTACHMENTS:
1. Town of Johnstown Small Vendor Contractor Agreement
2. Downtown Johnstown Parklet Project RFP
3. Modstreet Proposal

PRESENTED BY: Sarah Crosthwaite, Economic Development Manager

AGENDA ITEM DESCRIPTION:

The Town of Johnstown submitted a grant application to CDOT: Revitalize Main Street Program in May 2021, requesting a $70,000 grant to design and purchase modular parklets to be installed in our downtown corridor along Parish Avenue. The grant request also included costs associated with furnishings (tables, chairs, etc.), weather elements (umbrellas, outdoor heaters, etc.), and traffic and marketing signage to promote the parklets and increase of pedestrians.

CDOT notified the Town in early September that it was awarded the full grant request. The grant award required a local 10% match of $7,000 from the Town. While the funds were not directly allocated into the FY 2021 budget, we believe we may be able to absorb this costs within the current budget without requring a budget amendment.

In keeping with our procurement policy the Town issued an RFP on September 20th requesting proposals that included design and materials of two (2) seasonal ADA accessible parklets that can be multifunctional (either for outdoor dining or general public outdoor space), furnishing that are multifunctional, and outdoor heating/cooling options. The parklets would be installed and maintained by Town staff and must easily assemble and disassemble on site. All design elements should enhance the existing historic downtown character.

The Town received a total of four proposals but only three qualified as complete and were reviewed. The following entities submitted a complete proposal:

- Archatrak - Bid Price Submitted $73,705.96
- StreetLife - Bid Price Submitted $74,993.80
- Modstreet - Bid Price Submitted $71,994 plus optional add-on services total $3,900*

  **Please note the Town will not contract for all the listed add-on services but instead work with Modstreet to determine which services/features are most beneficial to include in the design of the parklets.*

The Town would like to award Modstreet the Downtown Johnstown Parklet Project as their proposal included the required elements of a complete submittal and additional add-on services and features that would enhance the parklet aesthetics, usage, and pedestrian safety. Additionally, Modstreet is a Colorado based company that has worked with communities such Grand Junction, Durango, and Golden to provide similar products and services. Johnstown is excited to bring this project to our downtown businesses starting Spring 2022 and develop a robust parklet program that will promote placemaking, enhance the outdoor amenities available, and allow businesses to expand how they offer their goods and services to patrons.

LEGAL ADVICE:

The contract used is our standard Professional Services Agreement.

FINANCIAL ADVICE:

The Town was awarded a $70,000 grant from CDOT and will provide a 10% Town match of $7,000. The Town's total budget for the parklet project is not to exceed $77,000.

RECOMMENDED ACTION: Approve the small vendor contactor agreement.

SUGGESTED MOTIONS:

For Approval: I move to approve the Town of Johnstown Small Vendor Contractor Agreement awarding a contract to Modstreet.

For Denial: I move to deny the Town of Johnstown Small Vendor Contractor Agreement awarding a contract to Modstreet.

Reviewed and Approved for Presentation,

_____
Town Manager

TOWN OF JOHNSTOWN
SMALL VENDOR CONTRACTORAGREEMENT

THIS SMALL VENDOR CONTRACTOR AGREEMENT (the "Agreement") is made and entered into this ____ day of November 2021 (the "Effective Date") by and between the Town of Johnstown, Colorado, a Colorado home-rule municipal corporation (the "Town") and Modstreet, [a Colorado Company] ("Contractor") (collectively, the "Parties").

WHEREAS, the Town desires to engage the services of Contractor and Contractor wishes to provide those services more fully described on Exhibit A, attached hereto and incorporated herein by reference ("Services"), for the Town; and

WHEREAS, the Parties wish to memorialize their contractual relationship.

NOW, THEREFORE, incorporating the foregoing Recitals herein, which are hereby acknowledged as being true and correct, and in consideration of the mutual promises, agreements, undertakings and covenants, as set forth herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby mutually agree as follows:

SECTION 1: PARTIES

1.01 Town. The Town is a home-rule municipal corporation located in Johnstown, Colorado.

1.02 Contractor. Contractor has the background, expertise and education to provide the Services. Contractor is a private, independent business entity who will exercise discretion and judgment of an independent contractor in the performance and exercise of its rights and obligations under this Agreement. Contractor shall use its own judgment and skills in determining the method, means and manner of performing this Agreement. Contractor shall be responsible for the proper performance of this Agreement in accordance with the terms hereof and any and all applicable federal, state, and municipal laws, regulations and orders.

SECTION 2: SERVICES, TERM AND COMPENSATION

2.01 Services. Contractor agrees to perform the Services for the Town.

2.02 Term. Unless otherwise terminated in accordance with Section 5, the term of this Agreement shall be from the Effective Date through May 2022, and shall not extend beyond that date absent the written approval of the Town.

2.03 Duties and Compensation. The Contractor's duties and compensation shall be as set forth on Exhibit A. In the event of a conflict between the provisions in this Agreement and

Exhibit A, the provisions in this Agreement shall control. Payment for Services shall be provided to Contractor within thirty (30) days of Contractor providing a detailed invoice to the Town.

2.04 Background Check. The Town may, in its sole discretion, conduct a background check of Contractor, its owners and employees. Contractor agrees to execute any forms necessary to facilitate the background check.

SECTION 3: OPERATIONS

3.01 Expenses: Contractor shall not incur any expense or debt on behalf of the Town without the Town's prior written authorization.

3.02 Federal, State, and Municipal Laws and Regulations. Contractor agrees to abide by all applicable federal, state, and municipal laws and regulations and rules.

SECTION 4: INSURANCE AND INDEMNITY PROVISIONS

4.01 Insurance. Contractor shall maintain and keep in force during the term of this Agreement one or more policies of liability insurance written by one or more responsible insurance carrier(s) authorized to do business in the State of Colorado, which will include protecting and indemnifying the Town in the following amounts:

a) Comprehensive General Liability - $1,000,000 combined aggregate

b) Workers Compensation – as required by law

Contractor shall furnish to the Town appropriate certificates of coverage for such insurance. The insurance may not be canceled without at least fifteen (15) days' advance written notice to the Town. Any required deductible or co-insurance amount shall be paid by the Contractor.

4.02 Damage and Indemnity. Contractor assumes full responsibility for any and all damages caused by Contractor's exercise of its activities under by this Agreement. Contractor agrees that it will at all times protect, defend and indemnify and hold harmless the Town, its officers, agents, employees, tenants and their successors and assigns from and against all liabilities, losses, claims, demands, actions and court costs (including reasonable attorneys' fees), arising from or related to loss or damage to property or injury to or death to any persons resulting in any manner from the actions or failure to act of Contractor or any invitees, guests, agents, employees or subcontractors of Contractor, whether brought by any of such persons or any other person arising from Contractor's activities as authorized by this Agreement.

SECTION 5: TERMINATION

5.01 Termination. The Town or Contractor may terminate this Agreement, with or without cause, by providing thirty (30) days prior written notice to Contractor. Notwithstanding the foregoing, if the Town terminates this Agreement for cause and determines that a notice period is not in the best interests of the Town, the Town may terminate this Agreement by providing written notice to Contractor effective immediately.

SECTION 6: INDEPENDENT CONTRACTOR

6.01 Independent Contractor. Contractor understands and agrees that Contractor is an independent contractor and not an employee of the Town. The Town shall not provide benefits of any kind to Contractor. The Town shall not be responsible for withholding any portion of Contractor's compensation for the payment of Federal Insurance Contributions Act (FICA) tax, workers' compensation, or other taxes or benefits. CONTRACTOR IS NOT ENTITLED TO UNEMPLOYMENT COMPENSATION COVERAGE FROM THE TOWN. CONTRACTOR IS OBLIGATED TO PAY FEDERAL AND STATE INCOME TAX ON MONEYS PAID PURSUANT TO THIS AGREEMENT. As long as there is not a conflict of interest with the Town, Contractor may engage in any other lawful business activities during the term of this Agreement.

SECTION 7: NOTICE

7.01 Notices. All notices, demands, or other documents required or desired to be given, made or sent to either Party under this Agreement shall be made in writing, shall be deemed effective upon receipt and shall be personally delivered or mailed postage prepaid, certified mail, return receipt requested as follows:

TO THE TOWN:
Town of Johnstown
Attn: Town Clerk
450 S. Parish Avenue
Johnstown, CO 80534
Email: dseele@johnstownco.gov

TO CONTRACTOR:
Modstreet
Attn: Roger Zalneraitis
736 Main Ave, Suite A
Durango, CO 81301
Email: roger@modstreet.co

The addresses for notices may be changed by written notice given to the other Party in the manner provided above. Notice may also be sent via e-mail delivery and shall be effective upon confirmation of receipt of the email.

SECTION 8: MISCELLANEOUS

8.01 Time. Time is of the essence of this Agreement and of each covenant hereof.

8.02 Non-Appropriation of Funds. Pursuant to Section 29-1-110, C.R.S., as amended, financial obligations of the Town payable as set forth herein, after the current fiscal year, are contingent upon funds for that purpose being appropriated, budgeted, and otherwise made available. This Agreement shall be terminated effective January 1 of the first fiscal year for

which funds are not appropriated.

8.03 Illegal Aliens. Contractor shall comply with the statutory provisions prohibiting employment of illegal aliens, as set forth on Exhibit B, attached hereto and incorporated herein by such reference.

8.04 Assignment; Third Party Rights. Contractor may not assign, delegate or subcontract any part of its rights, duties or obligations under this Agreement. The Parties do not intend to confer any benefit hereunder on any person or entity other than the Parties hereto.

8.05 Amendment. This Agreement may not be amended or modified except by a subsequent written instrument signed by both Parties.

8.06 Severability. If any part, term or provision of this Agreement is declared unlawful or unenforceable, the remainder of this Agreement shall remain in full force and effect, except that, in the event any state or federal governmental agency or court authoritatively determines that the relationship between the Town and Contractor is one of employment rather than independent contractor, this Agreement shall become null and void in its entirety.

8.07 Waiver. No consent or waiver, express or implied, by a Party to or of any breach or default by the other Party in the performance by the other Party of its obligations hereunder shall be deemed or construed to be a consent or waiver to or of any other breach or default by the non-defaulting Party. Failure on the part of any Party to complain of any act or failure to act or to declare any other Party in default, irrespective of how long such failure continues, shall not constitute a waiver by such Party of its rights hereunder.

8.08 Governmental Immunity. The Parties agree that the Town is relying on, and does not waive or intend to waive by any provision of the Agreement, the monetary limitations or any other rights, immunities, and protections provided by the Colorado Governmental Immunity Act, §§ 24-10-101 et seq., 10 C.R.S., as from time to time amended, or otherwise available to the Town, its officers, or its employees.

8.09 Applicable Law and Venue. This Agreement shall be construed according to the laws of the State of Colorado. Venue for any claim, proceeding or action arising out of this Agreement shall be in Weld County, State of Colorado.

8.10 Mediation. In the event of any dispute arising under this Agreement, except in the case of injunctive relief as set forth in Paragraph 8.11, the Parties shall submit the matter to mediation prior to commencing legal action and shall equally share the cost of the mediation.

8.11 Right to Injunction. The Parties hereto acknowledge that the services to be rendered by the Contractor under this Agreement and the rights and privileges granted to the Town under the Agreement are of a special, unique, unusual and extraordinary character which gives them a peculiar value, the loss of which may not be reasonably or adequately compensated by damages in any action at law, and the breach by the Contractor of any of the provisions of this Agreement may cause the Town irreparable injury and damage. The Contractor agrees that the Town, in addition to other relief at law, shall be entitled to injunctive and other equitable relief in

the event of, or to prevent, a breach of any provision of this Agreement by the Contractor.

8.12 Costs and Attorney's Fees. If any judicial proceedings may hereafter be brought to enforce any of the provisions of this Agreement, the Town, if the prevailing party, shall be entitled to recover the costs of such proceedings, including reasonable attorney's fees and reasonable expert witness fees.

8.13 Entire Agreement. The provisions of this Agreement represent the entire and integrated agreement between the Town and the Contractor and supersede all prior negotiations, representations and agreements, whether written or oral.

8.14 Public Official Personal Liability. Nothing herein shall be construed as creating any personal liability on the part of any elected official, officer, employee or agent of the Town.

8.15 No Presumption. Each Party acknowledges that it has carefully read and reviewed the terms of this Agreement. Each Party acknowledges that the entry into and execution of this Agreement is of its own free and voluntary act and deed, without compulsion. Each Party acknowledges that it has obtained, or has had the opportunity to obtain, the advice of legal counsel of its own choosing in connection with the negotiation and execution of this Agreement and with respect to all matters set forth herein. The Parties agree that this Agreement reflects the joint drafting efforts of all Parties and in the event of any dispute, disagreement or controversy arising from this agreement, the Parties shall be considered joint authors and no provision shall be interpreted against any Party because of authorship.

8.16 Headings. The headings in this Agreement are inserted only for the purpose of convenient reference and in no way define, limit or prescribe the scope or intent of this Agreement or any part thereof.

[Remainder of page intentionally left blank.]

IN WITNESS WHEREOF, the parties have executed this Agreement on the date first written above.

TOWN OF JOHNSTOWN, COLORADO

ATTEST:

By:_____ By:_____
Diana Seele, Town Clerk Gary Lebsack, Mayor

Modstreet:

By:_____
Name: Roger Zalneraitis
Title: Chief Executive Officer

STATE OF COLORADO)
) ss
COUNTY OF _____)

SUBSCRIBED AND SWORN to before me this _____day of _____, 20_____, by _____ as the _____ of _____.

WITNESS my hand and official seal.

My commission expires:_____

_____
Notary Public

EXHIBIT A
SERVICES

Parklet

- Design and build of high quality, flexible outdoor parklets including platform, barricades and railings
- Parklet 1 Dimension: 48ft x 8ft *approximate size of 2 parallel parking spots; size can vary to meet budget*
- Parklet 2 Dimension: 24ft x 8ft *approximate size of 1 parallel parking spot; size can vary to meet budget*
- Parklets must allow for proper water drainage
- Parklets must be ADA accessible (transition plate to cover gap between parklet and curb)
- Parklet surface must be non-slip
- Design installation, and material must be safe and durable for outdoor use
- Parklet structure must allow for on-site assembly and disassembly
- Canopy or other roofing options must be provided
- Preference will be given to parklet designs that enhance the existing aesthetics of the downtown corridor

Outdoor Furniture & Design Elements

- Parklet 1 design should include furniture, seating, and design elements to allow for principle use of outdoor dining
- Parklet 2 design should include furniture, seating, and design elements to allow for a more general outdoor public seating use that can easily be converted towards specific uses such as outdoor dining
- All furniture and design elements should be ADA accessible
- Design installation, and material must be safe and durable for outdoor use
- Outdoor elements should include outdoor heaters and coolers, umbrellas, lighting, planters (that can serve as seating potentially), and other elements and features that enhance the parklet

Safety & Marketing Elements*

- Safeguard reflective signs and/or decals that ensure pedestrian safety
- Wayfinding signage and traffic signaling signs
- On-site marketing such as concrete decals, feather flags, etc.

**Safety and Marketing elements are not required but preference will be given to firms that can provide this service or can provide the Town contacts of qualified firms to complete the specified work. Please indicate in your cover letter/executive summary.*

Schedule of Work

- November-January 2021: Design/order parklets and all exterior elements/furnishing
- April 2022: All ordered materials and items must be delivered to the Town of Johnstown

TOTAL BUDGET COSTS WILL NOT EXCEED $77,000

EXHIBIT B
REQUIRED PROVISIONS FOR CONTRACT FOR SERVICES
PROHIBITING EMPLOYMENT OF ILLEGAL ALIENS

Contractor shall not:

1. Knowingly employ or contract with an illegal alien to perform work under this public contract for services; or

2. Enter into a contract with a subcontractor that fails to certify to the Contractor that the subcontractor shall not knowingly employ or contract with an illegal alien to perform work under this public contract for services.

Contractor has confirmed the employment eligibility of all employees who are newly hired for employment to perform work under the public contract for services through participation in either the e-verify program or the Department of Labor and Employment program.

Contractor is prohibited from using either the e-verify program or the Department of Labor and Employment program procedures to undertake pre-employment screening of job applicants while the public contract for services is being performed.

If Contractor obtains actual knowledge that a subcontractor performing work under the public contract for services knowingly employs or contracts with an illegal alien, the Contractor shall be required to:

1. Notify the subcontractor and the contracting state agency or political subdivision within three days that the Contractor has actual knowledge that the subcontractor is employing or contracting with an illegal alien; and

2. Terminate the subcontract with the subcontractor if within three days of receiving the notice required pursuant to subparagraph 1 of this subparagraph the subcontractor does not stop employing or contracting with the illegal alien; except that the Contractor shall not terminate the contract with the subcontractor if during such three days that subcontractor provides information to establish that the subcontractor has not knowingly employed or contracted with an illegal alien.

Contractor shall comply with any reasonable request by the Department made in the course of an investigation that the Department of Labor and Employment is undertaking pursuant to the authority established in subsection (5) of Section 8-17.5-102 of the Colorado Revised Statutes.

IF CONTRACTOR VIOLATES ANY OF THE AFOREMENTIONED REQUIREMENTS, THE TOWN MAY TERMINATE THE CONTRACT FOR BREACH OF CONTRACT. IF THIS CONTRACT IS SO TERMINATED, CONTRACTOR SHALL BE LIABLE FOR ACTUAL AND CONSEQUENTIAL DAMAGES TO THE TOWN OF JOHNSTOWN.

REQUEST FOR PROPOSALS

TITLE:

Downtown Johnstown Parklet Project

ISSUED ON: September 20, 2021

PROPOSALS DUE: October 15, 2021

Address:
450 South Parish Ave
Johnstown, CO 80534

Contact:
Sarah Crosthwaite
Economic Development Manager
970-578-9612
scrosthwaite@townofjohnstown.com

Project Summary:

The Town of Johnstown is soliciting competitive proposals to assist with the execution of the Downtown Johnstown Parklet Program. A successful proposal will include design and materials of two (2) seasonal ADA accessible parklets that can be multifunctional (either for outdoor dining or general public outdoor space), furnishing that are multifunctional, and outdoor heating/cooling options. The parklets will be installed and maintained by Town staff and must be easily assembled and disassembled on site. All design elements should enhance the existing historic downtown character.

Site Description:

The Town of Johnstown has identified Parish Avenue with end points between 1st Place and N 2nd Street as the targeted area within the downtown corridor for the placement of the parklets. The parklets will be installed along the public parallel parking spots that are located directly in front of the commercial businesses. Please see exhibit below-

Project Description:

The Downtown Parklet Program will provide businesses additional outdoor seating and allow patrons to have options in terms of indoor/outdoor seating. The Town will create and administer

the program. Additionally, Town staff will be responsible for setting up and dismantling the parklets while businesses who wish to utilize a parklet will be responsible in maintaining them while in use. The parklet program will be available seasonally depending on weather. **The total budget for this project is $75,000. RFI's that exceed budget will not be reviewed.**

Below are the required items for a complete RFI submission:

Parklet

- Design and build of high quality, flexible outdoor parklets including platform, barricades and railings
- Parklet 1 Dimension: 48ft x 8ft *approximate size of 2 parallel parking spots*
- Parklet 2 Dimension: 24ft x 8ft *approximate size of 1 parallel parking spot*
- Parklets must allow for proper water drainage
- Parklets must be ADA accessible (transition plate to cover gap between parklet and curb)
- Parklet surface must be non-slip
- Design installation, and material must be safe and durable for outdoor use
- Parklet structure must allow for on-site assembly and disassembly
- Canopy or other roofing options must be provided
- Preference will be given to parklet designs that enhance the existing aesthetics of the downtown corridor

Outdoor Furniture & Design Elements

- Parklet 1 design should include furniture, seating, and design elements to allow for principle use of outdoor dining
- Parklet 2 design should include furniture, seating, and design elements to allow for a more general outdoor public seating use that can easily be converted towards specific uses such as outdoor dining
- All furniture and design elements should be ADA accessible
- Design installation, and material must be safe and durable for outdoor use
- Outdoor elements should include outdoor heaters and coolers, umbrellas, lighting, planters (that can serve as seating potentially), and other elements and features that enhance the parklet

Safety & Marketing Elements*

- Safeguard reflective signs and/or decals that ensure pedestrian safety
- Wayfinding signage and traffic signaling signs
- On-site marketing such as concrete decals, feather flags, etc.

**Safety and Marketing elements are not required but preference will be given to firms that can provide this service or can provide the Town contacts of qualified firms to complete the specified work. Please indicate in your cover letter/executive summary.*

Schedule of Work

- October-December 2021: Design/order parklets and all exterior elements/furnishing
- April 2022: All ordered materials and items must be delivered to the Town of Johnstown

Sample Parklet Designs:

Below are sample designs of parklets that provide a general concept of the aesthetic and layout of the type of parklets the Town of Johnstown is interested in purchasing.

Inquiries:
All inquiries to be directed to Sarah Crosthwaite, Economic Development Manager, scrothwaite@townofjohnstown.com.

Submittal Format:
Interested firms are to provide the Town with a thorough proposal. Please include the following, at minimum:

- Cover letter/executive summary
- Parklet Product sheet
    - Costs including transportation/freight
    - Lead time
    - Product dimensions and weight
    - Material samples, options, and renderings
- Outdoor Furniture & Design Product Sheet
    - Costs including transportation/freight
    - Lead time
    - Product dimensions and weight
    - Material samples, options, and renderings
- Safety & Marketing Product Sheet
    - Costs
    - Lead time
    - Product dimensions and weight
    - Material samples, options, and renderings
- Form: PDF
- Please ensure your submission files are labeled properly. [ex. Downtown Johnstown Parklet – *FIRM NAME*]

Submission:
Provide PDF's of your proposal no later than **Friday, October 15, 2021 at 5 PM (MT)** to:
Sarah Crosthwaite, Economic Development Manager; scrosthwaite@townofjohnstown.com
Use Subject Line: Downtown Johnstown Parklet – *FIRM NAME*

Award Process:
The Town will select and notify the firm no later than Friday, October 22, 2021.

