



Town of Johnstown

TOWN COUNCIL REGULAR MEETING

450 S. Parish, Johnstown, CO
Monday, August 16, 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

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.

- [1.](#) Minutes August 2, 2021
- [2.](#) July 2021 Financial Statements
- [3.](#) List of Bills - August 2021
- [4.](#) Appointment of Planning and Zoning Commission Members
- [5.](#) Water and Sewer Service Agreement - LFRA Station 10 (4301 Ronald Reagan Blvd.)
- [6.](#) Contract Award - Land Use Code Update

TOWN MANAGER REPORT

- [7.](#) Town Manager's Report

TOWN ATTORNEY REPORT

PUBLIC HEARING

- [8.](#) Ordinance 2021-206 Approving the North Ridge P.U.D. Outline Development Plan
- [9.](#) Ordinance 2021- 207 Amending Article IV of Chapter 7 of the Municipal Code Concerning Trash Collection

NEW BUSINESS

- [10.](#) Resolution 2021-26: Colorado Main Street Program Grant
- [11.](#) Award Design Build services for the North 2nd Street Widening at Hillsborough Ditch

[12.](#) Award Design Services for Water Treatment Plant

COUNCIL REPORTS AND COMMENTS

MAYOR'S COMMENTS

EXECUTIVE SESSION

13. For the purpose of determining positions relative to matters that may be subject to negotiations, developing strategy for negotiations, and/or instructing negotiators, under C.R.S. Section 24-6-402(4)(a). Regarding Economic Development.

INFORMATIONAL ITEMS

ADJOURN

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.

The Community That Cares

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Town of Johnstown

TOWN COUNCIL REGULAR MEETING

450 S. Parish, Johnstown, CO
Monday, August 02, 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 Bill Stevens
Councilmember Amy Tallent
Councilmember Chad Young

Staff Present: Matt LeCerf, Town Manager, Avi Rocklin, Town Attorney, Kim Meyer, Planning Director, Marco Carani, Public Works Director, Mitzi McCoy, Finance Director and Sarah Crosthwaite, Economic Development Manager.

AGENDA APPROVAL

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

SPECIAL PRESENTATIONS

Business of the Month - Sarah Crosthwaite, Economic Development Manager introduced Cinco Brothers Barbershop as the August Business of the Month.

PUBLIC COMMENT

Steve Allman of 1122 Cottonwood Court addressed Council on water quality concerns. He appreciated the work the Town was doing to address the quality and trusting they are planning for any further issues.

Jim Hatfield of 345 Hickory Lane asked Council if it was going to be mandatory for all residents to use the new trash company and expressed concerns with the recent thefts of trucks in the Clearview Subdivision.

CONSENT AGENDA

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Page 2

August 2, 2021

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

- Minutes July 19, 2021
- Ordinance 2021-204 Annexing Certain Unincorporated Lands Located in the Northwest Quarter of the Southeast Quarter of Section 22, Township 5 North, Range 68 West of the 6th P.M., County of Larimer, State of Colorado, Consisting of Approximately 36.971 Acres and Known as the North Ridge Annexation
- Second Reading Ordinance 2021-205 Approval of PUD-MU Zoning of the Property Known as North Ridge Annexation Located in the Northwest Quarter of the Southeast Quarter of Section 22, Township 5 North Range 68 West of the 6th P.M., County of Larimer, State of Colorado and Consisting of Approximately 36.971 Acres
- Resolution 2021-23 A Resolution Finding Substantial Compliance for Initiating Annexation Proceedings and Setting a Public Hearing Date for the Held Farm Annexation
- Resolution 2021-24 A Resolution Finding Substantial Compliance for Initiating Annexation Proceedings and Setting a Public Hearing Date for the Whitehall Annexation

NEW BUSINESS

1. Resolution 2021-25 Resolution Amending the Consolidated Town Fee Schedule - The resolution adopts the amended fee schedule. Motion made by Councilmember Tallent, seconded by Councilmember Young to approve Resolution 2021-25 Amending the Consolidated Town Fee Schedule. Motion carried with a unanimous vote.