General:
This RFP does not commit the Town to award a contract nor pay any costs incurred in the preparation of the RFP response. The Town reserves the right to extend the deadline, accept or reject any or all proposals received, negotiate with any qualified firm, and/or cancel or modify this RFP without notice or penalty.

The Town reserves the right to review and approve/disapprove of all key staff and sub-consultant substitutions or removals, and may consider such changes not approved to be a breach of contract.

MODSTREET

PROPOSAL

TITLE:

Downtown Johnstown Parklet Project

SUBMITTED: October 15, 2021

Address:
MODSTREET
736 Main Ave, STE A
Durango, CO 81301

Contact:
Roger Zalneraitis, CEO
970-749-3399
roger@modstreet.co

MODSTREET

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   B. Lead time
   C. Product dimensions and weight
   D. Material samples, options, and renderings

IV. Safety & Marketing Product Sheet
   A. Safety
   B. Signage
   C. Material samples and options

V. MODSTREET Marketing Flyer

I. COVER LETTER/EXECUTIVE SUMMARY

October 12, 2021

MODSTREET
736 Main Ave Suite A
Durango, CO 81301

MODSTREET is proud to submit the following proposal to help enrich the downtown of Johnstown, Colorado for its businesses, residents, and visitors. We applaud your city's progressive vision and believe that our high quality, steel-fabricated modular parklets will provide a long lasting, safe and attractive setting for your 17,000 citizens to enjoy in your inviting downtown corridor.

Founded and headquartered in Durango, Colorado, we know the importance of downtown to a community's character. We created MODSTREET to meet the needs of communities such as Johnstown that want to help strengthen their businesses and reimagine their downtown streetscape. Our product is unique, in that we were one of the first companies in the United States to create parklets specifically for outdoor retail, restaurant, and hospitality use.

MODSTREET is a proud member of multiple downtown, restaurant, and lodging associations such as Downtown Colorado Inc here in Colorado. We have the ability to leverage the capacity, knowledge, and experience of regional and local partnerships to help share resources and create a huge impact for places through creative ideas and placemaking initiatives.

MODSTREET has found a niche in entrepreneurial problem-solving for places that are looking to create options for social gathering of people in places originally built for cars. With the pandemic, our company has helped businesses and local governments in places such as Arvada, Berthoud, and Golden in the Denver Metro area, and Alamosa, Grand Junction, and Pueblo across the state to strengthen the core of each community. We will be an excellent partner for Johnstown to help enhance your downtown's resiliency and "rethink the horizontal space" in your downtown core.

Our parklets are modular, and thus simple to design, install, disassemble and customize. MODSTREET parklets are easy to level on any street surface and will keep all patrons safe being elevated from vehicular traffic. Multiple connectors allow for ala carte options to be added at any time by simply clicking into place. Additional options such as enclosures and shade

canopies can be provided to create an all-season, all-weather outdoor area for people to enjoy. There is also the option to purchase add ons, such as bar tops and planters.

Enclosed you will find our bid responding to your request for downtown parklet spaces. We are providing a proposal for two (2) 8ft x 24ft parklets for Johnstown. These will take up two parking spaces in your downtown and could be added on to in the future. The proposal includes 4" wire mesh paneling on three sides, and furniture as well for residents and customers alike. The proposal also comes with a two (2) year limited liability warranty on the parklets. The parklets size could be adjusted to ensure that they fit within one parking space.

The total cost, including shipping, is as follows:

Two 8ft x 24 ft parklets with ADA ramps:	$54,801
Furniture for 1 dining oriented parklet:	$7,925
Furniture for 1 general public outdoor space parklet:	$9,268
Total cost:	$71,994

MODSTREET is also offering vertical reflectors for safety on the parkelts, 1,300 pound box planters for accident control, and custom signs at additional charges. These additional items are discussed in the attached proposal.

Finally, we recognize that these parklets will be for public use. MODSTREET has been working with a company to utilize a QR code where multiple restaurants could be listed for ordering meals. If we are awarded the bid, we would be happy to talk to Johnstown about utilizing this QR code in the parklets. There would be no additional charge to Johnstown for the application of the MODSTREET QR code to the parklets.

Thank you for this opportunity to help enhance the resiliency of downtown Johnstown. MODSTREET looks forward to delivering best-in-class parklets to your community, and establishing a strong and lasting relationship with you, your businesses, and your residents.

Sincerely,

Roger Zalneraitis, CEO

MODSTREET
736 Main Ave, STE A, Durango, CO | roger@modstreet.co | 970-749-3399

MODSTREET

II. PARKLET PRODUCT SHEET

A. Costs including transportation/freight:

The total cost for two (2) 8ft x 24ft parklets is $54,801. This includes shipping and one ramp for each parklet for ADA compliance. Shipping will be $1,800 of this total cost. This cost does not include installation. If desired by Johnstown, MODSTREET can provide an installation team onsite for an extra charge. Alternatively, MODSTREET could provide remote instruction on installing the product at no additional cost to Johnstown.

Additionally, MODSTREET has been working with a tech firm in Florida to develop a QR code that could host multiple restaurants and their menus for remote ordering. This QR code will fit very well with a public parklet program such as the one Johnstown is proposing. This QR code will be available to Johnstown at no additional charge, and is included in this bid for your consideration.

B. Lead time:

MODSTREET will deliver parklets to Johnstown between 10 to 12 weeks after the contract has been awarded, and terms and conditions have been signed.

C. Product dimensions and weight:

MODSTREET proposes two (2) 8x24 parklets for Johnstown. Each parklet will take up one parking space, and because of the clip system and modular nature of our parklets, each one can be added to in the future if desired by Johnstown.

MODSTREET parklets consist of individual 4’ x 8’ decks that can be expanded through the purchase of additional decks. The total parklet dimensions are slightly larger due to the panels being located on the outside of each deck. Therefore, each parklet will be 8’ 8” wide by 26” 4” long. If this is too long for a parking space, MODSTREET can reduce the parklet by one deck to make it 8’ 8” wide by 22’ long. This would result in a slightly lower cost for Johnstown as the amount of material would be less for these dimensions.

The weight of each parklet is 2,540 pounds. The parklets are modular in nature and can be assembled and disassembled in an hour or less. The heaviest piece of any parklet is the 4’ x 8’ deck, which weighs about 260 pounds, and requires at least two people to move.

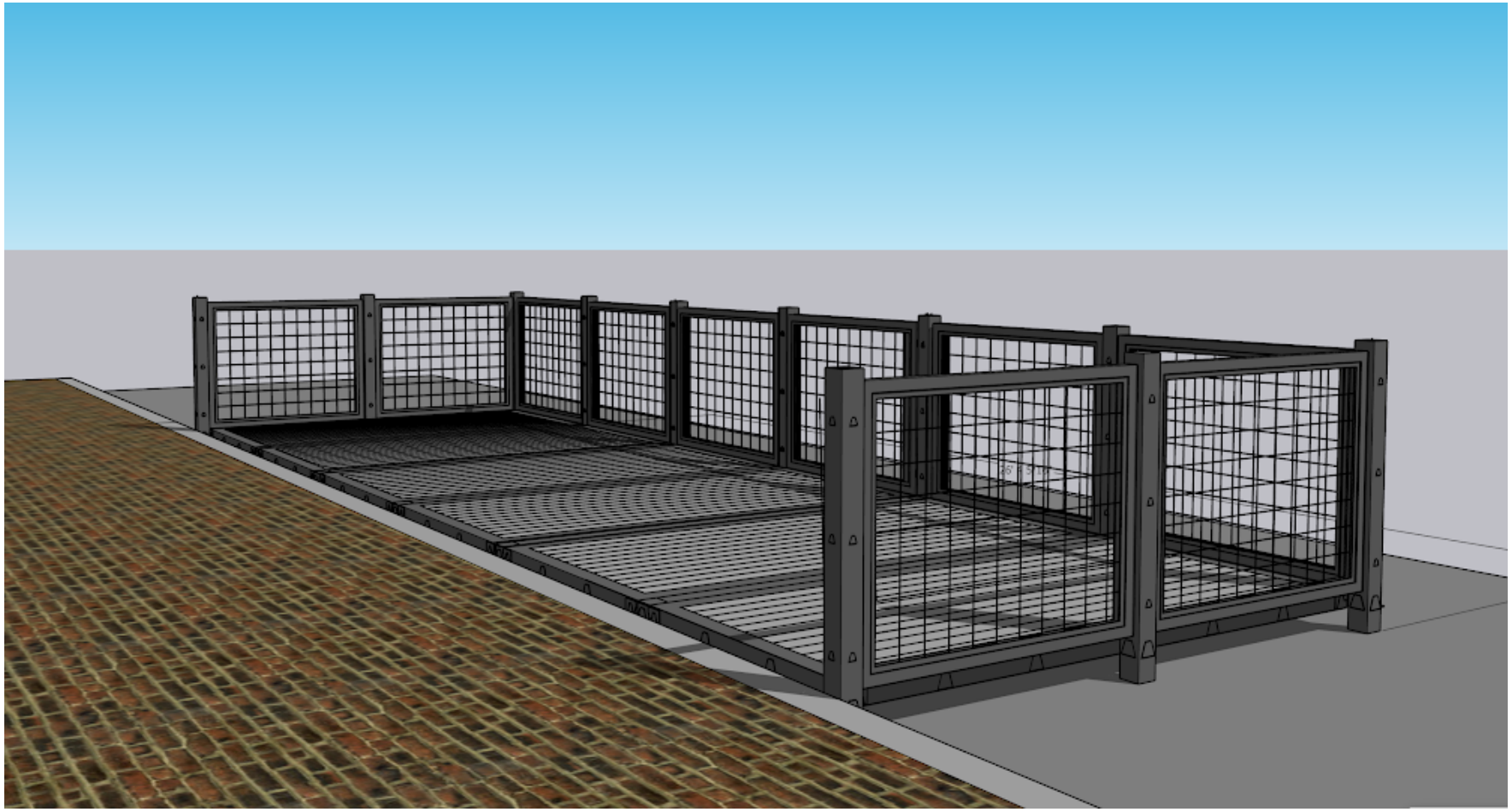
D. Material samples, options, and renderings:

All MODSTREET products are steel fabricated and powder coated. There are a variety of powder coating colors to choose from for Johnstown. MODSTREET products also come with Deckorators Voyage decking material that is slip resistant and warrantied. There are five different colors of deck material that can be selected by Johnstown as well.

MODSTREET is proposing a 4” wire mesh insert for the paneling choice for the Johnstown project. This will provide the parklets with an open feel for the town and customer alike.

Sample renderings and photos of MODSTREET products are included on the next page. The photos include examples of our 8’ wide parklets with furniture on them, and the wire mesh option as well.

Parklet Rendering 1:

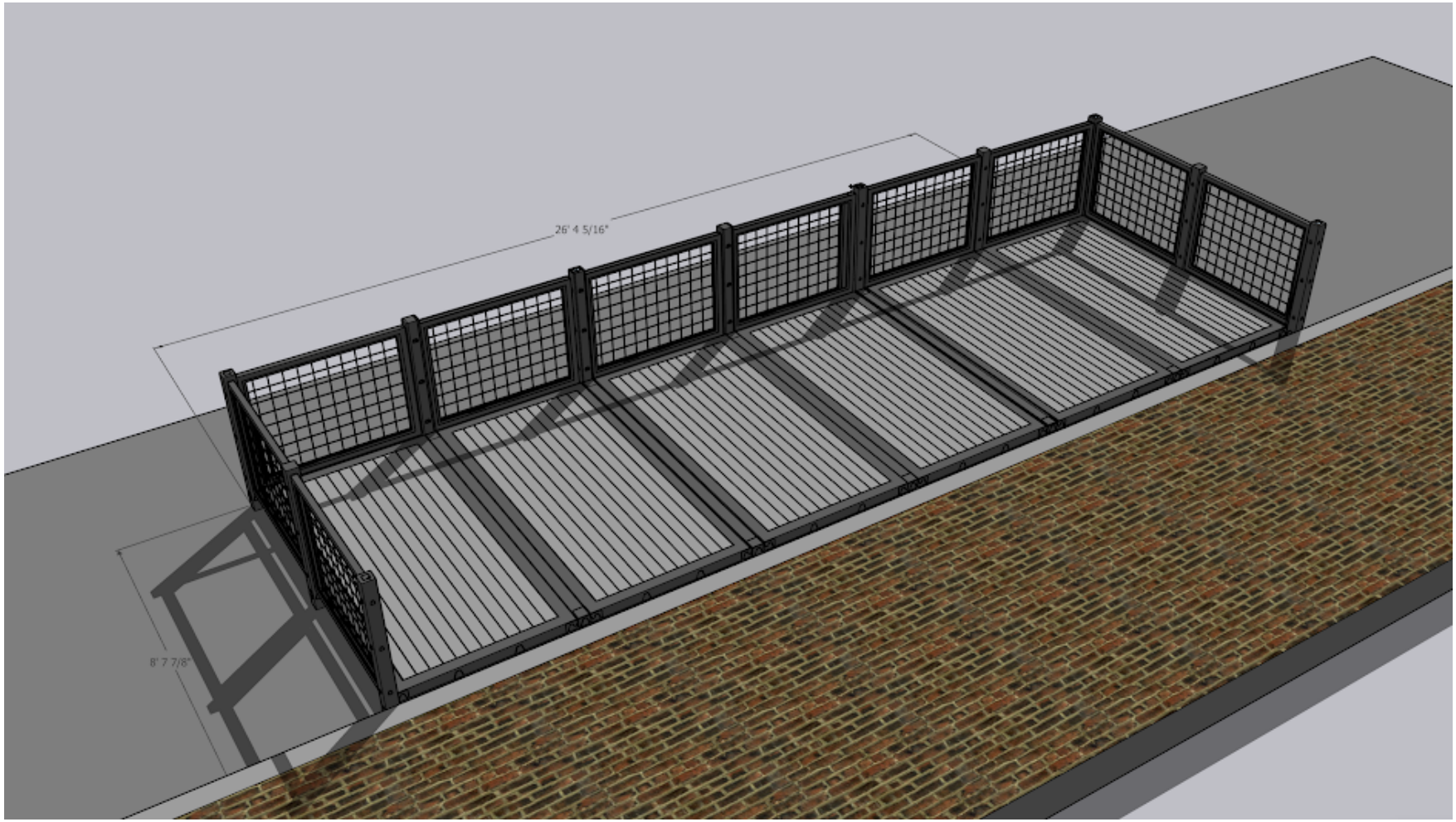


MODSTREET
736 Main Ave, STE A, Durango, CO | roger@modstreet.co | 970-749-3399

Parklet Rendering 2:

MODSTREET
736 Main Ave, STE A, Durango, CO | roger@modstreet.co | 970-749-3399

Parklet Rendering 3:



MODSTREET
736 Main Ave, STE A, Durango, CO | roger@modstreet.co | 970-749-3399

Samples:

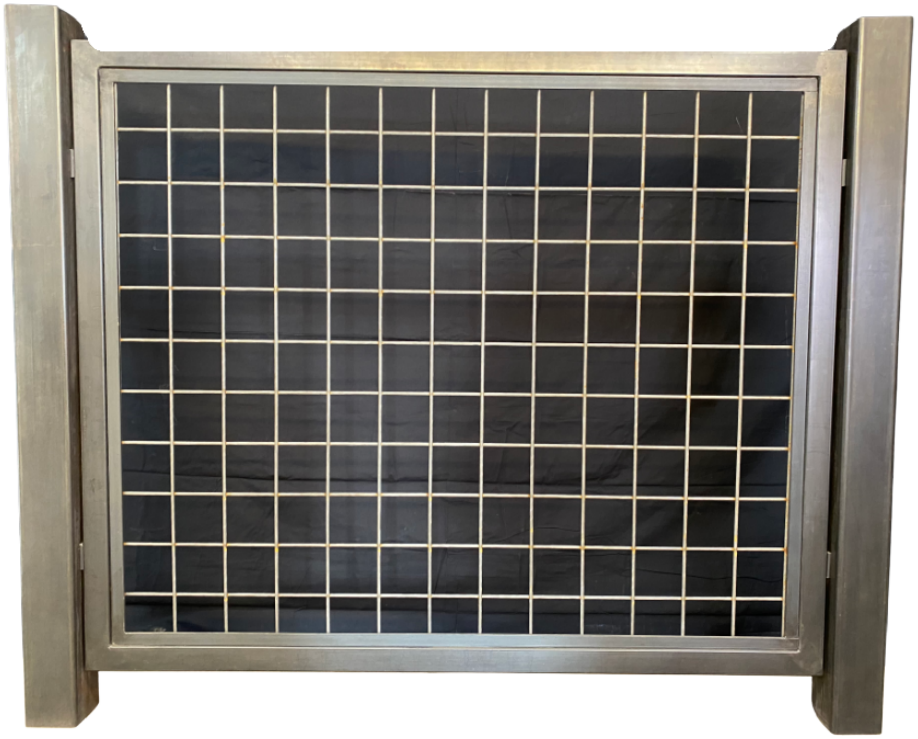
8' wide x 40' long MODSTREET Parklet with umbrellas in Olde Town Arvada, CO

5' wide and 25' long parklet in Olde Town Arvada, CO (Location 2)

MODSTREET
736 Main Ave, STE A, Durango, CO | roger@modstreet.co | 970-749-3399

Parklet Samples (cont'd):

MODSTREET 4" wire mesh inserts with bar top at Gemini Beer Co., Grand Junction, CO



4" wire mesh insert

MODSTREET

III. OUTDOOR FURNITURE & DESIGN PRODUCT SHEET

A. Costs including transportation/freight:

MODSTREET has partnered with Streetscapes of Denver, Colorado to offer a furniture package for each parklet. Per the request of Johnstown, one parklet will be configured primarily for outdoor dining, while the second one will be configured to serve as a public space with benches, planters, and adirondack chairs for relaxation. The furniture is designed to match the look and feel of the parklets for an aesthetically harmonious atmosphere for residents, visitors, and customers.

The dining parklet will have 12 seats, 3 tables, and umbrellas for shade. The second parklet will have 2 adirondack chairs, 2 planters for flowers, and 2 ratio benches for sitting and resting.

The total cost, including transportation and freight, for this furniture package is $17,193.

B. Lead time:

The lead time for the furniture will commensurate with the parklets, roughly 10-12 weeks. All products will be installed and ready for the spring of 2022.

C. Product dimensions and weight:

The total furniture weight is 881.7 pounds. The weight for the dining parklet is 463.5 pounds and the weight for the general public outdoor space parklet is 418.2 pounds.

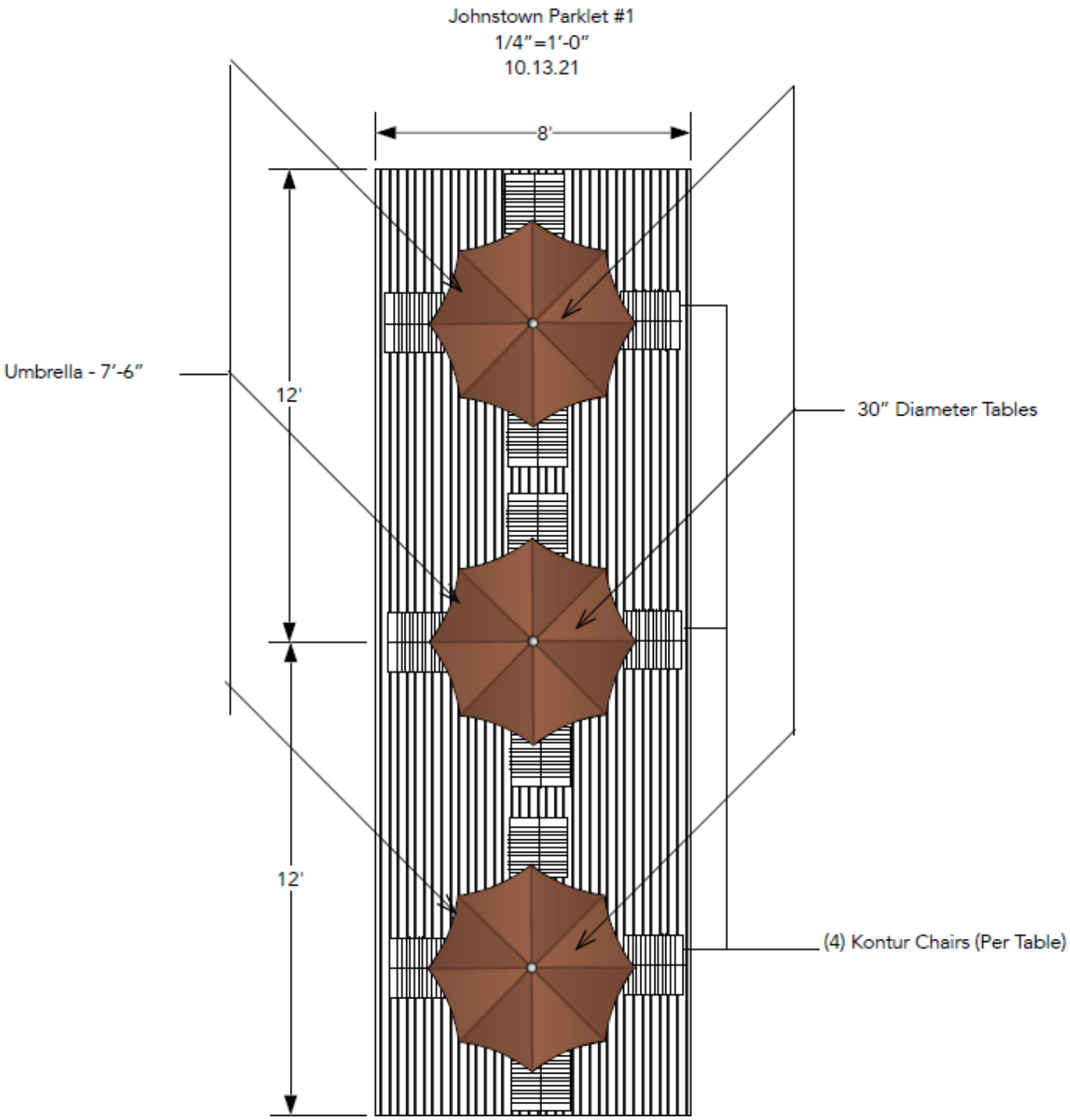
For the **dining parklet**, each chair weighs 14 pounds and is 30.5” high x 19.5” wide x 19.5” deep. The chairs stack 10 high and the total weight for the 12 chairs is 168 pounds. Each table weighs 26.5 pounds, and the dimensions are 32” diameter x 29.5” high. The total weight for the three tables is 79.5 pounds. The umbrellas and their stand weigh 72 pounds, and their dimensions is a 7.5 foot octagon when fully extended. The total weight for the three umbrellas is 216 pounds.

For the **general public outdoor space parklet**, the adirondack chairs weigh approximately 25 pounds each. The two traditional chairs have dimensions of 36.7” high x 35.2” deep x 30.7” wide. The two ottoman chairs have dimensions of 35” high x 66” deep by 30” wide. The total weight of the 4 adirondack chairs is approximately 80 pounds. The ratio benches each weigh 94.1 pounds, and the dimensions are 32.75” high x 24.25” deep x 77” wide. The total weight of the 2 ratio benches is 188.2 pounds. Finally, the planters weigh 70 pounds each, and the dimensions are 24” high x 18” deep x 72” wide. The total

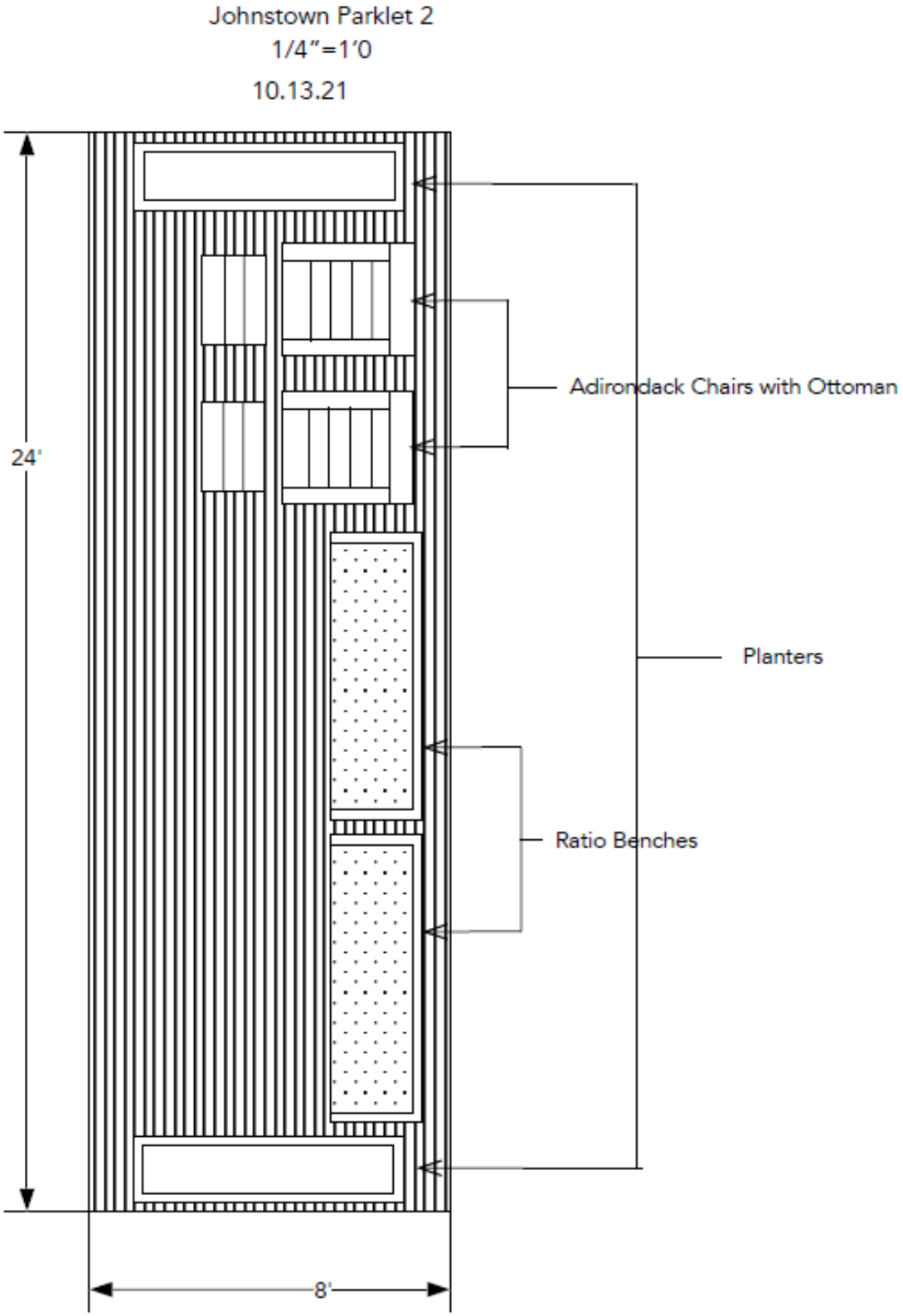
weight of the 2 planters is 140 pounds. The planters will weigh significantly more when fully loaded with dirt, plants, and water.

D. Material samples, options, and renderings:

Furniture Rendering Parklet #1:



Furniture Rendering Parklet # 2:



Furniture Options & Samples:

Displayed: **GREENWICH #864CAM-PBA**
11' Octagon Frame - Pacific Blue 9 oz. Marine Grade Acrylic Fabric

AVAILABLE FRAME SIZES

845CAM: 7.5' OCTAGON

HEIGHT: 94" **:A**
CLEARANCE: 71" **:B**
UPPER POLE: 63" **:C**
LOWER POLE: 37" **:D**
MAST DIAMETER: 1.5"
WEIGHT: 17 lbs.

854CAM: 9' OCTAGON

HEIGHT: 108" **:A**
CLEARANCE: 76" **:B**
UPPER POLE: 69" **:C**
LOWER POLE: 37" **:D**
MAST DIAMETER: 1.5"
WEIGHT: 22 lbs.

864CAM: 11' OCTAGON

HEIGHT: 108" **:A**
CLEARANCE: 83" **:B**
UPPER POLE: 77" **:C**
LOWER POLE: 37" **:D**
MAST DIAMETER: 1.5"
WEIGHT: 24 lbs.

454CAM-SQ: 6.5' SQUARE

HEIGHT: 100" **:A**
CLEARANCE: 87" **:B**
UPPER POLE: 69" **:C**
LOWER POLE: 37" **:D**
MAST DIAMETER: 1.5"
WEIGHT: 15 lbs.

864CAM-SQ: 7.5' SQUARE

HEIGHT: 108" **:A**
CLEARANCE: 86" **:B**
UPPER POLE: 77" **:C**
LOWER POLE: 37" **:D**
MAST DIAMETER: 1.5"
WEIGHT: 21 lbs.

Furniture Samples (cont'd):

Cambi #803

Designer: Aldo Ciabatti

Quick Ship Finishes:

20 Glossy Aluminum | 22 A/Iron | 24 A/Black | 41 A/Bronze | 75 A/Dark Green

Special Order Ship Finishes:

23 A/White | 37 A/Moss Grey | 50 A/Cherry | 60 A/Green

DETAILS

H	BW	TS	Lbs
29.5"	26"	32" Dia"	26.5

Outdoor/Indoor Umbrella Table

Umbrella Hole Dia. 1 9/16"

E-coated powder coat finish

Top Thickness: 1 1/4"

Top: Extended Steel Mesh

Base: Tubular Steel Legs

Assembly Required: Yes

SHIPPING

Master Pack Quantity: 1

Master Pack Dimensions: 32"x33"x5"

Master Pack Weight: 27 Lbs.

Density: 9

Master Cartons/Pallet: 15

Freight Class: 100

FOB: PA 17042

emuamericas LLC
T:(800) 726-0368
emuamericas.com

emu Contract

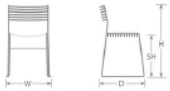
Aero #027

Designer: Paul Newman

Special Order Ship Finishes:

22 A/Iron | 23 A/White | 24 A/Black

DETAILS



H	W	D	SH	Lbs
30.5"	19.5"	19.5"	18"	14

Outdoor/Indoor Stacking Side Chair

E-coated powder coat finish

Frame: Wrought Iron

Seat/Back: Steel Slats

Stackability: 10

SHIPPING

Master Pack Quantity: 2

Master Pack Dimensions: 21"x20"x33"

Master Pack Weight: 31 Lbs.

Master Cartons/Pallet: 8

Freight Class: 250

FOB: PA 17042

emuamericas LLC
T:(800) 726-0368
emuamericas.com

emu Contract

RATIO™ BENCH

PRODUCT DATA

RATIO™ BENCH

PRODUCT DATA

The **Ratio Bench** combines durable materials, superb detailing and a clean, sculptural design that's at home in a wide range of architectural settings. The aluminum frame includes integral armrests that curve gently outwards, giving Ratio an open, welcoming appearance. Seats are corrosion-resistant stainless steel and may be specified in stainless steel finishes or powdercoat colors. Available in backed and backless versions, the Ratio Bench's understated sophistication makes it ideal for corporate campuses, universities, museums, libraries and other high-visibility environments.

MATERIAL & CONSTRUCTION DETAILS

INSTALLATION & MAINTENANCE

FRAME	SEAT	ARMRESTS	INSTALLATION	MAINTENANCE
• Frame is made of corrosion-resistant solid formed aluminum with powdercoat finish. • See the Forms+Surfaces Powdercoat Chart for details. Custom RAL colors are available for an upcharge.	• Seats are formed from stainless steel with .25" x .90" obround perforations applied in an offset pattern. • Seats available in two standard stainless steel finishes, Sandstone and Satin, or powdercoat. • See the Forms+Surfaces Powdercoat Chart for details. Custom RAL colors are available for an upcharge.	• All benches have two armrests that are integral parts of the frame end pieces.	• Ratio Benches can be freestanding or surface mounted. Surface mounted models include anchors and stainless steel mounting screws.	• Metal surfaces can be cleaned as needed using a soft cloth or brush with warm water and a mild detergent. Avoid abrasive cleaners.

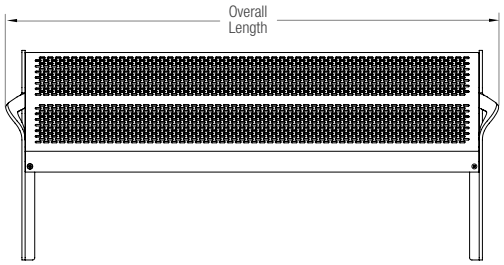
STAINLESS STEEL SEAT FINISH OPTIONS

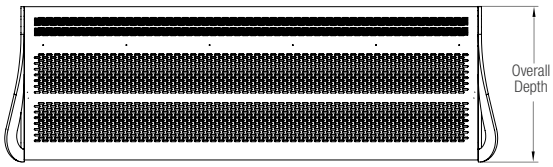
Sandstone is a High-Durability finish, designated by the "HD" logo below, and is manufactured in a process that creates a work-hardened surface with enhanced resistance to abrasion and wear.

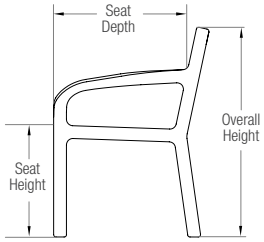
SANDSTONE

SATIN

NOMINAL DIMENSIONS







MODELS	OVERALL LENGTH	OVERALL DEPTH	SEAT DEPTH	OVERALL HEIGHT	SEAT HEIGHT	WEIGHT
SBRAT-72BSS	77.0" (1956 mm)	24.25" (616 mm)	17.6" (447 mm)	32.75" (832 mm)	16.9" (429 mm)	94.1 lbs (42.7 kg)
SBRAT-72BPC	77.0" (1956 mm)	24.25" (616 mm)	17.6" (447 mm)	32.75" (832 mm)	16.9" (429 mm)	94.1 lbs (42.7 kg)

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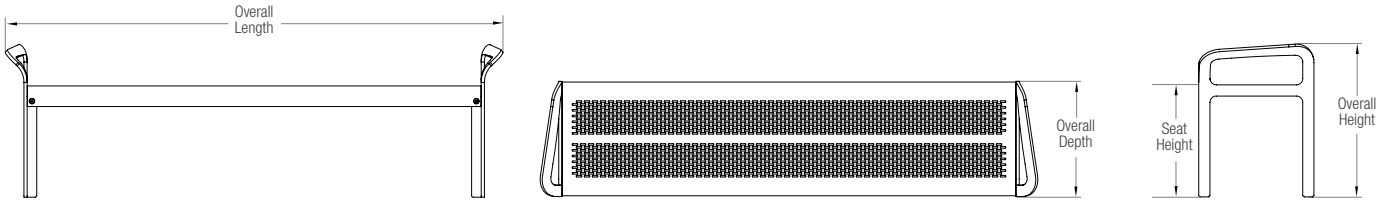
RATIO™ BENCH

PRODUCT DATA

NOMINAL DIMENSIONS (Continued)



MODELS	OVERALL LENGTH	OVERALL DEPTH	OVERALL HEIGHT	SEAT HEIGHT	WEIGHT
SBRAT-72NSS	77.82" (1977 mm)	18.0" (457 mm)	23.85" (606 mm)	17.4" (442 mm)	67.1 lbs (30.4 kg)
SBRAT-72NPC	77.82" (1977 mm)	18.0" (457 mm)	23.85" (606 mm)	17.4" (442 mm)	67.1 lbs (30.4 kg)

ENVIRONMENTAL CONSIDERATIONS

- Please refer to the Ratio Bench Environmental Data Sheet for detailed environmental impact information.
- Ratio has up to 84% recycled content and is fully recyclable.
- Standard powdercoat finishes are no-VOC; non-standard powdercoat finishes are no- or low-VOC, depending on color.
- Low maintenance.
- Easy to disassemble.

MODEL NUMBERS AND DESCRIPTIONS

MODEL	DESCRIPTION
SBRAT-72BSS	Ratio Bench, backed seat with stainless steel finish
SBRAT-72BPC	Ratio Bench, backed seat with powdercoat finish
SBRAT-72NSS	Ratio Bench, backless seat with stainless steel finish
SBRAT-72NPC	Ratio Bench, backless seat with powdercoat finish

PRODUCT OPTIONS

The following options are available for an upcharge

Premium Texture Colors from Forms+Surfaces Powdercoat Chart
Custom RAL powdercoat color

LEAD TIME: 6 to 8 weeks. Shorter lead times may be available upon request. Please contact us to discuss your specific timing requirements.

PRICING: Please contact us at **800.451.0410** or **sales@forms-surfaces.com**. At Forms+Surfaces, we design, manufacture and sell our products directly to you. Our sales team is available to assist you with questions about our products, requests for quotes, and orders. Territory Managers are located worldwide to assist with the front-end specification and quoting process, and our in-house Project Sales Coordinators follow your project through from the time you place an order to shipment.

TO ORDER SPECIFY: Quantity, model, powdercoat color for frame, stainless steel finish, or powdercoat color for seat, surface mount or freestanding. Quote/Order Forms are available on our website to lead you through the specification process in a simple checkbox format.

NOTE: Because different computers, monitors and printers render colors differently, actual colors will vary slightly from those shown here.

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Furniture Samples (cont'd):

STREETSCAPES
STREETSCAPES.BIZ
1400 Sixteenth St., Suite 400 • Denver, Colorado 80202 • 303.475.9262

3030226

Project Name

Downtown Johnstown Parklet Project

Barriers

Sarah Crosthwaite
Town of Johnstown
450 S. Parish Ave
Johnstown, CO 80534
970 578-9612
scrosthwaite@townofjohnstown.com

Receiving Address

Johnstown, CO 80534

Project Notes

Subtotal	MP	Consulting	Fees	Insurance	Installation	Est. Freight
$1,164.00						$150.00

Product	Item	Qty	Model | Mfg | Finish	Description
	01	2	AC-FBT OW	Adirondack Fan Back Chair - Traditional Construction - Recycled Composite Standard Frame Colors - Black or Teak Standard Slat Colors - Twenty One Dimensions - 30-5/8"W x 35-1/8"D x 36-5/8""H Seat Height - 14-5/8"H
	02	2	ACO OW	Adirondack Fan Back Chair Ottoman Construction - Recycled Composite Standard Frame Colors - Black or Teak Standard Slat Colors - Twenty One Dimensions - 24"W x 17.06"D x 14.40"H

Wilshire Collection

Materials: **FRP Fiberglass and Lightweight GFRC Concrete**

The Wilshire Collection is nothing fancy - straight walls and a slight reveal. Put several of them together and it creates a highly effective way to configure space using live plants. The elegant straight lines disappear, emphasizing the plant, as it should be. Available in FRP fiberglass and lightweight GFRC concrete, in a huge range of sizes.

- Lightweight FRP fiberglass and GFRC are designed to be durable despite low weight - even for heavy-traffic locations
- Coordinates with our self-watering container irrigation products
- Metallic FRP finishes will naturally weather over time, like metal containers
- Round, square and rectangular sizes from 18" to 120", with customization available
- Matching ash, trash and recyclers available

Tournesol SITEWORKS

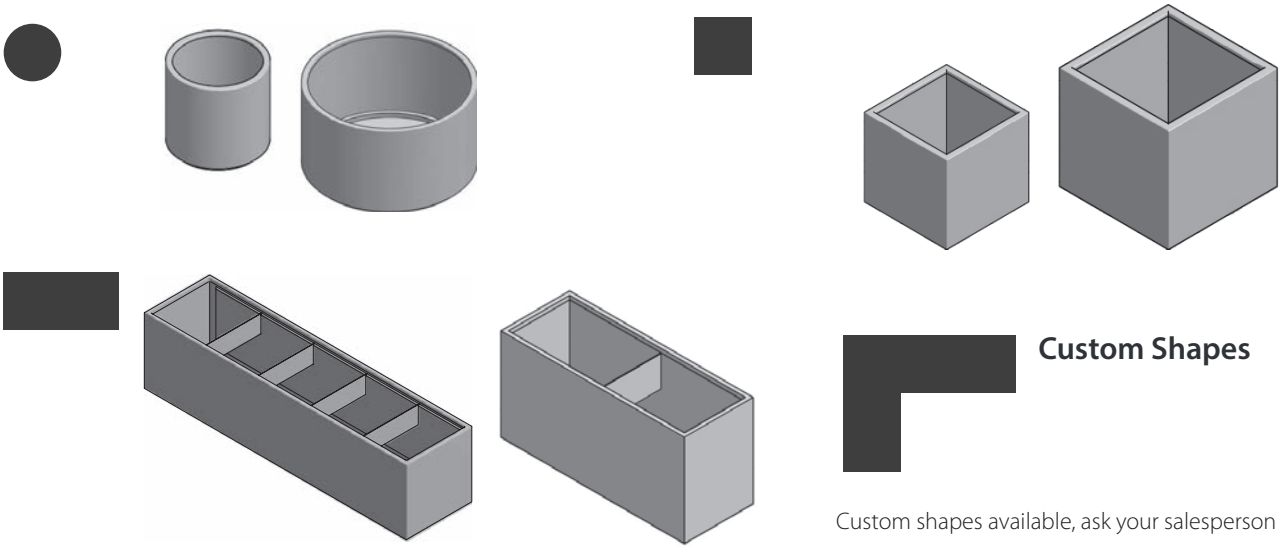
PRODUCT & PRICING INFO CONTACT

STREETSCAPES

STREETSCAPES.BIZ

Info@streetscapefurniture.com ■ 303.398.704

Wilshire Collection Shapes



Custom Shapes

Custom shapes available, ask your salesperson for details.

Wilshire FRP and GFRC Planter Options

There are as many different planter applications as there are architects to design them. At Tournesol Siteworks, we have a series of standard modifications and adjustments to create what you need.

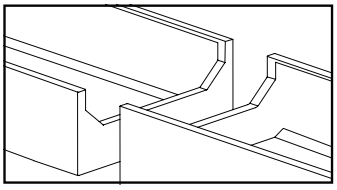
Cast-in Accessory Pockets

Tournesol Siteworks can customize a standard planter with pockets to hold lighting, audio, electrical, or junction boxes. We can cast in sliding or swinging doors, creating hidden spaces for irrigation controls or storage access.

Cast-in Accessory Pocket. Insert light housing. Finished product.

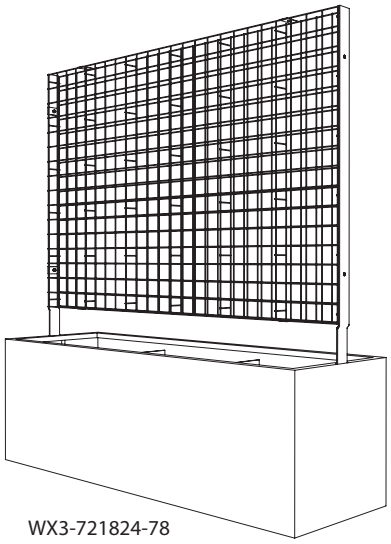
Scoop

Scoop is a feature added to Wilshire Collection planters that allows multiple individual modular units to appear to form a continuous planting area. Adjacent planter walls are lowered and may be sealed in the field with the recommended Scoop Connection Kit, which allows for a continuous layer of soil and planting above.