EXECUTIVE SESSION

An executive session regarding matters subject to negotiation, developing a strategy for negotiations and instructing negotiators pursuant to C.R.S. 24-6-402(4)(b) related to railroad crossing license agreement.

It was moved by Councilmember Berg and seconded by Councilmember Tallent to convene into Executive Session regarding matters subject to negotiation, developing a strategy for negotiations and instructing negotiators pursuant to C.R.S. 24-6-402(4)(b) related to railroad crossing license agreement. The Regular Meeting was recessed at 7:52 p.m. The Mayor reconvened the Regular Meeting at 8:31 p.m. and stated the only item discussed was what was stated in the motion.

ADJOURN

The meeting adjourned at 8:32 p.m.

Mayor

Town Clerk

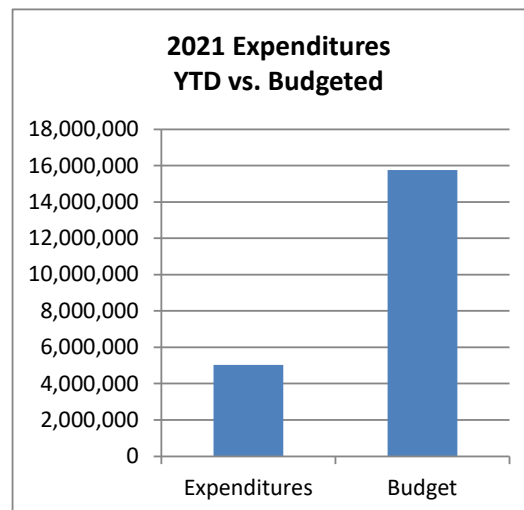
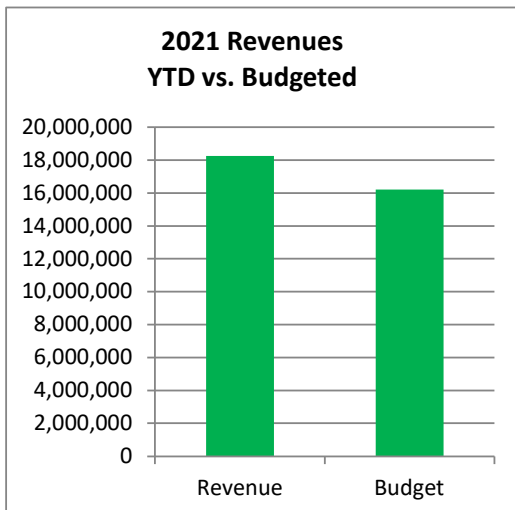
Town of Johnstown, Colorado
Statement of Revenues, Expenditures, and Changes in
Fund Balances - General Fund
Period Ending Jul 31, 2021
Unaudited

Item #2.

General Fund	2021 Actuals July	2021 Adopted Budget	% Complete
Beginning Fund Balance	53,447,470	53,447,470	
Revenues:			
Taxes & Fees	14,413,305	14,917,027	96.6%
Licenses & Permits	1,288,524	899,350	143.3%
Fines & Forfeitures	132,440	122,000	108.6%
Intergovernmental	30,540	40,000	76.4%
Earnings on Investment	73,292	112,000	65.4%
Miscellaneous Revenue	2,304,940	121,500	1897.1%
Transfers In	-	-	
Total Operating Revenues	18,243,041	16,211,877	112.5%
Expenditures:			
Legislative	926,235	1,675,200	55.3%
Town Manager	322,830	968,280	33.3%
Town Clerk	209,126	413,885	50.5%
Finance	200,591	265,230	75.6%
Planning	430,492	641,740	67.1%
Building Inspections	129,108	259,350	49.8%
Police	1,851,354	3,765,193	49.2%
Public Works	115,400	214,375	53.8%
Buildings	100,563	312,300	32.2%
Transfers Out	743,909	7,242,457	10.3%
Total Expenditures	5,029,607	15,758,010	31.9%
Excess (Deficiency) of Revenues and Other Sources over Expenditures	13,213,434	453,867	
Prior Period Adjustment			
Ending Fund Balance*	66,660,904	53,901,337	

* - Unaudited

58% of the fiscal year has elapsed



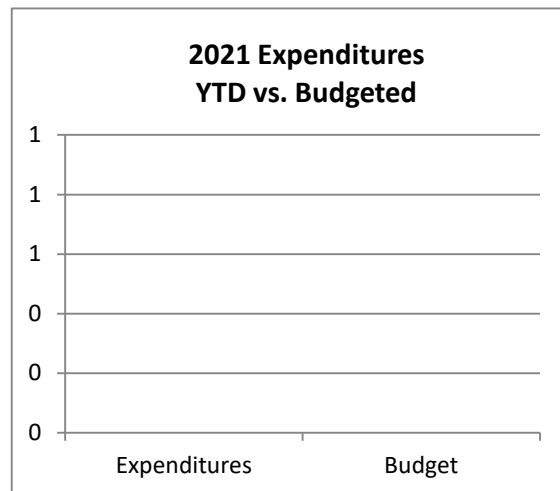
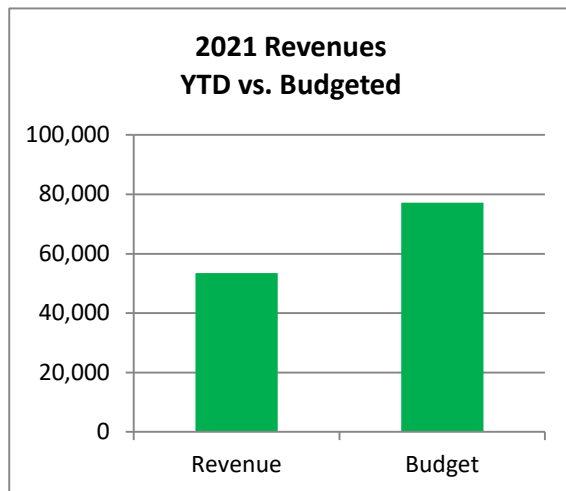
Town of Johnstown, Colorado
Statement of Revenues, Expenditures, and Changes in
Fund Balances - Conservation Trust Fund
Period Ending Jul 31, 2021
Unaudited

Item #2.

Conservation Trust Fund	2021 Actuals July	2021 Adopted Budget	% Complete
Beginning Fund Balance	8,159	8,159	
<u>Revenues:</u>			
Intergovernmental	47,986	77,100	62.2%
Earnings on Investment	26	100	26.0%
Total Operating Revenues	48,012	77,200	62.2%
<u>Expenditures:</u>			
Operations	-	-	
Capital Outlay	-	-	
Total Expenditures	-	-	
Excess (Deficiency) of Revenues and Other Sources over Expenditures	48,012	77,200	
Ending Fund Balance*	56,171	85,359	