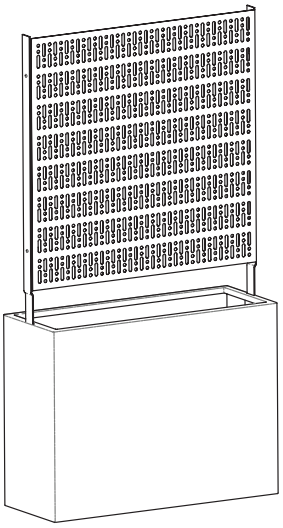


Wilshire Collection - Complementary Planters

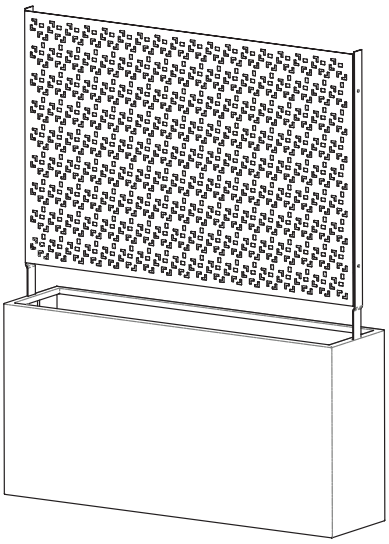
The versatile Wilshire Collection has several complementary products. The **Wilshire Screen** combines a rectangular planter and VertiGreen trellis to create attractive, easy-to-install solutions for screening off unsightly views. Use our laser cut metal panels to create a wind screen or privacy panel. Available in FRP and lightweight GFRC, with a range of sizes, colors, and screen sizes. See the Wilshire Screen detail sheet for more information.



WX3-721824-78



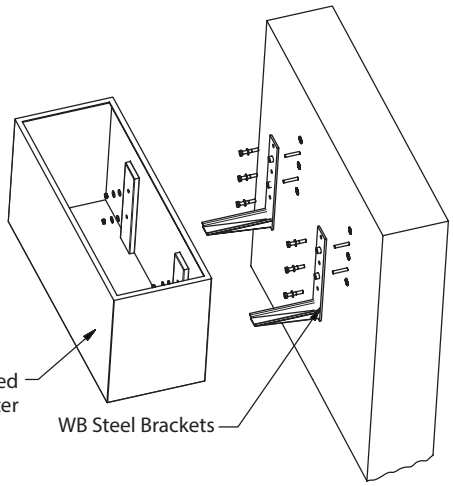
WX-481836-90C
With WXS-4848 Pattern #6



WXP-721836-90C
With WXS 7248 Pattern #7

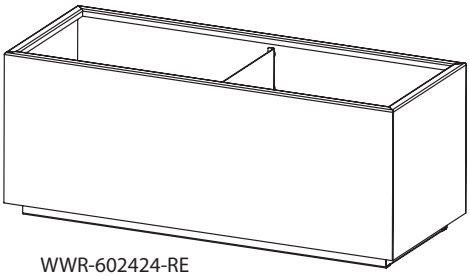
Wilshire Box Hanging Planters

A complete commercial-quality hanging planter system with a lightweight fiberglass box, pre-engineered brackets and easy-to-use mounting template. This hanging planter is available in 3 size ranges up to 120"L. The simple styling works with most building types, and highlights the plants rather than the planter. Can be used with the VertiGreen® 3D trellis or any other plant support. See the Wilshire Box detail sheet for more information.



Wilshire Steel Collection

The natural richness of non-corroding weathering steel is now available with the quality, range of standards and custom sizes that you come to rely on from Tournesol Siteworks. See the Wilshire Weathering steel detail sheet for more information. Also available in Powder-coated mild steel.



WWR-602424-RE

Tournesol SITEWORKS

MODSTREET

IV. Safety & Marketing Product Sheet

MODSTREET is prepared to offer the following safety and signage features, at additional cost, for the Johnstown Parklet project:

A. Safety

MODSTREET will add vertical reflectors on the streetside corner of each parklet. There will be two (2) vertical reflectors on each parklet, on the side facing the street, to serve as a safety feature to reduce the potential for vehicular accidents. The cost for these vertical reflectors will be $200 per parklet, or a total of $400 total. A sample of the vertical reflectors that will be used is included after this section.

MODSTREET will also offer standalone box planters that are 45 inches long, 20 inches wide, and 28 inches high. When fully loaded with dirt and watered, these planters can weigh up to 1,300 pounds and provide a significant and aesthetically attractive safety enhancement for your downtown. The cost of each planter is $1,500, or $3,000 total for two. A vertical or horizontal reflector could also be added to each planter, at a cost of $50 per reflector. We recommend putting these planters on the side of each parklet facing oncoming traffic, to serve as a significant barrier that will prevent cars from hitting the parklet directly. A picture of our box planters is also attached below.

B. Signage

Finally, MODSTREET will offer custom signage for each parklet. These signs will be sheet metal and powder coated, and inserted into a panel in each parklet, with a custom sign that is plasma cut for the town. An example could be the town logo, with the words “public parklet” written below it. These custom signs will be $250 a piece, or $500 for two custom signs (one for each parklet). A sample of MODSTREET’s custom sign work from Arvada, Colorado is also included on the next page.

MODSTREET
736 Main Ave, STE A, Durango, CO | roger@modstreet.co | 970-749-3399

Safety & Signage Samples:

Sample vertical reflector to be available for Johnstown parklets

MODSTREET box planter, dimensions 45" Long x 20" deep x 28" high, 1,300 pounds when full

MODSTREET sample custom sign, steel fabricated and powder coated

MODSTREET
736 Main Ave, STE A, Durango, CO | roger@modstreet.co | 970-749-3399

MODSTREET

OUTDOOR PARKLETS AND OTHER MODULAR PRODUCTS

REBUILDING AMERICA'S DOWNTOWNS

2020 FOUNDED

256 TONS OF STEEL CUT

888 PANELS WELDED

1853 CONNECTORS CONNECTED

OUR STORY

EVERYTHING WE DESIGN IS DESIGNED IN OUR OFFICE DOWNTOWN ABOVE MAIN AVENUE. EVERYTHING WE MANUFACTURE IS MADE RIGHT DOWN THE STREET. WE BELIEVE IN THE POWER OF COMMUNITY!

All of our communities have an amazing opportunity to reshape the fabric of our downtowns by rethinking urban design and bringing the human element back to its core.

Founded and headquartered in Durango, Colorado, we know the importance of downtown to a community's character. We created MODSTREET© to meet the needs of communities that want to help strengthen their businesses and reimagine their streetscapes, during and beyond this pandemic. We provide unique, high quality, flexible, outdoor parklets and other modular products for restaurants, retailers and communities alike.

We envision a bustling Main Street with bike lanes, walking zones with retail, restaurants and other small businesses extending their space into the open air. As our communities get back on track we must think outside the box in order to save our economy. Now is the time to alter an urban planning standard that hasn't been modified since its inception.

FOUNDED AND HEADQUARTERED IN DURANGO, COLORADO

WE KNOW THE IMPORTANCE OF DOWNTOWN TO A COMMUNITY'S CHARACTER

We created MODSTREET to meet the needs of communities that want to help strengthen their businesses and reimagine their downtown streetscape, during and beyond this pandemic.

WHAT WE DO

We provide unique, high quality, flexible, outdoor parklets and other modular products for retailers and communities alike.

MODSTREET was created from a desire to help communities rebuild and rebound from the devastating effects of the pandemic. We keep innovating so we remain flexible and responsive to what businesses and communities need to survive and thrive.

SAFE Our parklets can withstand a collision

EASY Zero Construction, Zero Downtime

MODULAR Add and remove with ease

MODULAR PARKLETS & OTHER PRODUCTS

OUR LATEST PROJECTS

DURANGO, CO
10X30 PARKLET

GRAND JUNCTION, CO
10X20 PARKLET WITH ENCLOSURE

SEASONS OF DURANGO
10X20 PARKLET WITH ENCLOSURE

RAMBLEBINE BREWING
10X20 PARKLET

PRODUCTS

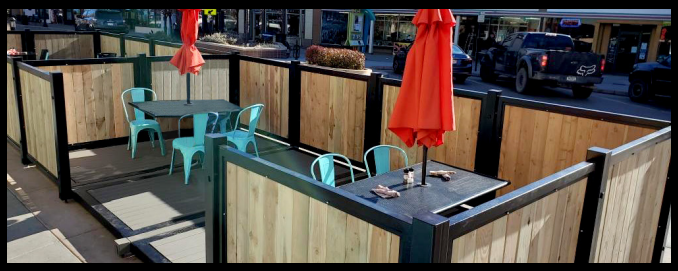
Easy to assemble with ZERO construction and ZERO downtime for your b
Our products are completely modular, and made of raw steel making th

PARKLETS | ENCLOSURES | BARRICADES | & MORE

8x8, 10x10

Our entry level parklet allows for individual customization and incorporation of future elements. This parklet comes in one standard size.

- Any configuration and custom sizes available
- Custom sizes also available
- Strong & Durable
- Fabricated raw low carbon or mild steel
- Assembled/Disassembled without special equipment or tools
- Includes the base and modular posts.
- Simple, and economical.



8x20, 10x20

Transform the street parking and residual roadway into a customizable extension of your business.

- Any configuration and custom sizes available
- Custom sizes also available
- Strong & Durable
- Fabricated raw low carbon or mild steel
- Assembled/Disassembled without special equipment or tools
- Comes with Modular posts for multiple railing options
- Elegant & Durable

8x40, 10x40 or 20x20

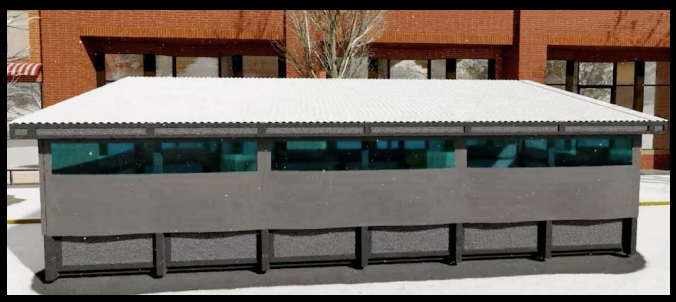
If you would like a fully customized parklet that is as unique as your business then allow us to introduce you to the cream of the crop.

- Any configuration and custom sizes available
- Fully Customizable
- Steel, aluminum, wood, or composite materials.
- Canopy or other roofing options
- Unlimited railing options to compliment your individual style
- Professional design. We will take charge of your project from conception to execution. Contact us for details

BARRICADES

Forget about jersey barriers and event fencing, it is time we beautify special event barricades & partitions and make them as unique as your community.

- Any configuration and custom sizes available
- 5'x3' or 5'x4' panels or your choice
- Strong and durable
- Assembled without special equipment or tools
- Modular posts to connect multiple panels, for a custom length (perfect for parades, concerts or other special events)
- Create 90º Angles
- Low carbon or mild steel



ENCLOSURES

What kind of Colorado company would we be unless we had a solution for cold and inclement weather?

- 10'x10' – 10'x20' – 20' x 20'
- Strong and load bearing
- Raw low carbon or mild steel
- Canvas and plastic covering
- Completely ventilated
- Optional ionized air filtration

GET IN TOUCH

CALL (303) 507-34

736 Main Ave Suite A Durango, CO 81301 info@modstreet.co www.modstreet.co

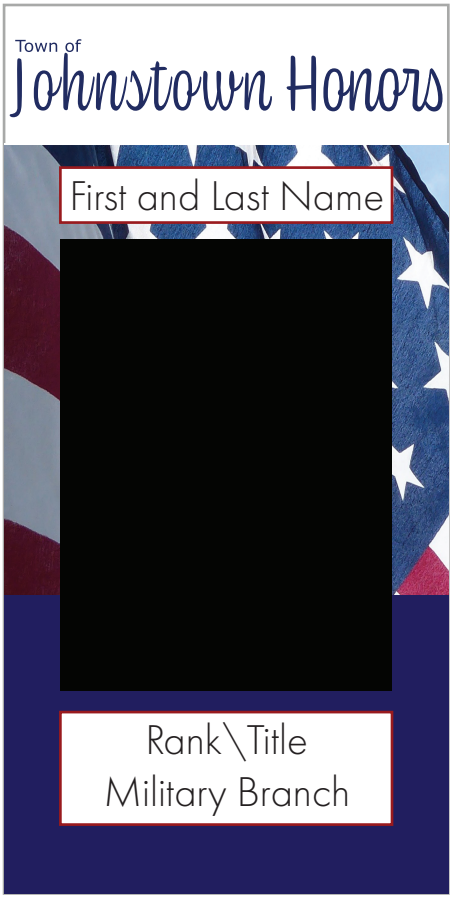
Johnstown Honors Program

A banner program to recognize Johnstown's past and present members of the US Armed Forces.

Applicants (service members OR the service member's family) can apply for a banner honoring their service member who has lived, or currently lives, in the Town of Johnstown. Applicants must be current residents of the Town of Johnstown. The Town of Johnstown will begin receiving applications for this program starting November 11, 2021 and continue until February 4, 2022.

DETAILS

- Banners will be hung in the Old Town Johnstown area as well as the 2534 Johnstown Plaza area
- Johnstown Honors banners will be displayed from Memorial Day through Veteran's Day
- This program will be annual, with the Town of Johnstown sponsoring the first set of banners
- Banner applications will be accepted and hung based on banner space availability (meaning depending on demand, a banner might not be hung in the immediate year of its application)
- Each individual banner will be displayed for 2 years then given to the family of the service member (unless the banner is in well enough condition to be put up for another year)
- All banners, even after their 2 year display period, will be showcased in the Town's 'Johnstown Honors' online gallery



APPLICATIONS

- Applicants can be service members or the family of a service member
- Applicants must currently live in Johnstown
- An Applicant will apply for a banner of their service member to the Town and must provide the following:
    - Applicant state issued ID
    - Service member proof of honorable discharge
    - High quality picture of the service member in uniform
    - Name, rank/title, and branch of the armed forces of the service member
- Banners will be placed in an available location, no specific location request will be accepted.

More Information

Please email or call Jamie Barker
Town Communications Manager
jbarker@johnstownco.gov
970-578-9611

APPLY ONLINE AT
johnstown.colorado.gov/JohnstownHonors | 450 South Parish Ave, Johnstown CO 80534 | 970-587-4664

BEFORE THE EXECUTIVE DIRECTOR, DEPARTMENT OF REVENUE

STATE OF COLORADO

STIPULATION, AGREEMENT, AND ORDER
SA 21-LKWD-57

IN THE MATTER OF:

MDS ENTERPRISES, INC. & 7-ELEVEN, INC.
D/B/A 7-ELEVEN STORE 34238A
50 TELEP AVENUE
JOHNSTOWN, COLORADO 80534

Fermented Malt Beverage Beer Off Premises License No. 04-00265

The State of Colorado, Liquor Enforcement Division ("Division") and MDS Enterprises, Inc. & 7-Eleven, Inc., d/b/a 7-Eleven Store 34238A, 50 Telep Avenue, Johnstown, Colorado 80534 ("Licensee") hereby stipulate and agree as follows:

1. Licensee has been the subject of an investigation conducted by the Division. Agents of the Division allege violations of the Colorado Liquor Code, Sections 44-3-901(1)(b)(I), and 44-3-901(11), C.R.S.

   IT IS ALLEGED THAT:

   A. On July 2, 2021 the Licensee, by and through its employee/agent [redacted] permitted the selling, serving, giving, or procuring of an alcohol beverage (a can of Vizzy Hard Seltzer, Blueberry Pomegranate, fermented malt beverage) to 21WF17722, an eighteen-year-old Liquor Enforcement Division underage purchaser.

   B. [redacted] failed to verify that the consumer was at least twenty-one years of age by requiring the consumer to present a valid identification and who appeared to be under the age of fifty (50).

2. Licensee acknowledges receipt of sufficient notice, advisement of rights, and process of the proceedings and wishes to resolve all issues which were the subject of the investigation, by entering into this Stipulation, Agreement, and Order ("Order").

3. The Division and Licensee have discussed the merits of the investigation and allegations, and they have come to a mutual agreement and understanding to jointly propose to the State Licensing Authority a resolution of the allegations in lieu of proceeding to the issuance by the State Licensing Authority of an Order to Show Cause and conducting a

hearing to determine the merits of such allegations. The terms and conditions of this Order are subject to approval by the State Licensing Authority.

4. Licensee admits the violations as alleged above in paragraph 1.

5. Licensee agrees, in lieu of the issuance of an Order to Show Cause, and subsequent proceedings, to submit to the following sanctions:

   A. A **seven (7) day** suspension of Licensee's **fermented malt beverage beer off premises license** to take place as follows:

      i. License to be actively suspended for **three (3) days** from 12:01 a.m. on **September 17, 2021** until 11:59 p.m. on **September 19, 2021**.

      ii. During any period of active license suspension, Licensee shall post signs on its premises in compliance with Regulation 47-600(F), 1 C.C.R. 203-2.

      iii. **Four (4) days** of the suspension to be held in abeyance for a period of one (1) year, from the date of approval of this agreement by the state licensing authority, pending no further violations of the Colorado Liquor Code, Section 44-3-901(1)(b)(I), C.R.S., during this period.

6. The Licensee has filed a written petition to the Division in accordance with 44-3-601(3), C.R.S. requesting that the Licensee be allowed to pay a fine in lieu of active suspension in paragraph 5(A)(i). The Division finds that the petition supports the following:

   A. That the public welfare and morals would not be impaired by permitting the Licensee to operate during the period set for suspension and that the payment of the fine will achieve the desired disciplinary purposes; and

   B. That the books and records of the Licensee are kept in such a manner that loss of sales of alcohol beverages which the Licensee would have suffered had the suspension gone into effect can be determined with reasonable accuracy.

7. The parties agree that the fine shall be the equivalent of twenty percent (20%) of the Licensee's estimated gross revenues from the sales of alcohol beverages during a period of three (3), except that the fine shall not be less than five hundred dollars ($500.00) nor more than one-hundred thousand dollars ($100,000.00). The parties agree that the average days' sales for the month of **June 2021** shall be the appropriate measure of said estimated gross revenues. Based upon these records, the amount of the fine has been determined to be **$500.00.**

A. Payment of the fine pursuant to the provisions of this agreement shall either be made online at https://secure.colorado.gov/payment/liquor, select Administrative Action Fee or Fine and include the amount listed above or shall be in the form of a **certified check or a cashier's check** made payable to the Colorado Department of Revenue. Said fine shall be paid and mailed to the Department of Revenue, Attn: Liquor Enforcement Division, P.O. Box 17087, Denver, Colorado 80217-0087, on or before **September 3, 2021.**

B. Upon the timely payment of the fine agreed upon in this paragraph, Licensee's three (3) day suspension as set forth in paragraph 5(A)(i) of this stipulation and agreement shall be deemed automatically permanently stayed.

C. If the Licensee fails to make payment in a timely manner as detailed in this paragraph, the full three (3) day suspension shall be served as detailed in paragraph 5.

8. This Order shall be admissible as evidence in future proceedings concerning any alleged violation of this Order. The matters at issue in said future proceeding shall be limited to the question of whether or not Licensee has failed to comply with the terms of this Order. Any issues relating to the underlying complaint or investigation that formed the basis for action against Licensee (and any defenses that Licensee may have to such complaint and investigation) shall specifically not be at issue in the proceeding against Licensee for failing to comply with the terms of this Order. In the event an alleged violation of this Order is taken to hearing and the State Licensing Authority determines that the allegations are proven, or Licensee enters into a stipulation in lieu of hearing in which it admits such allegations, the State Licensing Authority shall, in addition to any other penalty imposed, order Licensee to serve all or any days of suspension presently held in abeyance pursuant to this agreement. In the event an alleged violation of this Order is taken to hearing and the State Licensing Authority determines that the allegations are unproven, then the Division shall take no further action and this Order shall remain operative and in full force and effect.

9. Upon execution by all parties, this Order and all its terms shall have the same force and effect as an order entered after a formal hearing pursuant to § 44-3-601, C.R.S., except that it may not be appealed. Failure to comply with the terms of this Order may be sanctioned by the State Licensing Authority as set forth in §§44-3-103(19)(b) and 44-3-601, C.R.S.

10. Licensee expressly agrees and acknowledges that Licensee has entered into this Order knowingly and voluntarily. Licensee acknowledges that the terms of this Order were mutually negotiated and agreed upon. After the opportunity to consult with legal counsel, Licensee affirms that Licensee has read this Order and fully understands its nature,

meaning and content. Licensee agrees that upon execution of this Order, no subsequent action or assertion shall be maintained or pursued by Licensee asserting the invalidity in any manner of this Order.

11. Upon execution by all parties, this Order shall represent the entire and final agreement of the parties. In the event that any provision of this Order is deemed unenforceable by a court of competent jurisdiction, such provision shall be severed, and the remainder of this Order shall be given full force and effect.

12. Licensee understands and knowingly and voluntarily enters into this Order. Licensee further understands and knowingly and voluntarily waives the following rights:

    A. The right to a formal disciplinary hearing on the merits of the matters forming the basis of this Order and the right to require the State Licensing Authority to meet its burden of proof in a formal hearing;

    B. The right to cross-examine all witnesses against Licensee at a formal hearing;

    C. The right to subpoena witnesses, present evidence and to testify on Licensee's own behalf at a formal hearing;

    D. The right to be represented by counsel of Licensee's own choosing and at Licensee's expense at any stage of this proceeding;

    E. The right to engage in pre-hearing discovery of the State Licensing Authority's evidence; and

    F. The right to appeal this Order.

13. All the costs and expenses incurred by Licensee to comply with this Order shall be the sole responsibility of the Licensee, and shall not in any way be the obligation of the Division.

14. This Order shall be effective on the date approved and ordered by the Executive Director of the Department of Revenue, as the State Licensing Authority. Should the State Licensing Authority reject the terms hereof, Respondent's admissions herein shall be withdrawn, and the matter scheduled for a hearing after issuance of an Order to Show Cause.

15. Upon approval and order of the State Licensing Authority, this Order shall become a permanent part of the record, and shall be open to public inspection and published pursuant to the Division's standard policies and procedures or applicable law.