* - Unaudited

58% of the fiscal year has elapsed



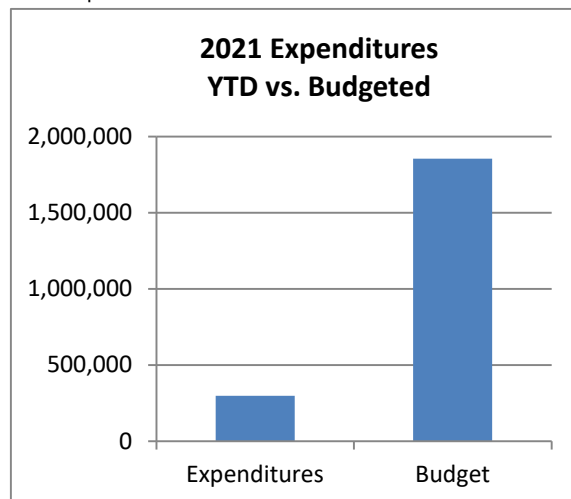
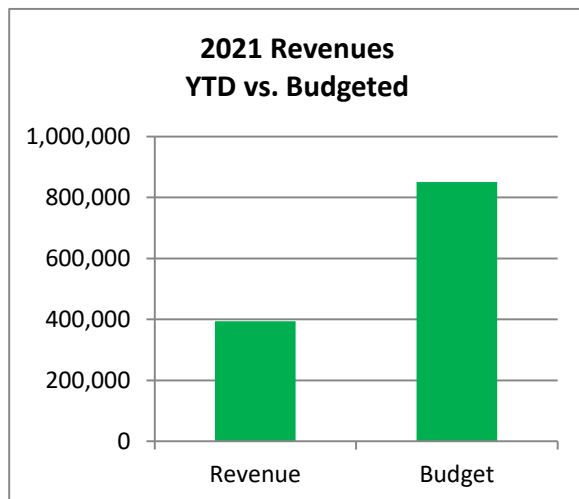
Town of Johnstown, Colorado
Statement of Revenues, Expenditures, and Changes in
Fund Balances - Parks and Open Space Fund
Period Ending July 31, 2021
Unaudited

Item #2.

	2021 Actuals July	2021 Adopted Budget	% Complete
Parks and Open Space Fund			
Beginning Fund Balance	7,286,213	7,286,213	
<u>Revenues:</u>			
Taxes & Fees	341,961	401,910	85.1%
Miscellaneous Revenue	50,613	207,000	24.5%
Transfers In	0	220,000	0.0%
Total Operating Revenues	394,401	850,910	46.4%
<u>Expenditures:</u>			
Operations	224,821	614,410	36.6%
Capital Outlay	73,223	1,240,000	5.9%
Transfers Out	-	-	
Total Expenditures	298,043	1,854,410	16.1%
Excess (Deficiency) of Revenues and Other Sources over Expenditures	96,358	(1,003,500)	
Ending Fund Balance*	7,382,571	6,282,713	

* - Unaudited

58% of the fiscal year has elapsed



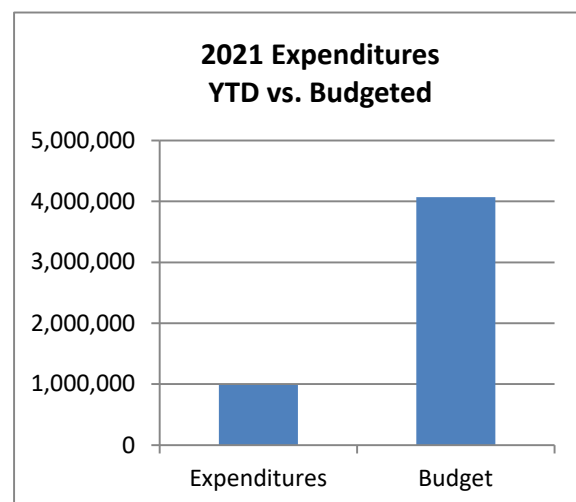
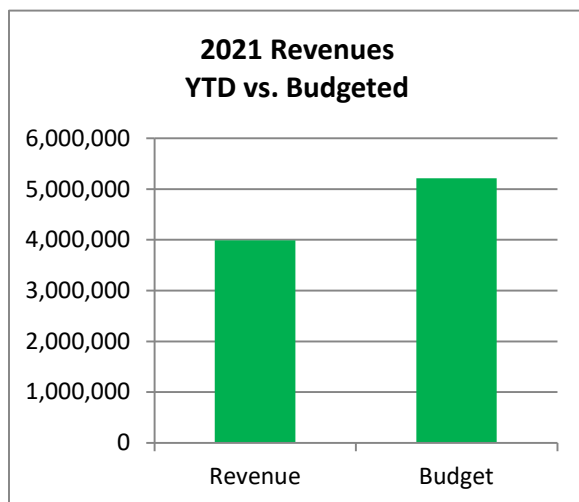
Town of Johnstown, Colorado
Statement of Revenues, Expenditures, and Changes in
Fund Balances - Street and Alley Fund
Period Ending July 31, 2021
Unaudited

Item #2.

Street and Alley Fund	2021 Actuals July	2021 Adopted Budget	%
			Complete
Beginning Fund Balance	9,867,537	9,867,537	
<u>Revenues:</u>			
Taxes & Fees	2,366,628	2,838,400	83.4%
Intergovernmental	168,168	1,207,666	13.9%
Charges for Services	433,783	715,477	60.6%
Capital Investment Fees	1,021,187	420,550	242.8%
Earnings on Investment	2,584	28,000	9.2%
Miscellaneous Revenues	-	-	0.0%
Total Operating Revenues	<u>3,992,351</u>	<u>5,210,093</u>	76.6%
<u>Expenditures:</u>			
Operations & Maintenance	941,808	3,049,400	30.9%
Capital	<u>46,699</u>	<u>1,019,000</u>	4.6%
Total Expenditures	<u>988,507</u>	<u>4,068,400</u>	24.3%
Excess (Deficiency) of Revenues and Other Sources over Expenditures	<u>3,003,843</u>	<u>1,141,693</u>	
Ending Fund Balance*	<u><u>12,871,380</u></u>	<u><u>11,009,230</u></u>	

* - Unaudited

58% of the fiscal year has elapsed



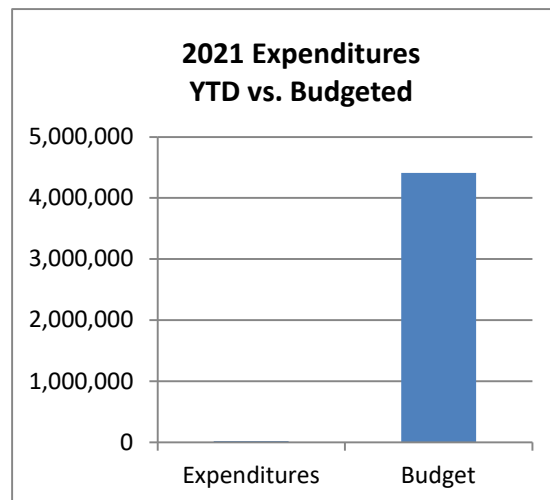
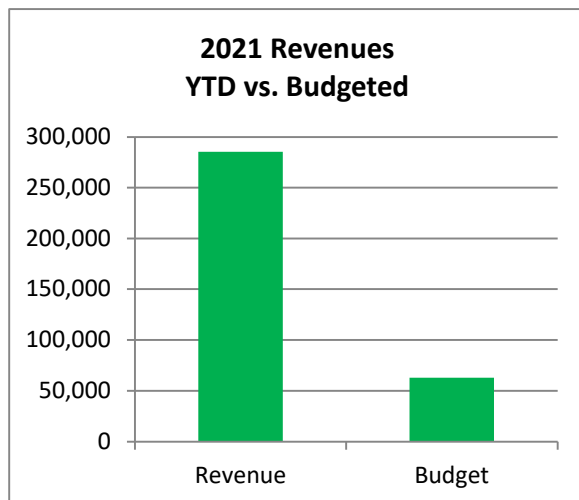
Town of Johnstown, Colorado
Statement of Revenues, Expenditures, and Changes in
Fund Balances - Capital Projects Fund
Period Ending July 31, 2021
Unaudited

Item #2.