Michelle Stone-Principato
Digitally signed by Michelle Stone-Principato
Date: 2021.08.11 13:18:34 -06'00'

Michelle Stone-Principato
Division Director
Liquor Enforcement Division

Monte Strotheide
MDS Enterprises, INC. & 7-Eleven, Inc.

Date

8/4/21
Date

APPROVED and ORDERED this _____ day of _____ 2021.

Mark Ferrandino
Digitally signed by Mark Ferrandino
Date: 2021.09.16 08:59:54 -06'00'

Mark Ferrandino
Executive Director/CEO
Department of Revenue
State Licensing Authority

Telecopy or electronic versions of this stipulation which contain telecopy facsimiles of signatures shall be deemed duplicate executed originals of this stipulation. This stipulation may be executed in counterparts and delivered by facsimile, U.S. Mail (or private carrier), or .pdf transmission.

CERTIFICATE OF SERVICE

I hereby certify that a true and accurate copy of the foregoing **STIPULATION, AGREEMENT, AND ORDER** was placed in the United States Mail on _____ _____, 2021, addressed as follows:

MDS Enterprises, Inc. & 7-Eleven, INC. D/B/A 7-Eleven Store 34238A P.O. Box 219088 Dallas, TX 75221 mdstrotheide@gmail.com	Liquor Enforcement Division P.O. Box 17087 Denver, CO 80217-0087 dor_led_legal@state.co.us

By: Alexandra Prichard Digitally signed by Alexandra Prichard Date: 2021.09.27 15:28:33 -06'00'
Allie Prichard

September 14, 2021

The regular meeting of the Glenn A. Jones, M.D. Memorial Library Board was called to order at 7pm as we walked and discussed possible landscaping for the south parking perimeter and west side. Chad Young, Debi Sauer, Jenna Hall, Sheryl Ballard and Director Kristi Plumb were in attendance. Corina Strickland was absent.

The August 2021 minutes were approved. The financial report for August was reviewed and approved as follows:

August beginning balance	$ 315,121.44	Petty Cash beginning balance	$ 1,607.84
Inflow	95,774.82		-0-
Outflow	342,854.93 (325,000 to CO Trust)		-0-
Transfers	-0-		-0-
Ending balance	$ 68,041.33		$ 1,607.84

CO Trust: $ 5,107,317.67

Director's Report:

Artist-in-residence: Allerheiligen sisters (Jeanie York and Julie Ray) share their canning jar collection.

Staff: Marisa Garcia has accepted a position with HPLD and will be leaving September 23rd. Jackie Prado has joined us! Additional staff may need to be hired as needs are assessed and schedules adjusted. October 4th staff will be paid for 5 hours to visit other libraries – focus on 'Maker Space'.

Building: Elemental Landscaping will be submitting plans and a bid for the west side landscaping-missed deadlines will result in monetary penalties. Kristi will consult with the HOA regarding the dead grass (Chad will be verifying exactly which HOA). Brian Benzor of B&M Yardworks, after completing an assessment of the sprinkler system, has begun a 'refresh'. Backflow preventer is leaking and water will need to be shut off to the building for repair-hence, we will need to be closed. During this closure, slated for October 4th, Jack will be changing light bulbs and the fire alarms will be tested.

Milliken: Memorandum of Understanding is complete. Staff will be taking over ALL shifts beginning October 1st. Discussing possible change of hours with LaNette of Mill Haus Coffee

Outreach: Vaccination clinic in both locations on August 26th was attended by 33 people! A second COVID vaccination clinic will be held at the Johnstown location on September 23rd, 10am – 4pm. Story Time Share-a-thon for member library peers will be held on September 23rd at the Johnstown location. Amy Tallent Realtor Team will be hosting, along with our ever-enthusiastic library staff, "Welcome Autumn" at the Johnstown location on Saturday, October 9th, 9am-1pm.

2022 Budget: Discussion continued and budget was finalized with adjustments for additional programming, building upgrades, landscaping and employee benefits (Debi will converse with HR about specifics).

Scheels donated 20 lazer tag guns for Tween fun!

Meeting adjourned at 9:45 pm. Next meeting will be October 19, 2021.

August stats: Johnstown –door count: 5913 circulation: 7827
Milliken – door count: 522 circulation: 650

Respectfully submitted, Sheryl Ballard, secretary

JONES MEMORIAL LIBRARY CASH FLOW REPORT - SEPT 2021			Y-T-D	2021 BUDGET		Notes
BEGINNING CHECKING BALANCE		*$ 68,041.33*	$ -	**$ 20,000.00**	To Date	
INFLOWS	Donations/Grants	$ 300.00	$ 694.45	**$ 3,500.00**		
	Interest	$ 4.10	$ 1,818.47	**$ 60,000.00**		
	Misc Income	$ 83.49	$ 1,841.75	**$ 7,500.00**		
	Investments	*$ -*	*$ -*	**$ -**		
	Town of Johnstown	$ 94,804.75	$ 974,035.49	**$ 1,138,005.00**		
	High Plains Library District	$ -	$ 550,267.28	**$ 550,267.00**		
	Transfer from Reserve Account	$ -	$ 122.95	**$ -**		
INFLOWS TOTAL		*$ 95,192.34*	$ 1,528,780.39	**$ -**		
TOTAL AVAILABLE FUNDS		**$ 163,233.67**		***$ 1,779,272.00***		
OUTFLOWS	Advertising	$ 4,602.00	$ 16,136.00	**$ 22,000.00**		
	Audio/CD -6	$ 242.94	$ 3,994.32	**$ 12,000.00**	105	
	Books - 438	$ 5,113.49	$ 27,841.89	**$ 50,000.00**	2184	Milliken $20.70
	Collection Fees/Bad Debts	$ -	$ -	**$ 2,000.00**		(M - $5000 in bks. HPLD grant)
	Computer Expenses	$ -	$ 1,897.93	**$ 5,000.00**		
	Equipment & Furniture	$ -	$ 13,241.90	**$ 45,000.00**		Milliken - $6829.40
	Insurance, Bldg. Contents	$ -	$ -	**$ 5,000.00**		
	Investments	$ -	$ 1,050,000.00	**$ 684,772.00**		
	Legal Fees/Consulting Fees	$ -	$ 148.00	**$ 10,000.00**		
	Maintenance	$ 4,545.86	$ 31,663.74	**$ 60,000.00**		
	Memberships/Licenses	$ 15.94	$ 452.45	**$ 2,500.00**		
	Outreach/PCC	$ -	$ 7,094.91	**$ 10,000.00**		
	Professional Enrichment	$ 110.20	$ 316.79	**$ 5,000.00**		*Bessie Minor grant
	*Programming/Gifts $845.82	$ 705.58	$ 10,377.93	**$ 15,000.00**		$1,065
	Salaries/Bonuses	$ -	$ 152,417.02	**$ 450,000.00**		
	Subscriptions, Periodicals	$ 148.20	$ 2,463.05	**$ 5,000.00**		
	Supplies, Janitorial	$ 49.07	$ 558.42	**$ 3,000.00**		
	Supplies, Library	$ 445.45	$ 3,600.47	**$ 12,000.00**		Milliken - $281.75
	Telephone	$ 484.13	$ 4,595.79	**$ 8,000.00**		
	Utilities	$ 3,425.17	$ 23,219.06	**$ 40,000.00**		
	Video/DVD - 19	$ 463.31	$ 2,822.50	**$ 10,000.00**	138	Milliken - $14.25
	Worker's Comp.	$ -	$ -	**$ 3,000.00**		**Interior Refresh
	**Capital Improvement	$ 6,330.00	$ 58,748.92	**$ 320,000.00**		$23,436.00
	Transfers	$ -	$ -	**$ -**		**Landscaping
OUTFLOWS TOTAL		$ 26,681.34	$ 1,411,591.09	***$ 1,779,272.00***		$19,727.92
ENDING CHECKING BALANCE		$ 136,552.33				**Mechanical Upgrades
						$15,585.00

						Notes
BEGINNING PETTY CASH BALANCE		$ 1,607.84				
		$ -				
ENDING PETTY CASH BALANCE		$ 1,607.84				
BEGINNING RESERVE ACCOUNT BALANCE		$ -	Y-T-D			
	Interest	$ -	acct. closed			
ENDING RESERVE ACCOUNT BALANCE		$ -				
	COLORADO TRUST INVESTMENT		Y-T-D			
BEGINNING BALANCE		$ 5,107,317.67				
	Income - 0.0182%	$ 76.30	$ 1,765.07			
	Contribution	$ -				
ENDING BALANCE		$ 5,107,393.97				

Town of Johnstown

Building Permit Statistics

September, 2021

Single Family Residential		**Commercial**	
Issued ytd	135	*New Building Issued ytd	13

Other Residential (basements/alterations/additions)		**Other Commercial * (tenant finish/alterations/additions)**	
Issued ytd	131	Issued ytd	25

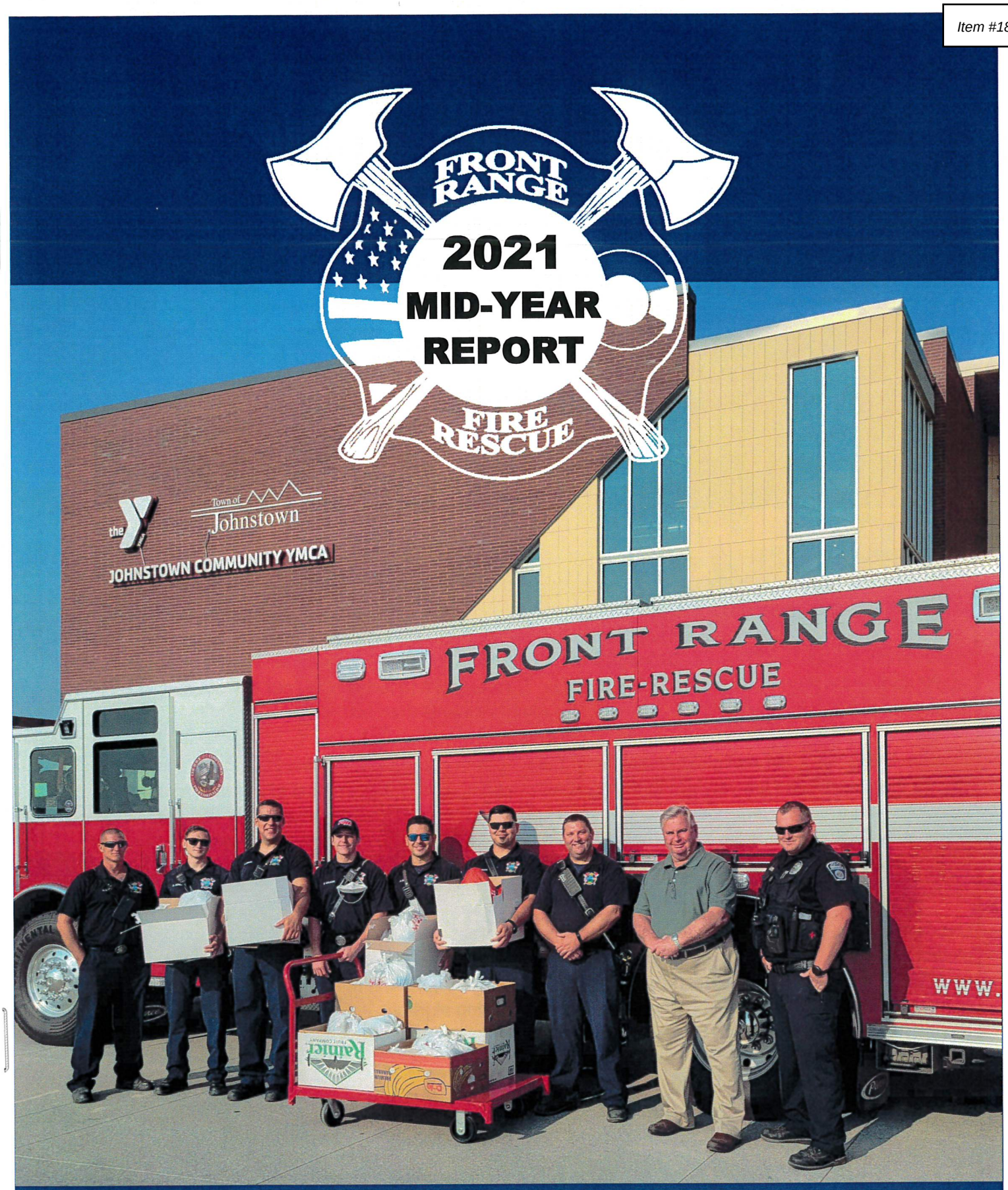
Fees collected at permit issuance	**Residential YTD**	**Commercial YTD**
Construction Valuation	($44,565,718)	($36,103,577)
Building permit fees	$378,272	$366,187
F&F or F&F Credit	$0	$5,000
Paving	$0	$0
Water Upgrade	$375	$0
Water & Sewer Reimbursement	$4,893	$0
Raw Water Development Fee	$1,028,711	$215,500
Water Meter	$66,765	$7,551
Water Tap	$868,995	$236,931
Sewer Tap	$712,800	$78,130
Regional Sewer Development fee	$712,500	
Sewer Inspection Fee	$13,500	$1,000
Park	$67,500	$0
Use Tax	$733,939	$492,944
Larimer Use Tax	$66,673	$94,457
Open Space Impact Fee	$161,190	$0
Library Impact Fee	$154,980	$0
Public Facilities Impact Fee	$214,515	$251,998
Police Facilities Impact Fee	$98,955	$88,375
Transportation Facilities Impact Fee	$374,895	$847,713
Traffic Signal	$837	$0
School District Fee	($84,964)	N/A
TOTAL FEES (YTD)	**$5,660,295**	**$2,685,786**

Building permits issued for individual dwelling units - 1991 to (date)

Single family, duplex, 4-plex						
Year	**Issued**	**Month avg**		**Year**	**Issued**	**Month avg**
*1961 - 90	165	0.0		2016	132	11.00
1991	2	0.17		2017	140	11.67
1992	5	0.42		2018	126	10.50
1993	7	0.75		2019	87	7.25
1994	47	3.92		2020	108	9.75
1995	106	8.83		**2021**	135	15.00
1996	145	12.00				
1997	143	11.92				
1998	175	14..58				
1999	145	12.08		**TOTAL**	**5241**	
2000	134	11.92				
2001	152	12.67				
2002	262	21.92				
2003	284	24.17				
2004	331	27.67				
2005	375	31.33				
2006	180	15.75				
2007	160	133.42				
2008	97	8.00				
2009	89	7.42				
2010	124	10.33				
2011	184	15.34				
2012	310	25.84				
2013	378	31.50				
2014	272	22.67				
2015	162	13.50				

FRONT RANGE FIRE RESCUE

2021 MID-YEAR REPORT



COURAGE COMPASSION PROFESSIONALISM

Dear stakeholder

We are pleased to share our mid-year report of our performance at Front Range Fire Rescue with all of you. 2021 has been a busy year! To date, we have responded to nearly 13% more incidents than this time last year. This is a complicated statistic. In 2020 we experienced a lower number of responses in the first three quarters. Due to so many of our citizens staying at home due to COVID, many incident types were lower. Interestingly though, we finished 2020 with almost the same number of calls for service as in 2019. As you would guess, the fourth quarter of 2020 was hectic. Fast forward to today. With our current daily call load, we expect to finish the year with 10% more emergency incidents than last year.

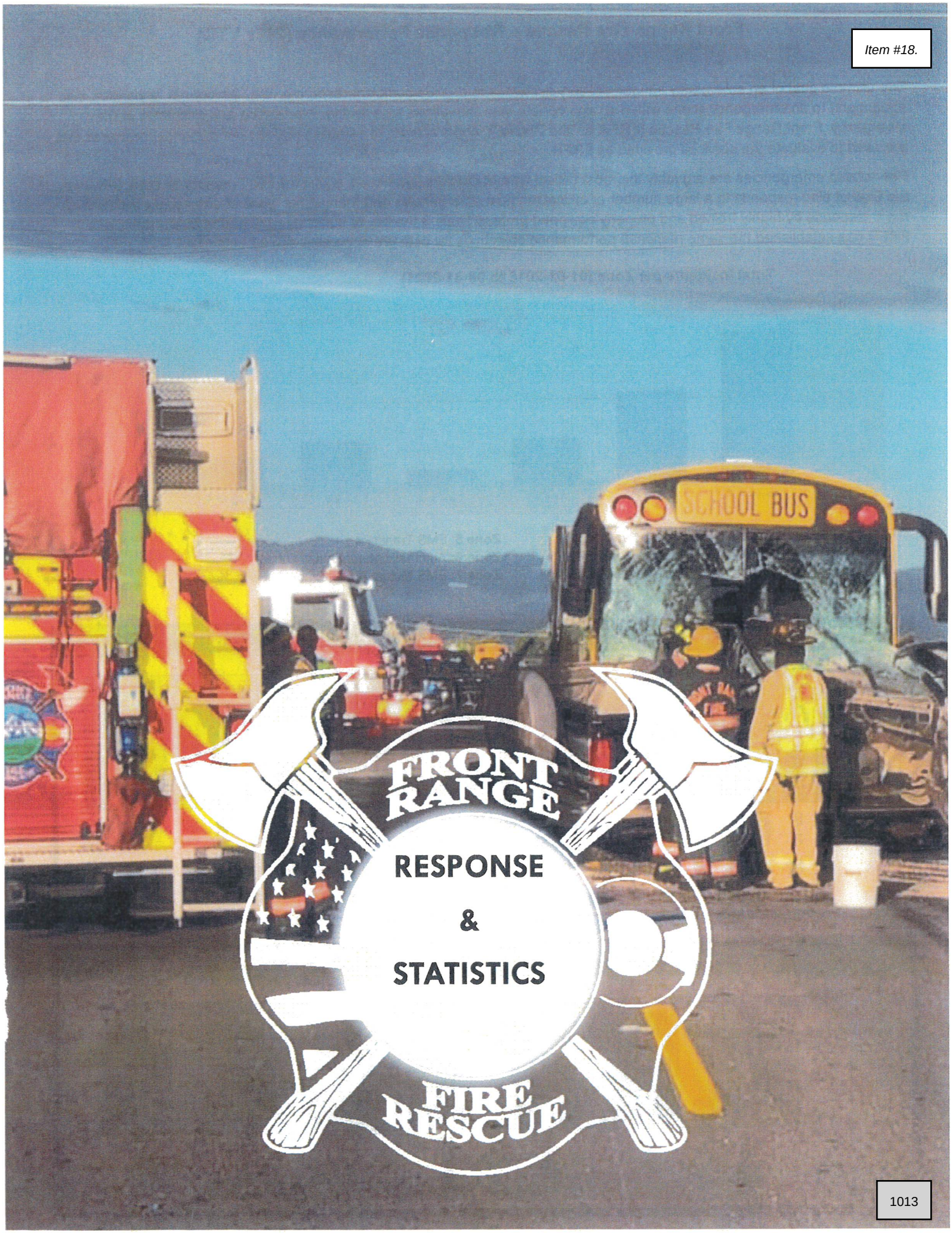
To spite being busy, our firefighters continue to respond with courage, compassion, and professionalism. One of the things that I am very proud of is that we continue to progress in most of our metrics and measurement areas. In large part, this is because our fire district culture continues to encourage improvement. While there are areas that require improvement, we are diligently working on steps to get better each and every day.

Over the next few years, we expect the call volume to increase exponentially. With the growth in our district's population, we know that more people means more emergencies. We know that is important to you as well. We are working on updating our strategic plan to anticipate the challenges and how we can best serve all of our customers. Beyond response, we are looking at improvements to our fire prevention efforts and plan review processes. Keeping up with the builders will be vital moving forward.

Thank you!

Michael West
Fire Chief

mwest@frfr.co



FRONT RANGE FIRE RESCUE

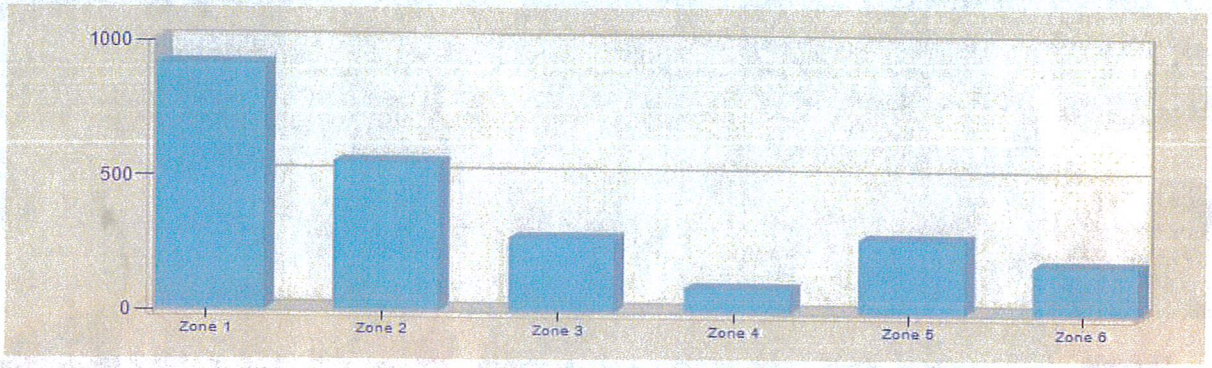
RESPONSE & STATISTICS

Front Range Fire Rescue – Response Performance (2021 YTD)

The ultimate goal of an emergency service delivery system is to provide sufficient resources (e.g., personnel, apparatus, and equipment) to an emergency scene within an appropriate time that allows for effective intervention and mitigation of the emergency. Front Range Fire Rescue (FRFR or "the District") works actively to establish realistic performance measures that are used to evaluate the services provided by FRFR.