	2021 Actuals July	2021 Adopted Budget	% Complete
Capital Projects Fund			
Beginning Fund Balance	13,928,958	13,928,958	
<u>Revenues:</u>			
Taxes and Fees	281,840	111,940	251.8%
Miscellaneous Revenue	-	-	
Interest	3,465	36,000	9.6%
Transfers In	-	(85,100)	
Total Operating Revenues	285,305	62,840	454.0%
<u>Expenditures:</u>			
Capital Outlay	22,301	4,410,200	0.0%
Transfers Out	-	-	0.0%
Total Expenditures	22,301	4,410,200	0.5%
Excess (Deficiency) of Revenues and Other Sources over Expenditures	263,004	(4,347,360)	
Ending Fund Balance*	14,191,962	9,581,598	

* - Unaudited

58% of the fiscal year has elapsed



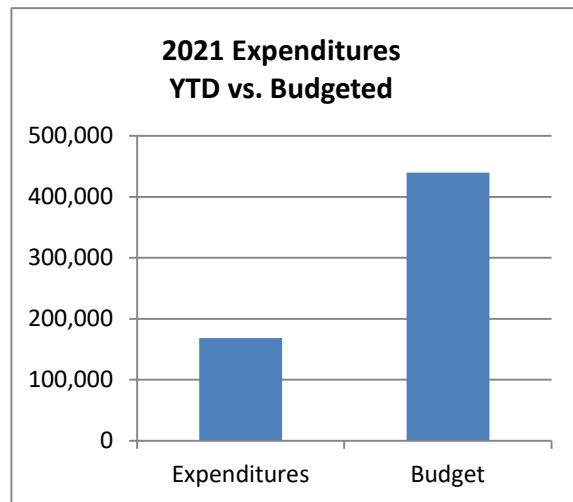
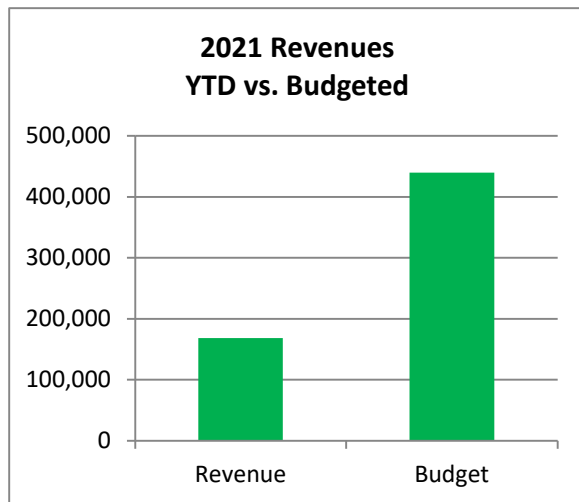
Town of Johnstown, Colorado
Statement of Revenues, Expenditures, and Changes in
Fund Balances - Tax Allocation Fund
Period Ending July 31, 2021
Unaudited

Item #2.

Tax Allocation Fund	2021 Actuals July	2021 Adopted Budget	% Complete
Beginning Fund Balance	95,951	95,951	
<u>Revenues:</u>			
Taxes & Fees	168,204	439,900	38.2%
Earnings on Investment	-	100	0.0%
Total Operating Revenues	168,204	440,000	38.2%
<u>Expenditures:</u>			
Miscellaneous	168,204	440,000	38.2%
Total Expenditures	168,204	440,000	38.2%
Excess (Deficiency) of Revenues and Other Sources over Expenditures	-	-	
Ending Fund Balance*	95,951	95,951	

* - Unaudited

58% of the fiscal year has elapsed



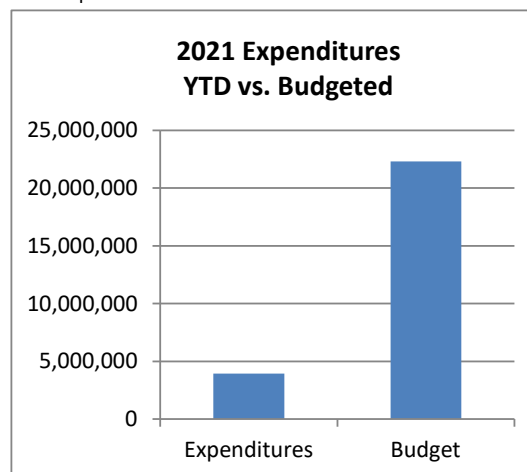
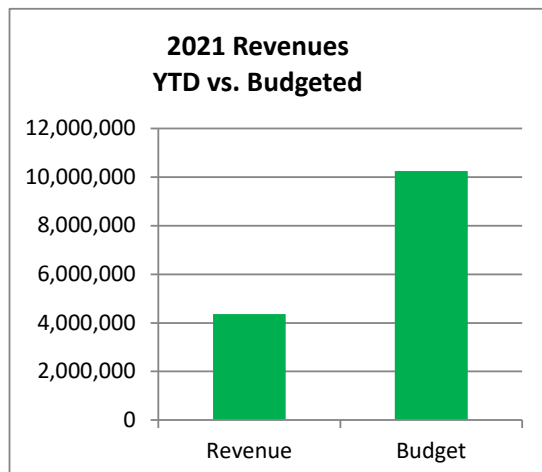
Town of Johnstown, Colorado
Statement of Revenues, Expenditures, and Changes in
Fund Balances - Water Fund
Period Ending July 31, 2021
Unaudited

Item #2.

Water Fund	2021 Actuals July	2021 Adopted Budget	% Complete
Beginning Cash Balance	21,003,127	21,003,127	
<u>Revenues:</u>			
Charges for Services	2,293,711	2,902,500	79.0%
Total Operating Revenues	2,293,711	2,902,500	79.0%
<u>Expenses:</u>			
Administration	106,185	685,300	15.5%
Operations	1,310,053	1,979,973	66.2%
Capital Outlay	2,320,416	19,235,000	12.1%
Depreciation	207,918	410,000	50.7%
Transfers Out	-	-	
Total Operating Expenses	3,944,573	22,310,273	17.7%
Operating Income (Loss)	(1,650,862)	(19,407,773)	
<u>Non-Operating Revenues (Expenses)</u>			
Tap Fees	1,015,460	965,550	105.2%
Capital Investment Fees	867,993	816,294	106.3%
Misc. Revenues	174,427	5,466,500	3.2%
Interest Expense	5,093	95,000	5.4%
Total Non-Operating Revenues (Expenses)	2,062,973	7,343,344	28.1%
Excess (Deficiency) of Revenues and Other Sources over Expenses	412,111	(12,064,429)	
Ending Cash Balance*	21,415,238	8,938,698	

* - Unaudited

58% of the fiscal year has elapsed



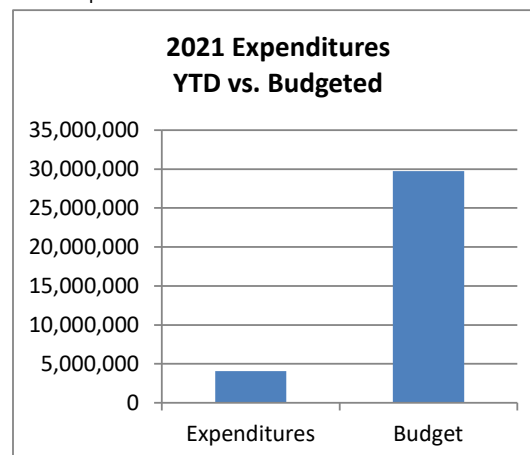
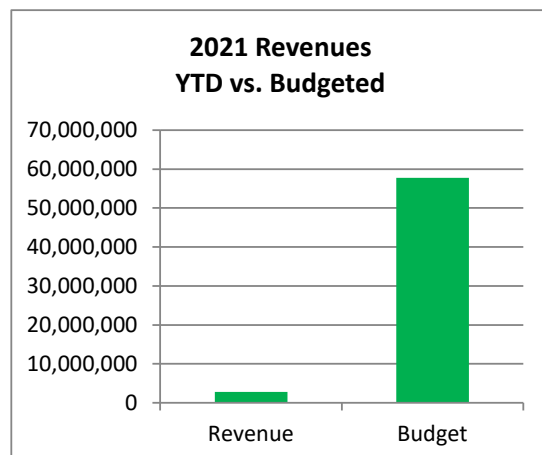
Town of Johnstown, Colorado
Statement of Revenues, Expenditures, and Changes in
Fund Balances - Sewer Fund
Period Ending July 31, 2021
Unaudited

Item #2.