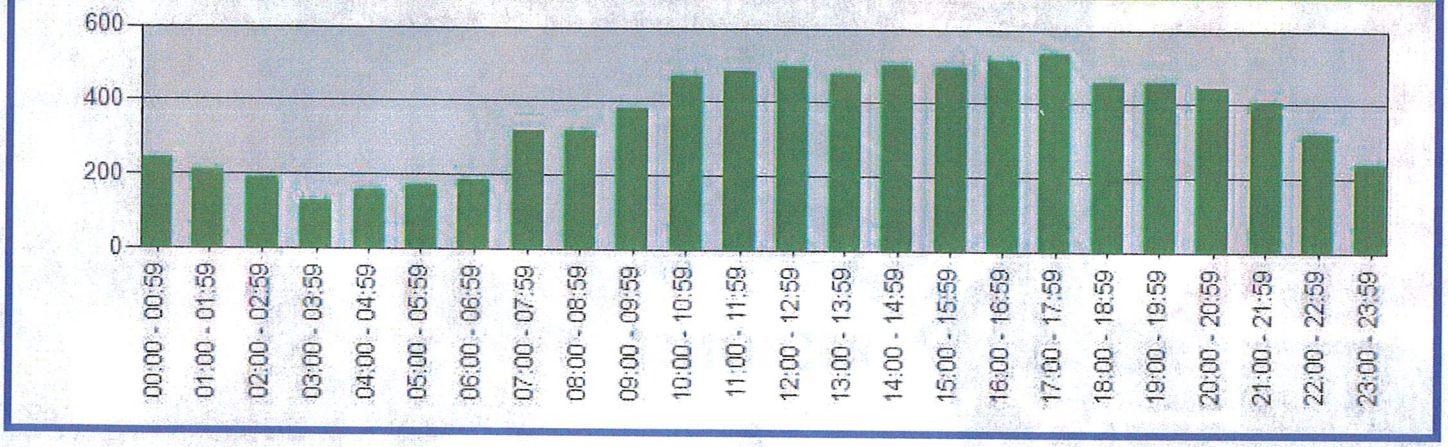
Fire-related emergencies are arguably the most critical type of incident that occurs within the FRFR response area; however, the District also responds to a large number of critical medical emergencies and many other types of emergency incidents. A rapid response by highly trained and properly equipped professionals is the key to successful mitigation of any emergency. FRFR has established the same response performance objectives for both fire apparatus and ambulances.

Total Incidents per Zone (01-01-2018 to 08-31-2021)

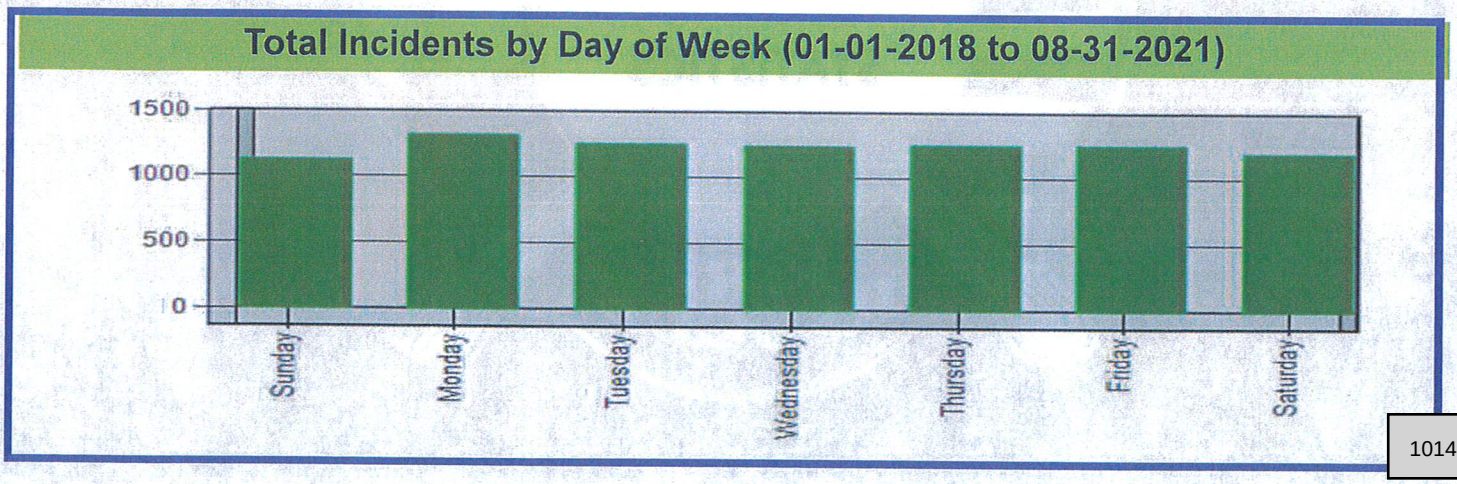


Zone 1: West of WCR 19 to FRFR's western boundary
Zone 2: East of WCR 19 to Weld County Road 27-½
Zone 3: East of WCR 27-½ to FRFR's eastern boundary
Zone 4: Windsor EMS Calls
Zone 5: EMS Transfers
Zone 6: Automatic/Mutual Aid to Others
Zone 7: EMS Mutual Aid to Evans, LaSalle, Kersey

Total Incidents per Hour (01-01-2018 to 08-31-2021)



Total Incidents by Day of Week (01-01-2018 to 08-31-2021)



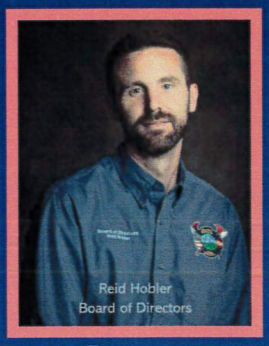
Baseline Performance – Structure Fire		2018 - 2021	2021	2020	2019	2018	GOAL
Alarm Handling	Pickup to Dispatch (Z1 & Z2)			1:54	2:13	2:06	1:00
	Pickup to Dispatch (Z3)			2:57	2:39	8:01	
Turnout	1st Unit Turnout (Z1 & Z2)			1:36	1:29	2:50	1:30
	1st Unit Turnout (Z3)			1:32	2:39	3:23	
Travel (Turnout to Arrival)	1st Unit Travel (Z1 & Z2)			4:44	7:04	7:49	7:30
	1st Unit Travel (Z3)			13:18	7:10	17:55	12:30
	ERF Travel (Z1 & Z2)			8:00 (n = 9)	9:18 (n = 12)	10:23 (n = 8)	10:30
	ERF Travel (Z3)			13:44 (n = 6)	11:02 (n = 2)	13:41 (n = 3)	16:30
Total Response (Pickup to Arrival)	1st Unit Response (Z1 & Z2)			7:25	10:01	10:14	10:00
	1st Unit Response (Z3)			16:32	10:01	22:32	15:00
	ERF Response (Z1 & Z2)			10:48 (n = 8)	12:54 (n = 8)	21:30 (n = 8)	12:30
	ERF Response (Z3)			16:36 (n = 3)	13:41 (n = 1)	17:07 (n = 3)	17:00

Baseline Performance – EMS		2018 - 2021	2021	2020	2019	2018	GOAL
Alarm Handling	Pickup to Dispatch (Z1 & Z2)			1:26	1:28	2:30	1:00
	Pickup to Dispatch (Z3)			1:37	2:07	1:58	
Turnout	1st Unit Turnout (Z1 & Z2)			1:32	1:32	1:59	1:30
	1st Unit Turnout (Z3)			1:28	1:30	2:01	
Travel (Turnout to Arrival)	1st Unit Travel (Z1 & Z2)			6:25	6:49	6:38	7:30
	1st Unit Travel (Z3)			10:10	11:17	11:05	12:30
	ERF Travel (Z1 & Z2)			6:41 (n = 469)	9:35 (n = 421)	8:07 (n = 443)	10:30
	ERF Travel (Z3)			11:37 (n = 103)	15:33 (n = 117)	13:07 (n = 77)	16:30
Total Response (Pickup to Arrival)	1st Unit Response (Z1 & Z2)			8:19	8:52	8:54	10:00
	1st Unit Response (Z3)			12:25	14:02	13:23	15:00
	ERF Response (Z1 & Z2)			8:48 (n = 423)	9:32 (n = 255)	10:19 (n = 443)	12:30
	ERF Response (Z3)			14:05 (n = 89)	15:33 (n = 51)	15:41 (n = 77)	17:00

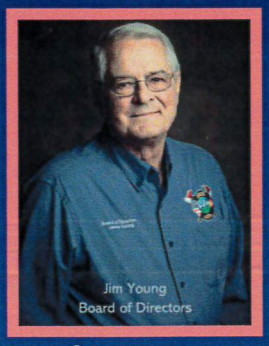
DEPARTMENT TRAINING	HOURS
FIRE TRAINING	3334
SPECIAL OPERATIONS	224
MEDICAL	183
OTHER	699
2021 JAN-JULY Total Hours	**4440**

PRESIDENT

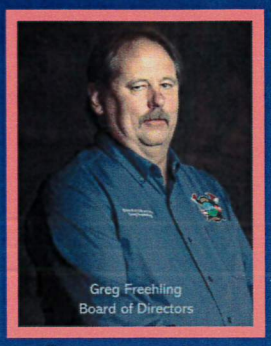
VICE PRESIDENT



TREASURER



SECRETARY



DIRECTOR AT LARGE

THE PUBLIC IS WELCOME TO ATTEND ALL REGULARLY SCHEDULED BOARD MEETIINGS, HELD ON THE SECOND TUESDAY EVENING OF THE MONTH AT 6:00 PM. FOR MORE INFORMATION PLEASE GO TO OUR WEBSITE WWW.FRFR.CO

FRONT RANGE BOARD OF DIRECTORS FIRE RESCUE

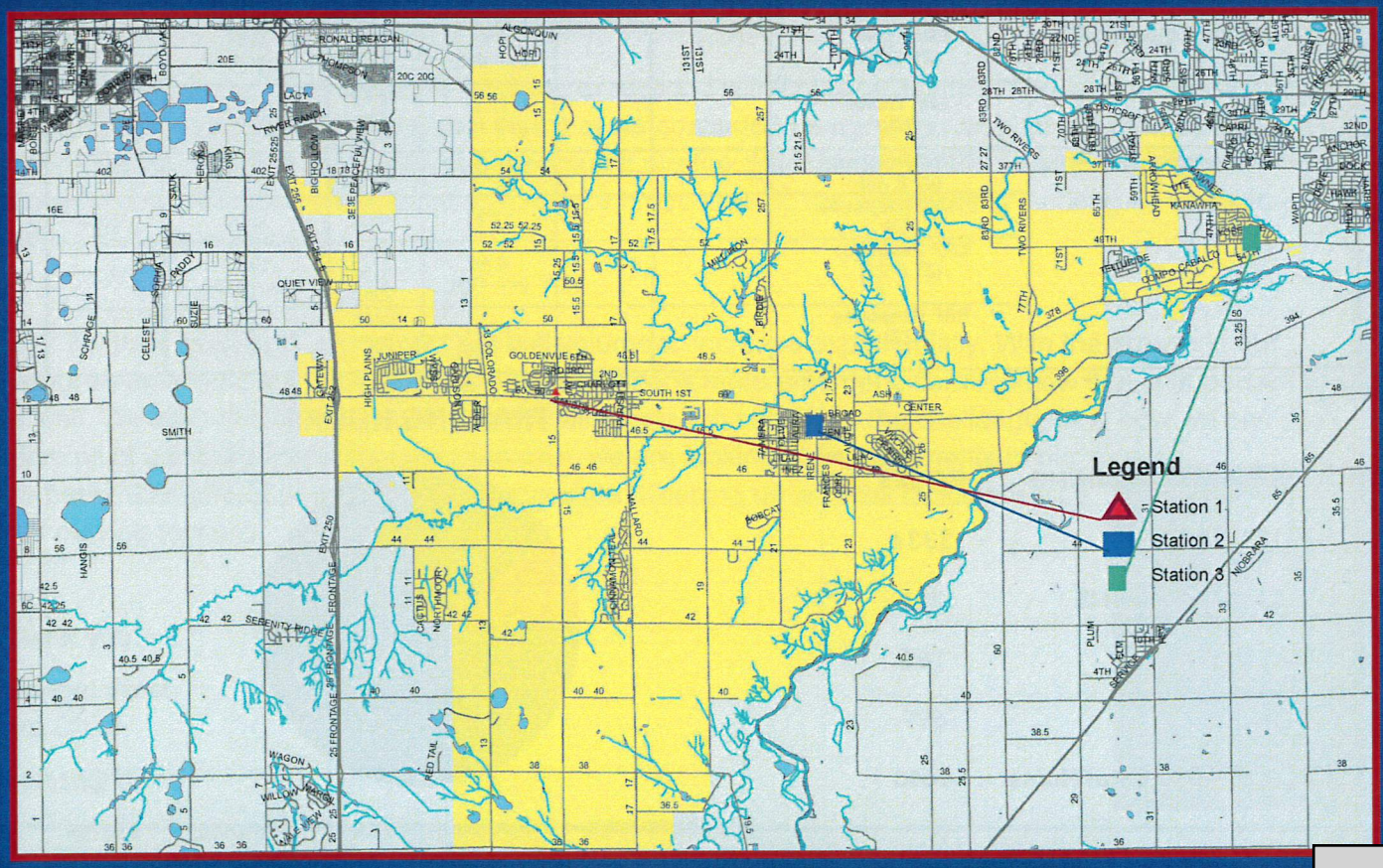
CONTACT INFORMATION

970.587.4464
INFO@FRFR.CO

FOLLOW US ON

www.frfr.co

FRONT RANGE FIRE RESCUE



JOHNSON & REPUCCI LLP
ATTORNEYS AT LAW

Stephen C. Larson
sclarson@j-rlaw.com
Direct Dial: (303) 546-5606

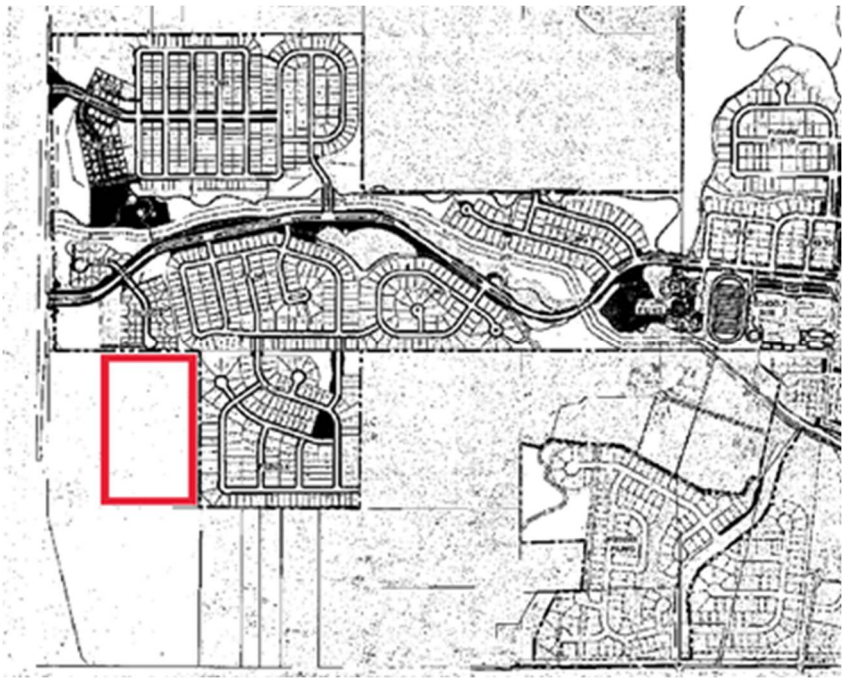
October 4, 2021

Avi S. Rocklin, Esq.
Law Office of Avi S. Rocklin, LLC
19 Old Town Square, Suite 238
Fort Collins, Colorado 80524

Re: Re: Request to Transfer Certain Clayton Water Credits from Thompson River Ranch to North Ridge

Dear Avi,

As we have discussed by telephone, on behalf of Clayton Properties II, LLC, doing business as Oakwood Homes ("**Clayton**"), please consider this letter as Clayton's written request to the Town of Johnstown ("**Town**") to transfer certain water credits from Clayton's Thompson River Ranch development ("**TRR**") to Clayton's adjacent North Ridge development, as set forth in greater detail below. North Ridge is a 23-acre residential development adjacent to TRR, sharing a portion of TRR's southwest boundary as shown in red outline below.



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The water credits sought to be moved to North Ridge are a portion of the water credits that Clayton received in exchange for the dedication of Hillsborough Ditch ("**Hillsborough**") water rights to the Town by WR Investment, LLC ("**WRI**") pursuant to that certain Water Agreement between the Town and WRI dated May 7, 2018, and which water credits were purchased from WRI by Clayton in September 2018. The water credits sold to Clayton by WRI consist of 610 SFE potable water credits and sufficient non-potable water to irrigate 96 acres of parks and open space within TRR (collectively, the "**Water Credits**"). You may recall that the transfer to Clayton of such Water Credits was approved by the Town, among other ways, via that certain September 17, 2018 Consent and Estoppel Certificate executed by the Town.

Clayton's request to transfer a portion of the Water Credits to North Ridge is made in the alternative, as set forth below. Clayton is making this request in the alternative due to an ongoing internal analysis of Clayton as to which alternative is the most financially and logistically feasible. The numbers set forth below are estimates, as Clayton has not yet made even its initial land use submittal to the Town for North Ridge.

Alternative A:

1. Transfer to North Ridge approximately 8.16 acres of spray nonpotable irrigation credit and approximately 1.69 acres of drip nonpotable irrigation credit (for parks and open space irrigation) from the 96 acres of nonpotable irrigation water credit for TRR; and

2. Transfer to North Ridge a sufficient number of the TRR 610 SFE water credits to provide indoor use and lawn irrigation for approximately 196 lots within North Ridge, with a combined annual demand estimated to be 67.78 acre-feet per year.

Alternative B.

Transfer to North Ridge a sufficient number of the TRR 610 SFE water credits to provide the supply for both (i) the indoor and lawn irrigation on approximately 196 lots and (ii) approximately 8.16 acres of spray irrigation and approximately 1.69 acres of drip irrigation of parks and open space within North Ridge. The total water demand for this usage within North Ridge is estimated to be 90.72 acre-feet per year (approximately 67.78 acre-feet for indoor use and approximately 22.94 acre-feet for parks and open space irrigation).

In regard to Alternative A.1, please note that the nonpotable irrigation of North Ridge would be performed by Thompson Crossing Metropolitan District No. 3, the same district performing the nonpotable irrigation of TRR. Clayton is currently analyzing the feasibility of

connecting a North Ridge nonpotable irrigation system with the existing TRR nonpotable irrigation system. Please also note that I have reviewed the decree in Case No. 14CW3160, the decree granting the change of the Hillsborough water rights to be used for the nonpotable irrigation discussed herein. In accordance with said decree, the Hillsborough water can be used for nonpotable irrigation anywhere within the Town.

Please advise what further steps or information may be required in order for the Town to consider and act upon this request. Of course, time is of the essence for Clayton in this regard so that it may solidify its water supply plan for North Ridge. Accordingly, prompt action would be greatly appreciated.

Very truly yours,

Stephen C. Larson

SCL:RAG

Town of Johnstown

TOWN COUNCIL WORKSESSION COMMUNICATIONS

AGENDA DATE: November 1, 2021

SUBJECT: Home Rule Charter Amendment

ACTION PROPOSED: Work Session Discussion Only

ATTACHMENTS:
1. Proposed Home Rule Charter Amendment
2. Initiative Petition 2022
3. Marijuana Excise Tax Information

PRESENTED BY: Matt LeCerf, Town Manager
Avi Rocklin, Town Attorney

WORK SESSION DESCRIPTION:

Recently the Town was presented with an Initiative Petition which may appear on the ballot in April 2022 during our regularly scheduled election depending on when it is returned to the Town, whether the petitioners acquire the appropriate number of signatures and whether, if the signatures are appropriate, Town Council desires to adopt it. The initiative seeks to permit medical and retail marijuana business establishments within the Town of Johnstown and implement regulations related thereto, including, but not limited to, the creation of a licensing authority, the requirements to obtain a license and pay a license fee and guidelines regarding the location of business establishments, signage and advertising. For your information, an initiative petition is permitted to seek legislative, not administrative, action. A copy of this petition for initiative is included in with this work session and memo. This petition for initiative was presented to the Town Clerk by individuals who are not residents of the Town of Johnstown.

Based on this petition, it was requested that Staff draft a Home Rule Charter Amendment to require that the proponents of an initiative and referendum petitions be represented by three registered electors of the Town of Johnstown. Enclosed is a draft copy of an ordinance that could be presented to Town Council for consideration to facilitate including this on the ballot in April 2022.

Considering the petition initiative regarding marijuana is already being circulated and provided the appropriate signatures are received meriting placement of this question on the ballot, Town Council may want to consider asking the community to support an excise tax on the sale of marijuana in April 2022. In addition, if the petition representatives would be willing to withdraw the petition, the Town Council may

want to consider referring a ballot question to the voters asking whether the citizens desire to allow the sale of marijuana in the Town. In that manner, if the voters desire to permit the sale of marijuana, the Town Council could thereafter adopt an implementing ordinance. Enclosed is information and limits other communities have placed on the sale of retail/recreational marijuana.

Staff will be available to answer any questions related to this topic or gather and investigate these items more thoroughly as directed by Town Council.

Reviewed and Approved for Presentation,

_____
Town Manager

TOWN OF JOHNSTOWN, COLORADO

ORDINANCE NO. 2021-___

AN ORDINANCE SUBMITTING TO THE REGISTERED ELECTORS OF THE TOWN OF JOHNSTOWN AT THE GENERAL MUNICIPAL ELECTION TO BE HELD ON APRIL 5, 2022, A CHARTER AMENDMENT TO REQUIRE THAT THE PROPONENTS OF INITIATIVE AND REFERENDUM PETITIONS BE REPRESENTED BY THREE REGISTERED ELECTORS OF THE TOWN OF JOHNSTOWN

WHEREAS, the Town of Johnstown, Colorado ("Town") is a municipal corporation duly organized and existing under its Home Rule Charter adopted pursuant to Article XX of the Constitution of the State of Colorado; and

WHEREAS, the Town Council is vested with authority to administer the affairs of the Town; and

WHEREAS, Article 7 of the Johnstown Home Rule Charter ("Charter") addresses, among other matters, initiative and referendum proceedings; and

WHEREAS, Section 7.1.A and Section 7.2.A of Article 7 provide, respectively, that initiative and referendum proceedings may be commenced, except as otherwise provided in the Charter, pursuant to state statutes, ordinances or applicable laws that establish the procedures; and

WHEREAS, Section 31-11-106(2), C.R.S., provides that each initiative or referendum petition "shall designate by name and mailing address two persons who shall represent the proponents thereof in all matters affecting the petition and to whom all notices or information concerning the petition shall be mailed;" and

WHEREAS, pursuant to the state statute, the petition representatives do not need to be citizens or registered electors of the concerned municipality; and

WHEREAS, the Town Council desires to submit a proposed Chater amendment to the registered electors of the Town to require that the proponents of initiative and referendum petitions be represented by three registered electors of the Town; and

WHEREAS, Section 1.8 of Article 1 of the Charter provides that proceedings to amend the Charter may be initiated by, among other means, the adoption of an ordinance by the Town Council submitting the proposed amendment to a vote of the registered electors of the Town; and

WHEREAS, the Town Council hereby finds, determines and declares that this Ordinance is promulgated under the general police power of the Town, that it is promulgated for the preservation of the public health, welfare, peace, safety and property and that this Ordinance is in the best interests of the citizens of the Town.

NOW, THEREFORE, BE IT ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF JOHNSTOWN, COLORADO, AS FOLLOWS:

Section 1. The Town Council hereby submits and refers to the registered electors of the Town a proposed amendment to Section 7.1 of Article 7 of the Charter to provide a new Subsection 7.1.B and renumber the subsequent subsections, to read in its entirety as follows:

Section 7.1. Initiative.

A. The initiative power, reserved by Article 5, Section 1(9) of the Colorado Constitution, is hereby extended to the registered electors of the Town as to Town legislation which is subject to the initiative power. Any initiated measure shall be in the form of an ordinance. The measure shall be initiated pursuant to the state statutes, ordinances or applicable laws which establish procedures for a municipal initiative, except as otherwise provided in this Charter and in ordinances consistent with this Charter.

B. *Each initiative petition shall designate by name and mailing address three registered electors of the Town who shall represent the proponents thereof in all matters affecting the petition and to whom all notices or information concerning the petition shall be mailed.*

C. The initiative petition shall be signed by registered electors of the Town equal in number to at least fifteen (15) percent of the total number of electors of the Town registered to vote at the last general municipal election.

E. The Town Clerk shall not count as valid any signature on an initiative petition if the date of the signature is prior to the date the form of the petition was approved by the Town Clerk.

F. The Town Clerk shall not count as valid any signature on an initiative petition if more than ninety (90) days have elapsed between the date the form of the petition was approved by the Town Clerk and the date of the signature.

Section 2. The Town Council hereby submits and refers to the registered electors of the Town a proposed amendment to Section 7.2 of Article 7 of the Charter to provide a new Subsection 7.2.B and renumber the subsequent subsections, to read in its entirety as follows:

Section 7.2. Referendum.

A. The referendum power, reserved by Article 5, Section 1(9) of the Colorado Constitution, is hereby extended to the registered electors of the Town as to Town legislation which is subject to the referendum power. Such legislation shall be referred pursuant to the state statutes, ordinances or applicable laws which establish procedures for a municipal referendum, except as otherwise provided in this Charter and in ordinances consistent with this Charter.

B. *Each referendum petition shall designate by name and mailing address three registered electors of the Town who shall represent the proponents thereof in all matters affecting the petition and to whom all notices or information concerning the petition shall be mailed.*

C. A referendum petition shall be signed by registered electors of the Town equal in number to at least ten (10) percent of the total number of electors of the Town registered to vote at the last regular municipal election.

D. The Town Clerk shall not count as valid any signature on a referendum petition if the date of the signature is prior to the date the form of the petition was approved by the Town Clerk.

Section 3. The question of amending the Charter for the purposes stated herein shall be submitted to the registered electors of the Town in substantially the following form:

SHALL SECTIONS 7.1 AND 7.2 OF ARTICLE 7 OF THE JOHNSTOWN HOME RULE CHARTER BE AMENDED TO REQUIRE THAT THE PROPONENTS OF INITIATIVE AND REFERENDUM PETITIONS BE REPRESENTED BY THREE REGISTERED ELECTORS OF THE TOWN OF JOHNSTOWN?

___ YES

___ NO

Section 4. The election shall be a general municipal election conducted by mail ballot on April 5, 2022. Pursuant to Section 6.4 of Article 6 of the Charter, the Town Clerk is hereby authorized to be in charge of all activities and duties related to the election. In addition, the officers and employees of the Town are hereby authorized and directed to take all necessary and appropriate action to effectuate the provisions of this Ordinance.

Section 5. If any part or provision of this Ordinance, or its application to any person or circumstance, is adjudged to be invalid or unenforceable, the invalidity or unenforceability of such part, provision, or application shall not affect any of the remaining parts, provisions or applications of this Ordinance that can be given effect without the invalid provision, part or application, and to this end the provisions and parts of this Ordinance are declared to be severable.

Section 6. This Ordinance, after its passage on final reading, shall be numbered, recorded, published and posted as required by the Charter and the adoption, posting and publication shall be authenticated by the signature of the Mayor and the Town Clerk and by the Certificate of Publication. This Ordinance shall become effective upon final passage as provided by the Charter. Copies of the entire Ordinance are available at the office of the Town Clerk.

INTRODUCED, AND APPROVED on first reading by the Town Council of the Town of Johnstown, Colorado, this _____ day of _____, 2021.

TOWN OF JOHNSTOWN, COLORADO

ATTEST:

By:_____ By:_____

Diana Seele, Town Clerk Gary Lebsack, Mayor

PASSED UPON FINAL APPROVAL AND ADOPTED on second reading by the Town Council of the Town of Johnstown, Colorado, this _____ day of _____, 2021.

TOWN OF JOHNSTOWN, COLORADO

ATTEST:

By:_____ By:_____

Diana Seele, Town Clerk Gary Lebsack, Mayor

PETITION FOR INITIATIVE 2022

WARNING:

IT IS AGAINST THE LAW:

For anyone to sign any initiative or referendum petition with any name other than his or her own or to knowingly sign his or her name more than once for the same measure or to knowingly sign a petition when not a registered elector who is eligible to vote on the measure.

DO NOT SIGN THIS PETITION UNLESS YOU ARE A
REGISTERED ELECTOR AND ELIGIBLE TO VOTE ON THIS MEASURE.
TO BE A REGISTERED ELECTOR YOU MUST
BE A CITIZEN OF COLORADO AND REGISTERED TO VOTE.

Do not sign this petition unless you have read or had read to you the proposed initiative or referred measure or the summary in its entirety and understand its meaning.

SUMMARY OF PROPOSED INITIATIVE:

This initiative seeks to permit medical and retail marijuana business establishments within the Town of Johnstown and implement regulations related thereto, including, but not limited to, the creation of a licensing authority, the requirements to obtain a license and pay a license fee and guidelines regarding the location of the business establishments, signage and advertising.

AN INITIATIVE TO STRICTLY REGULATE, CONTROL AND PERMIT A LIMITED NUMBER OF STATE-AUTHORIZED MEDICAL/ RETAIL MARIJUANA BUSINESSES WITHIN THE TOWN OF JOHNSTOWN AND TO ESTABLISH REASONABLE RESTRICTIONS ON THE SIGNAGE AND ADVERTISING OF THESE BUSINESSES TO MATCH STATE REGULATIONS

WHEREAS Amendment 20&64 of the Colorado State Constitution, title 44, article 10 was approved by Colorado voters in 2000 and 2012 respectively, permitting municipalities to license and regulate marijuana businesses.

WHEREAS the Colorado Legislature in 2018 enacted the Colorado Marijuana Code permitting municipalities to license and regulate medical and retail marijuana businesses in order to provide marijuana and related products in a safe, professional and quality-controlled manner.

WHEREAS, it is the intent and desire of the citizens of the Town of Johnstown that the Town Council of the Town of Johnstown, Colorado, adopt AN INITIATIVE TO STRICTLY REGULATE, CONTROL AND PERMIT A LIMITED NUMBER OF STATE-AUTHORIZED MEDICAL/ RETAIL MARIJUANA BUSINESSES WITHIN THE TOWN OF JOHNSTOWN AND TO ESTABLISH REASONABLE RESTRICTIONS ON THE SIGNAGE AND ADVERTISING OF THESE BUSINESSES TO MATCH COMMUNITY NEEDS or, if the within Initiated Ordinance is not adopted by the Town Council in the form presented herein, that the within Initiated Ordinance be referred in the form presented herein to the registered electors of the municipality at a special election, specifically the April 2022 coordinated election as provided by law.

NOW, THEREFORE, BE IT ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF JOHNSTOWN, COLORADO, OR THE REGISTERED ELECTORS OF THE TOWN OF JOHNSTOWN:

ARTICLE XI
MEDICAL/ RETAIL MARIJUANA

Sec. 6-200-10 Purpose

The purpose of this Article is to implement the provisions of Article 10 of Title 44, C.R.S., known as the Colorado Marijuana Code.

Sec. 6-200-20 Incorporation of state law.

The provisions of the Colorado Marijuana Code, and any rules and regulations promulgated thereunder, are incorporated herein by reference except to the extent that more restrictive or additional regulations are set forth in this Article.

Sec. 6-200-30 Definitions.

(a) The following words, terms, and phrases, when used in this Article, shall have the meanings ascribed to them in this Section:

Applicant shall mean any person or entity who has submitted an application for a license or renewal of a license issued pursuant to this Article. If the applicant is an entity and not a natural Person, *applicant* shall include all persons who are the members, managers, officers, directors and shareholders of such entity.*Colorado Marijuana Code* shall mean Title 10, Article 44 of the Colorado Revised Statutes and any rules or regulations promulgated thereunder.

Cultivation or *cultivate* shall mean the process by which a person grows a marijuana plant.

Financial interest shall mean any ownership interest, including, without limitation, a membership, directorship or officer ship; or any creditor interest, whether or not such interest is evidenced by any written document.

License shall mean a document issued by the Town of Johnstown officially authorizing an applicant to operate a retail marijuana business pursuant to this Article.

Licensee shall mean the person to whom a license has been issued pursuant to this Article.

Medical/Retail marijuana business or *business* shall mean a medical/retail marijuana store, optional premises medical/ retail marijuana cultivation facility, or medical/ retail marijuana products manufacturing facility, medical/ retail marijuana testing facility, and licensed hospitality businesses as defined in the Colorado Marijuana Code.

Marijuana paraphernalia or *paraphernalia* shall mean devices, contrivances, instruments and paraphernalia for inhaling or otherwise consuming marijuana, including, but not limited to, rolling papers, related tools, water pipes and vaporizers.

Place of worship or *religious assembly* shall mean a building containing a hall, auditorium or other suitable room used for the purpose of conducting religious services or meetings of the occupants of such structure.

(b) In addition to the definitions contained in Subsection (a) of this Section, other terms used in this Article shall have the meaning ascribed to them in Article 10, Title 44 of the Colorado Marijuana Code, and such definitions are hereby incorporated into this Article by this reference.

Sec. 6-200-40 Creation.

There shall be and is hereby created a Medical/ Retail Marijuana Licensing Authority, hereafter referred to in this Article as the "Authority".

Sec. 6-200-50 Composition.

The Authority shall be a person appointed by the Town of Johnstown Manager.

Sec. 6-200-60 Functions.

(a) The Authority shall have the duty and authority pursuant to the Colorado Marijuana Code and this Article to grant or refuse licenses; to grant or refuse transfers of ownership or location of the license; and levy penalties against licensees in the manner provided by law.

(b) The Authority shall have all the powers of a Local Licensing Authority as set forth in the Colorado Marijuana Code.

(c) The Authority shall have the power to promulgate rules and regulations concerning the procedures for hearings before the Authority.

(d) The Authority shall have the power to require any applicant or licensee to furnish any relevant information required by the Authority.

(e) The Authority shall have the power to administer oaths and issue subpoenas to require the presence of persons and the production of papers, books and records at any hearing which the Authority is authorized to conduct. Any such subpoena shall be served in the same manner as a subpoena issued by the District Court of the State.

Sec. 6-200-70 License required.

It shall be unlawful for any person to establish or operate a medical/ retail marijuana business in the Town of Johnstown without first having obtained from the Town of Johnstown and the State a license for each facility to be operated in connection with such business. Such license shall be kept current at all times, and the failure to maintain a current license shall constitute a violation of this Section.

Sec. 6-200-80 Requirements of application for license; payment of application fee; denial of license.

(a) A person seeking a license pursuant to the Colorado Marijuana Code and the provisions of this Article shall submit an application to the Town of Johnstown on forms provided by the State and Town of Johnstown. At the time of application, each applicant shall pay a nonrefundable application fee to be set by resolution by the town council for each license issued to defray the costs incurred by the Town of Johnstown for background investigations and inspection of the proposed premises, as well as any other costs associated with the processing of the application. In addition, the applicant shall present a suitable form of identification.

The applicant shall also provide the following information on a form approved by, or acceptable to, the Authority, which information may be required for the applicant and all persons having a financial interest in the retail marijuana business that is the subject of the application or, if the applicant is an entity, having a financial interest in the entity:

(1) name, address, date of birth;

(2) an acknowledgment and consent that the Town of Johnstown, may conduct a background investigation, including a criminal history check and that the Town of Johnstown will be entitled to full and complete disclosure of all financial records of the medical/ retail marijuana business, including records of deposit, withdrawals, balances and loans;

(3) if the applicant is a business entity, information regarding the entity, including, without limitation, the name and address of the entity, its legal status, and proof of registration with, or a certificate of good standing from, the Colorado Secretary of State, as applicable;

(4) if the applicant is not the owner of the proposed licensed premises, a statement from the owner of such property authorizing the use of the property for a retail marijuana business;

(5) a copy of any deed reflecting the applicant's ownership of, or lease reflecting the right of the applicant to possess, the proposed licensed premises;

(6) a "to scale" diagram of the proposed licensed premises, no larger than 11" x 17", showing, without limitation, building layout, all entry ways and exits to the proposed licensed premises, loading zones and all areas in which retail marijuana will be stored, grown, manufactured or dispensed;

(7) a comprehensive business operation plan for the retail marijuana business which shall contain, at a minimum, the following:

a. a security plan meeting the requirements of this Article,

b. a general description of all products to be sold,

c. a plan for exterior signage that is in compliance with all applicable requirements of this Code and the Land Use Code, including photographs and/or illustrations of proposed signage; and

(8) any additional reasonable information that the Town of Johnstown Manager determines to be necessary in connection with the investigation and review of the application.

(b) All retail marijuana businesses shall obtain other required permits of licenses related to the operation of the medical/ retail marijuana business, including, without limitation, any development approvals or building permits required by this Code and the Land Use Code.

(c) Upon receipt of a completed application, the Town of Johnstown Manager may circulate the application to all affected service areas and departments of the Town Mead to determine whether the application is in full compliance with all applicable laws, rules and regulations.

(d) The Town of Johnstown may, prior to issuance of the license, perform an inspection of the proposed licensed premises to determine compliance with any applicable requirements of this Article or other provisions of this Code or the Land Use Code.

Sec. 6-200-90 Denial of application.

The Authority may deny any application that does not meet the requirements of the Colorado Marijuana Code or this Article. The Authority may deny any application that contains any false, misleading or incomplete information.

Sec. 6-200-100 Persons prohibited as licensees.

No license shall be issued to, held by, or renewed by any applicant who does not have the applicable State license.

Sec. 6-200-110 Location and Selection Criteria.

(a) No medical/ retail marijuana center shall be issued a license if, at the time of application for such license, the proposed location is:

(1) within one thousand (1,000) feet of any full time private or public preschool, elementary, secondary, vocational or trade school, college or university;

(2) within one thousand (1,000) feet of any public playground;

(3) within five hundred (500) feet of:

a. any licensed child care center,

b. any place of worship or religious assembly,

c. any public park, pool, or recreation facility,

d. any juvenile or adult halfway house, correctional facility or substance abuse rehabilitation or treatment center, or

(4) within the boundaries of any residential zoned district;

(b) The location criteria contained in subsection (a) of this Section shall apply to all proposed changes in the location of an existing license.

(c) The distances described in Subsection (a) above shall be computed by direct measurement in a straight line from the nearest property line of the land used for the purposes stated in Paragraphs (a)(1), (a)(2) and (a)(3) above to the nearest portion of the building or unit in which the retail marijuana center is located.

Sec. 6-200-120 Inspection fee.

(a) Upon issuance of a license, and upon renewal thereafter, the licensee shall pay to the Town of Johnstown a reasonable fee in an amount determined by the Town of Johnstown Manager to be sufficient to cover the cost of inspections conducted pursuant to this Article.

(b) The inspection fee required under Subsection (a) of this Section shall be due and payable prior to or upon issuance of each license and upon the renewal of any such license and shall not be refundable.

Sec. 6-200-130 Signage and advertising.

All signage and advertising for a medical/ retail marijuana center shall comply with all applicable provisions of the State Code and the Land Use Code.

(a) The prohibition's set forth in this Section shall not apply to political speech or any signage advocating the passage or defeat of a Town of Johnstown or state ballot measure.

(b) Violation of this Section shall result in a $100 fine per day per violation. Such fine shall be levied on the licensee by the Authority upon the Authority finding by a preponderance of the evidence a violation of this Section. Repeated and continuous failure to comply with the requirements of this Section shall be considered by the Authority in any action relating to the issuance, revocation, suspension or nonrenewal of a license.

Sec. 6-200-140 Warning signs.

All warning signs at the premises shall comply with the requirements of the Colorado Marijuana Code and all applicable rules and regulations promulgated thereunder.

Sec. 6-200-150 Security requirements.

Security measures at all licensed premises shall comply with the requirements of the Colorado Marijuana Code and all applicable rules and regulations promulgated thereunder.

Sec. 6-200-160 Report of disturbances and unlawful activity.

(a) All licensees and any agent, manager or employee thereof, shall immediately report to the Town of Johnstown Police Department any disorderly act, conduct or disturbance and any unlawful activity committed in or on the licensed premises.

(b) Failure to comply with the requirements of this Section shall be considered by the Authority in any action relating to the issuance, revocation, suspension or nonrenewal of a license.

Sec. 6-200-170 Labeling.

All medical /retail marijuana sold or otherwise distributed by the licensee shall be labeled in a manner that complies with the requirements of the Colorado Marijuana Code and all applicable rules and regulations promulgated thereunder.

Sec. 6-200-180 Prohibited acts.

(a) It shall be unlawful for any licensee to permit the consumption of alcohol beverages, as defined in the Colorado Liquor Code, on the licensed premises.

(b) It shall be unlawful for any licensee holding a medical/ retail marijuana center licensed, or for any agent, manager or employee thereof, to:

(1) sell, give, dispense or otherwise distribute retail marijuana or retail marijuana paraphernalia from any outdoor location ;

(2) sell, give, dispense or otherwise distribute retail marijuana to anyone under twenty-one (21) years of age.

(3) Sell, give, dispense or otherwise distribute more than one ounce (1) of retail marijuana to a legal consumer within a twenty-four (24) hour period of time;

(c) It shall be unlawful for any optional premises cultivation operation, testing facilities and Research and Development facilities to post or allow to be posted signs or other advertising materials identifying the premises as being associated with the use of medical/ retail marijuana.

(d) It shall be unlawful for any medical/ retail marijuana-infused products manufacturer, or hospitality business to post or allow to be posted signs or other advertising materials identifying the premises as being associated with the production or use of medical/ retail marijuana.

Sec. 6-200-190 Visibility of activities; control of emissions.

(a) All activities of medical/ retail marijuana businesses, including, without limitation, cultivating, growing, processing, displaying, manufacturing, selling and storage, shall be conducted out of public view per the provisions of the Colorado Marijuana Code.

(b) Sufficient measures and means of preventing smoke, odors, debris, dust, fluids and other substances from exiting a retail marijuana business must be provided at all times. In the event that any odors, debris, dust, fluids or other substances exit a medical/ retail marijuana business, the owner of the subject premises and the licensee shall be jointly and severally liable for such conditions and shall be responsible for immediate, full clean-up and correction of such condition. The licensee shall properly dispose of all such materials, items and other substances in a safe, sanitary and secure manner and in accordance with all applicable federal, state and local laws and regulations.

Sec. 6-200-200 Sales tax.

Each medical/ retail marijuana business shall collect and remit to the Town of Johnstown, sales and use tax on all medical/ retail marijuana, paraphernalia and other tangible personal property used or sold at the licensed premises.

Sec. 6-200-210 Inspection of licensed premises.

During all business hours and other times of apparent activity, all licensed premises shall be subject to inspection by the Town of Johnstown Police Department and all other Town of Johnstown departments designated by the Town of Johnstown Manager for the purpose of investigating and determining compliance with the provisions of this Article and any other applicable state and local laws or regulations.

Sec. 6-200-220 Nonrenewal, suspension or revocation of license.

(a) The Authority may, after notice and hearing, suspend, revoke or refuse to renew a license for any of the following reasons:

(1) the applicant or licensee, or his or her agent, manager or employee, has violated, does not meet, or has failed to comply with, any of the terms, requirements, conditions or provisions of this Article or with any applicable State or local law or regulation;

(2) the applicant or licensee, or his or her agent, manager or employee, have failed to comply with any special terms or conditions of its license pursuant to an order of the State or local licensing authority, including those terms and conditions that were established at the time of issuance of the license and those imposed as a result of any disciplinary proceedings held subsequent to the date of issuance of the license; or

(3) the medical/ retail marijuana business has been operated in a manner that adversely affects the public health, safety or welfare.

(b) Evidence to support a finding under Subsection (a) of this Section may include, without limitation, a continuing pattern of disorderly conduct, a continuing pattern of drug-related criminal conduct within the premises of the medical/retail marijuana business or in the immediate area surrounding such business, a continuing pattern of criminal conduct directly related to or arising from the operation of the medical/ retail marijuana business, or an ongoing nuisance condition emanating from or caused by the retail marijuana business. Criminal conduct shall be limited to the violation of a state or Town of Johnstown law or regulation.

(c) The Authority shall conduct a review of all licenses at least annually and in addition to examining the factors enumerated in this subsection, may hold a hearing on each license at which the general public shall be invited to appear and provide testimony as to the effects of the license on the surrounding community and the town of Johnstown at large and the Authority may take such views into consideration when deciding whether to continue or renew such license.

Sec. 6-200-230 Violations and penalties.

In addition to the possible denial, suspension, revocation or nonrenewal of a license under the provisions of this Article, any person, including, but not limited to, any licensee, manager or employee of a medical/ retail marijuana business, or any customer of such business, who violates any of the provisions of this Article, shall be guilty of a misdemeanor unless a different penalty is provided herein.

Sec. 6-200-240 No Town of Johnstown liability; indemnification.

(a) By accepting a license issued pursuant to this Article, the licensee waives and releases the Town of Johnstown, its officers, elected officials, employees, attorneys, and agents from any liability for injuries, damages or liabilities of any kind that result from any arrest or prosecution of business owners, operators, employees, clients or customers for a violation of State or federal laws, rules or regulations.

(b) By accepting a license issued pursuant to this Article, all licensees, jointly and severally if more than one (1), agree to indemnify, defend and hold harmless the Town of Jownstown, its officers, elected officials, employees, attorneys, agents, insurers and self-insurance pool against all liability, claims and demands on account of any injury, loss or damage, including, without limitation, claims arising from bodily injury, personal injury, sickness, disease, death, property loss or damage, or any other loss of any kind whatsoever arising out of or in any manner connected with the operation of the retail marijuana business that is the subject of the license.

Sec. 6-200-250 Other laws remain applicable.

(a) To the extent the State adopts in the future any additional or stricter law or regulation governing the sale or distribution of medical/ retail marijuana, the additional or stricter regulation shall control the establishment or operation of any medical/ retail marijuana business in the Town of

Johnstown. Compliance with any applicable state law or regulation shall be deemed an additional requirement for issuance or denial of any license under this Article, and noncompliance with any applicable state law or regulation shall be grounds for revocation or suspension of any license issued hereunder.

(b) If the State prohibits the sale or other distribution of marijuana through medical/ retail marijuana centers, any license issued hereunder shall be deemed immediately revoked by operation of law.

Sec. 6-200-260 Severability.

If any section, sentence, clause, phrase, word or other provision of this Article is for any reason held to be unconstitutional or otherwise invalid, such holding shall not affect the validity of the remaining sections, sentences, clauses, phrases, words or other provisions of this Article or the validity of this Article as an entirety, it being the legislative intent that this Article shall stand, notwithstanding the invalidity of any section, sentence, clause, phrase, word or other provision.

Sec. 6-200-270 Administrative regulations; Action by the Town Council.

(a) The Town of Johnstown Manager is authorized to promulgate such rules and regulations as are necessary to effectuate the implementation, administration and enforcement of this Article.

(b) The Town Council shall be permitted to lessen any restriction contained in this Article.

(c) Should the Town Council refer this Initiated Ordinance to the registered electors of the Town of Johnstown at a regular or special municipal election, this Initiated Ordinance shall take effect immediately upon certification by the designated election official that a majority of registered electors voted in favor of this Ordinance at such regular or special election.

(d) If any section, sentence, clause, phrase, word or other provision of this Ordinance is for any reason held to be unconstitutional or otherwise invalid, such holding shall not affect the validity of the remaining sections, sentences, clauses, phrases, words or other provisions of this Ordinance or the validity of this Ordinance as an entirety, it being the legislative intent that this Article shall stand, notwithstanding the invalidity of any section, sentence, clause, phrase, word or other provision.

PETITION REPRESENTATIVES

Name	Address
1. Autumn Todd	3324 Riva Ridge Drive, Fort Collins, Co 80526
2. Tom Wilczynski	4255 Rainbow Lane, Loveland, Co 80538

Petition Section Number _____

WARNING:

IT IS AGAINST THE LAW:

For anyone to sign any initiative or referendum petition with any name other than his or her own or to knowingly sign his or her name more than once for the same measure or to knowingly sign a petition when not a registered elector who is eligible to vote on the measure.

DO NOT SIGN THIS PETITION UNLESS YOU ARE A
REGISTERED ELECTOR AND ELIGIBLE TO VOTE ON THIS MEASURE
TO BE A REGISTERED ELECTOR YOU MUST
BE A CITIZEN OF COLORADO AND REGISTERED TO VOTE.

Do not sign this petition unless you have read or had read to you the proposed initiative or referred measure or the summary in its entirety and understand its meaning.

SUMMARY OF PROPOSED INITIATIVE:

This initiative seeks to permit medical and retail marijuana business establishments within the town of Johnstown and implement regulations related thereto, including, but not limited to, the creation of a licensing authority, the requirements to obtain a license and pay a license fee and guidelines regarding the location of the business establishments, signage, and advertising.

1	Signature	Printed Name		Date of Signing
	Residence Address (Street & Number)	Town	County	
2	Signature	Printed Name		Date of Signing
	Residence Address (Street & Number)	Town	County	
3	Signature	Printed Name		Date of Signing
	Residence Address (Street & Number)	Town	County	
4	Signature	Printed Name		Date of Signing
	Residence Address (Street & Number)	Town	County	
5	Signature	Printed Name		Date of Signing
	Residence Address (Street & Number)	Town	County	

Municipal Retail Marijuana Status									
	Sales	Cultivation	Manufacturing	Testing	Delivery	On-site Consumption	Tax Information	Notes	Site/Code
Aguilar									Aguilar Municipal Code
Akron									Akron Municipal Code
Alamosa				√			5% sales tax on retail sales (not currently allowed)		Alamosa Municipal Code
Alma	√	√	√	√					Alma Municipal Code
Antonito	√								Antonito Retail Store
Arriba								Permanent moratorium.	Link to Town Ordinances
Arvada									Arvada Municipal Code
Aspen	√	√	√	√					Aspen Municipal Code
Ault									Ault Municipal Code, Chapter 9.34
Aurora	√	√	√	√	√		5% excise tax, 4% sales tax on retail with authority up to 10%		Aurora Marijuana Enforcement Division
Avon									Avon Municipal Code
Basalt	√						5% sales tax on retail marijuana		Basalt Municipal Code
Bayfield							$10 per retail transaction (sales not currently allowed)		Bayfield Municipal Code
Bennett									Bennett Municipal Code
Berthoud	√						7% sales and excise tax on retail sales		Berthoud Municipal Code (Retail marijuana not yet codified)
Bethune									
Black Hawk	√						5% sales on retail and medical		Black Hawk Municipal Code
Blanca		√	√				5% excise on sale or transfer of unprocessed retail marijuana		in CML files
Blue River									Blue River Municipal Code
Boone									
Boulder	√	√	√	√			5% excise tax, 3.5% sales tax		Boulder Municipal Code
Bow Mar									Bow Mar Municipal Code
Branson									
Breckenridge	√	√	√				5% excise tax on all sales of marijuana		Breckenridge Municipal Code
Brighton									Brighton Municipal Code
Brookside									Brookside Marijuana Ordinance
Broomfield	√			√	√		5% excise tax	Prohibition ordinance for cult and mfg set to repeal on 4/1/25	Broomfield Municipal Code
Brush									Brush Municipal Code
Buena Vista	√						5% sales tax with authority up to 15%	Approved by voters November 2020	Buena Vista Municipal Code
Burlington									Burlington Municipal Code
Calhan									Calhan Zoning Code
Campo									CML Files
Cañon City							5% excise and sales, authority up to 10%	Moratorium with Ordinance 7-2014	Canon City Ordinances
Carbonate									
Carbondale	√	√	√	√			sales tax 5%, excise tax 5%		Carbondale Municipal Code
Castle Pines									Castle Pines Zoning Ordinance Section 206
Castle Rock									Castle Rock Municipal Code
Cedaredge	√						5% sales tax	Approved by voters November, 2020	Cedaredge Municipal Code
Centennial									Centennial Municipal Code
Center								Defeated by voters 11/19	
Central City	√						5% on retail sales		Central City Municipal Code
Cheraw									
Cherry Hills Village									Cherry Hills Municipal Code
Cheyenne Wells									CML Files
Coal Creek									CML Files
Cokedale									
Collbran								Permanent moratorium	Collbran Municipal Code
Colorado Springs						√			Colorado Springs Municipal Code
Columbine Valley									
Commerce City	√	√	√	√			7% sales tax, 5% excise tax		Commerce City Municipal Code
Cortez	√	√		√					Cortez Municipal Code
Craig	√	√	√	√			up tp 4% sales tax	Approved by voters 11/19	Craig Municipal Code
Crawford							5% sales with authority up to 10, 5% excise (sales not currently allowed)		Crawford Marijuana Ordinances
Creede									Creede Ordinance 375
Crested Butte	√		√	√					Crested Butte Municipal Code
Crestone	√						5% sales tax		CML Files
Cripple Creek									Cripple Creek Municipal Code
Crook									
Crowley									
Dacono									Dacono Municipal Code
De Beque	√	√	√	√			5% excise tax on sale and cultivation		Marijuana Page on De Beque Website
Deer Trail									
Del Norte									Del Norte Municipal Code
Delta							5% excise, 2% sales (sales not currently allowed)		Delta Municipal Code
Denver	√	√	√	√	√	√	5.5% sales tax, authorized up to 15%	approved delivery 4/21 to start by summer	Link to Denver's Marijuana Business Licenses Page
Dillon	√						5% sales tax; 5% excise		Dillon Municipal Code
Dinosaur	√	√	√	√			5% excise, 10% sales		Dinosaur Ordinance 3
Dolores	√	√	√	√			$5 occupation tax per sales transaction; 5% excise	Approved by voters 4/20	
Dove Creek									
Durango	√			√			3% sales tax		Durango Municipal Code
Eads									
Eagle	√	√	√	√			2.5% sales and 2.5% excise each increasing .5%/year up to 5%		Link to Eagle Marijuana Regulations Page
Eaton									Eaton Municipal Code
Eckley								Voted down 11/2020	
Edgewater	√	√	√	√					Edgewater Municipal Code
Elizabeth									Elizabeth Municipal Code
Empire	√	√	√				$5/transaction		Empire Ordinance 238
Englewood	√						3.5% with authority up to 5%		Englewood Municipal Code
Erie									Erie Municipal Code
Estes Park								Voted down 12/19	Estes Park Municipal Code
Evans									Evans Municipal Code
Fairplay									Fairplay Municipal Code
Federal Heights	√	√	√	√			5% sales tax with authority up to 10%, 5% excise tax with authority up to 10%		Federal Heights Marijuana Ordinance
Firestone									Firestone Municipal Code
Flagler									Prohibited (per email)
Fleming									
Florence				√			5% excise tax on wholesale		Florence Municipal Code
Fort Collins	√	√	√	√					Link to Fort Collins Marijuana Page

Municipal Retail Marijuana Status									
	Sales	Cultivation	Manufacturing	Testing	Delivery	On-site Consumption	Tax Information	Notes	Site/Code
Fort Lupton	√						3.1% sales tax with authority up to 10%	Approved by voters November, 2020	Fort Lupton Municipal Code
Fort Morgan									Fort Morgan Municipal Code
Fountain									Fountain Municipal Code
Fowler									Fowler Municipal Code
Foxfield									Foxfield Municipal Code
Fraser	√						5% sales tax		Fraser Municipal Code
Frederick									Frederick Municipal Code - Chapter 6
Frisco	√	√	√				5% sales tax		Frisco Taxation Code
Fruita							5% excise tax		Fruita Ordinance 2013-13
Garden City	√	√	√	√					Garden City Municipal Code
Genoa									
Georgetown	√		√				$5/transaction		Georgetown Municipal Code
Gilcrest									Gilcrest Municipal Code
Glendale	√	√	√	√		√			Glendale Municipal Code
Glenwood Springs	√	√	√	√			sales tax: 5% up to 15%, excise tax: 5%		Glenwood Springs Municipal Code
Golden									Golden Municipal Code
Granada									
Granby									Granby Municipal Code - Chapter 16
Grand Junction	√	√	√	√			5% sales tax, up to 15%; 3% excise tax, up to 10%	Approved by voters April 2021	Grand Junction Municipal Code
Grand Lake									Grand Lake Municipal Code - Chapter 7
Greeley									Greeley Municipal Code
Green Mountain Falls									Green Mountain Falls Ordinance 01-2013
Greenwood Village									Greenwood Village Municipal Code
Grover									
Gunnison	√	√	√	√			5% sales tax, 5% excise tax		Gunnison Municipal Code
Gypsum									Gypsum Municipal Code
Hartman									
Haswell									
Haxtun									
Hayden	√	√					7.5% excise tax with authority up to 15%		Hayden Municipal Code
Hillrose									
Holly									Holly Marijuana Prohibition Ordinance
Holyoke									Holyoke Ord. 7-2016
Hooper									
Hot Sulphur Springs									Hot Sulphur Springs - Ordinance
Hotchkiss							2% sales tax (up to 10%) in event sales are permitted by election		CML Files
Hudson									Hudson Land Development Code - Chapter 16
Hugo									Hugo Ordinance 237
Idaho Springs	√	√							Idaho Springs Municipal Code
Ignacio									Ignacio Ordinance 308 - Permanent Ban
Iliff									
Jamestown								Permanent moratorium	Jamestown Ordinance 2013-01
Johnstown									Johnstown Ordinance 2016-143
Julesburg									
Keenesburg									Keenesburg Municipal Code
Kersey									Kersey Municipal Code
Kim									
Kiowa								Voted down 11/2020	Kiowa Municipal Code - Chp. 6
Kit Carson									
Kremmling									
La Jara									
La Junta									La Junta Municipal Code
La Salle									CML Files
La Veta	√	√	√	√					La Veta Municipal Code
Lafayette	√	√	√	√			sales and excise tax 5%; up to 10%		Lafayette Municipal Code
Lake City									Lake City Municipal Code
Lakeside									
Lakewood	√	√						Approved by voters November 2020	Lakewood Municipal Code
Lamar									Lamar Municipal Code - Chp. 6
Larkspur									Larkspur Municipal Code
Las Animas	√	√	√	√			5.75% sales tax		Approved November 2018 election
Leadville	√	√	√	√			5% excise tax, up to 10%		Leadville Municipal Code
Limon									Limon Municipal Code
Littleton	√						Special 3% sales tax on retail	Approved by voters November 2020	Littleton Municipal Code - Chp. 21
Lochbuie									Lochbuie Municipal Code
Log Lane Village	√	√	√	√			5% excise tax		
Lone Tree									Lone Tree Municipal Code
Longmont	√						3.5% sales tax; 3% excise tax with authority up to 15%		Longmont Marijuana Ordinance
Louisville	√	√		√			5% excise tax on cultivation		Louisville Municipal Code
Loveland								Defeated by voters 11/19	Loveland Municipal Code - 7.65.20
Lyons	√	√	√	√			3.5% sales; 5% excise tax; both up to 10%		Lyons Municipal Code
Manassa									
Mancos	√	√	√	√			occupation tax up to $10/transaction		Mancos Municipal Code
Manitou Springs	√			√			6%, authority up to 10%	cultivation and manufacturing prohibited	Manitou Springs Municipal Code
Manzanola									
Marble									Marble Ordinance 8-2014
Mead								Defeated by voters 11/19	Mead Municipal Code
Meeker									Meeker Municipal Code
Merino									
Milliken	√	√	√	√			occupation tax up to $10/transaction		Milliken Municipal Code
Minturn									Minturn Municipal Code
Moffat	√	√	√				2% sales tax first year, increasing to 5% in year two		CML Files
Monte Vista							18% excise tax, 18% sales tax		Monte Vista Municipal Code
Montezuma									Montezuma Ordinance 3-2014
Montrose									Montrose Ordinance 2321
Monument									Monument Municipal Code
Morrison									Morrison Municipal Code
Mountain View	√	√	√	√			5% sales tax		Mountain View Marijuana Ordinance
Mountain Village									CML Files
Mt. Crested Butte									Mt. Crested Butte Chp. 21
Naturita	√	√	√	√			2% sales tax, with authority up to 10; excise tax of 5%		
Nederland	√	√	√				3.75% sales tax		Nederland Municipal Code
New Castle									New Castle Municipal Code
Northglenn	√	√	√		√		4% sales tax, up to 10%	Delivery approved June 2021	Northglenn Municipal Code

Municipal Retail Marijuana Status									
	Sales	Cultivation	Manufacturing	Testing	Delivery	On-site Consumption	Tax Information	Notes	Site/Code
Norwood	√		√	√			2% sales tax, up to 10%; 5% excise tax	Approved by voters 4/20	
Nucla									
Nunn		√					5% excise tax		CML Files
Oak Creek	√	√	√	√					Oak Creek Municipal Code
Olathe									Olathe Municipal Code, Title IV, Chapter 4
Olney Springs									CML Files
Ophir									
Orchard City							up to 5% sales tax, up to 5% excise tax, up to $10 occupation tax for each sale transaction		Orchard City July 2017 Minutes
Ordway	√		√	√					Ordway Municipal Code
Otis									Otis Ordinance 173
Ouray							5% with authority up to 10%		Ouray Council Minutes
Ovid									
Pagosa Springs	√	√							Pagosa Springs Municipal Code
Palisade	√	√	√	√			5% excise tax; Occupation tax of $5.00 for each sales transaction that is less than $100, $10.00 for each sales transaction between $100.00 and $500.00 and $25.00 for each sales transaction of $500.00 or more		Link to Palisade Marijuana Information
Palmer Lake		√					5% sales tax with authority up to 10% (sales not currently allowed); 5% excise tax with authority up to 10%		Palmer Lake Municipal Code, Section 5.40
Paoli									
Paonia	√						excise and sales tax of 5%, both with authority up to 10%; $5.00 occupation tax per sales transaction	Approved by voters November 2020	Paonia Ordinance 2017-12
Parachute	√	√	√	√	√	√	5% excise tax		Parachute Municipal Code
Parker									Parker Municipal Code
Peetz									CML Files
Pierce									CML Files
Pitkin									CML Files
Platteville									Platteville Municipal Code
Poncha Springs							5% sales tax; 5% excise tax (sales not currently allowed)		Poncha Springs Ordinance 2013-1
Pritchett									
Pueblo	√	√	√	√			8% excise tax with authority up to 15%		Pueblo Municipal Code
Ramah									
Rangley									
Raymer									
Red Cliff	√	√	√	√			5% sales tax, 15% excise tax		CML Files
Rico	√	√	√	√			10% sales and 10% excise on unprocessed retail marijauna sold or transferred from cultivation facility to retail facility		Rico Marijuana Ordinance
Ridgway	√	√	√	√					Ridgway Municipal Code
Rifle	√	√					5% excise tax		Rifle Municipal Code
Rockvale									
Rocky Ford	√						6% sales tax with authority up to 8%		Rocky Ford Municipal Code
Romeo	√	√	√	√				Approved by voters November 2020	
Rye									
Saguache									Saguache Ordinance 2013-1
Salida	√								Salida Municipal Code
San Luis	√	√	√						San Luis Municipal Code
Sanford									
Sawpit									
Sedgwick	√	√	√	√			5% sales tax; 2% excise tax on cultivation; occupation tax of $5-$25 per wholesale manufacturing transaction		In CML files
Seibert									
Severance							7% sales tax (sales not currently allowed)		Severance Municipal Code
Sheridan							5% excise		Sheridan Municipal Code
Silt	√	√	√	√			3.5% retail sales		Silt Municipal Code
Silver Cliff									
Silver Plume	√						4% and no greater than 8%		Silver Plume Ordinance 335/336
Silverthorne	√	√					5% excise tax on mj and products		Silverthorne Municipal Code
Silverton	√	√	√	√			1% sales tax and 3% excise tax		Silverton Municipal Code
Simla									Simla Municipal Code - Chp. 2
Snowmass Village	√						5% sales tax, up to 15%		Ordinance 3, Series 2019
South Fork							5% sales tax		South Fork Ordinance 15-06
Springfield									
Starkville									
Steamboat Springs	√	√	√	√					Steamboat Springs Municipal Code
Sterling									
Stratton									CML Files
Sugar City	√								
Superior					√				Superior Municipal Code
Swink									
Telluride	√	√	√	√					Telluride Municipal Code
Thornton	√			√	√		5% sales tax	Approved delivery April 2021	Thornton Municipal Code
Timnath									Timnath Municipal Code
Trinidad	√	√	√	√			5% sales tax		Trinidad Marijuana Licensing Application
Two Buttes									
Vail									Vail Municipal Code
Victor									Victor Municipal Code
Vilas									
Vona									
Walden									CML Files
Walsenburg	√	√	√	√			5% excise tax		Link to Walsenburg's Marijuana Page
Walsh									
Ward									
Wellington									In CML files
Westcliffe									Westcliffe Municipal Code
Westminster									Westminster Municipal Code
Wheat Ridge	√	√	√	√			3.5% sales tax		Wheat Ridge Municipal Code
Wiggins									Wiggins Marijuana Ordinance
Wiley									
Williamsburg									Prohibited by Chapter 2 Article II of Code
Windsor									Windsor Municipal Code
Winter Park							5% sales tax (sales not currently allowed)		Winter Park Municipal Code

Municipal Retail Marijuana Status									
	Sales	Cultivation	Manufacturing	Testing	Delivery	On-site Consumption	Tax Information	Notes	Site/Code
Woodland Park									Woodland Park Municipal Code
Wray									
Yampa									
Yuma							5% sales tax with authority up to 10 (sales not currently allowed)		Yuma Municipal Code

√	Permitted					
Totals:	89	64	58	57	7	4