Sewer Fund	2021 Actuals July	2021 Adopted Budget	% Complete
Beginning Cash Balance	9,416,795	9,416,795	
<u>Revenues:</u>			
Charges for Services	1,551,761	2,123,500	73.1%
Total Operating Revenues	1,551,761	2,123,500	73.1%
<u>Expenses:</u>			
Administration	94,449	307,200	30.7%
Operations	954,065	1,814,153	52.6%
Capital Outlay	2,887,942	25,386,600	11.4%
Depreciation	131,518	235,000	56.0%
Debt Service	-	1,998,069	0.0%
Total Operating Expenses	4,067,974	29,741,022	13.7%
Operating Income (Loss)	(2,516,213)	(27,617,522)	
<u>Non-Operating Revenues (Expenses)</u>			
Capital Improvement Fees	1,262,160	1,192,000	105.9%
Misc. Revenues	14,789	2,000	739.5%
Interest Expense	727	7,200	10.1%
Debt Proceeds	-	54,450,000	0.0%
Total Non-Operating Revenues (Expenses)	1,277,676	55,651,200	2.3%
Excess (Deficiency) of Revenues and Other Sources over Expenses	(1,238,537)	28,033,678	
Ending Cash Balance*	8,178,258	37,450,473	

* - Unaudited

58% of the fiscal year has elapsed



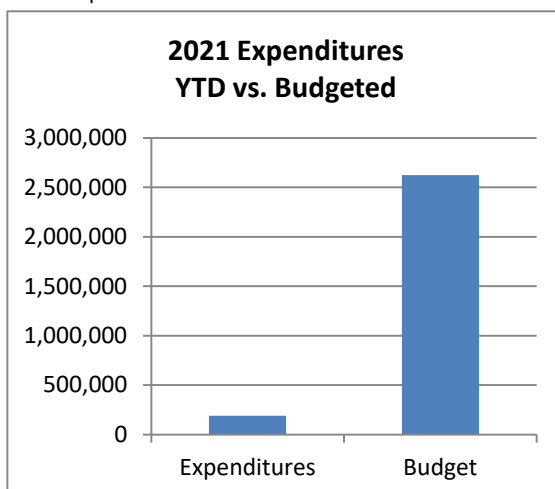
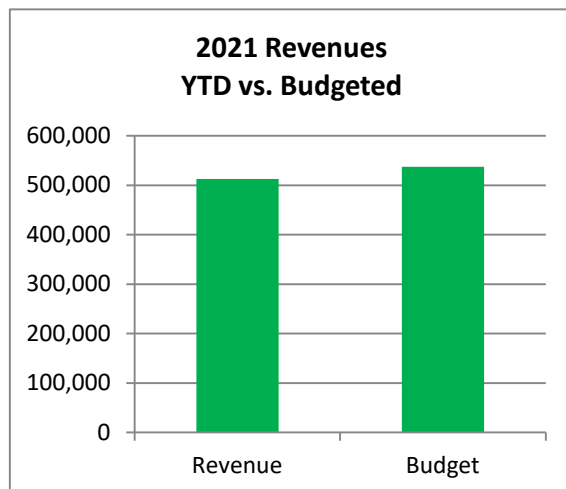
Town of Johnstown, Colorado
Statement of Revenues, Expenditures, and Changes in
Fund Balances - Drainage Fund
Period Ending July 31, 2021
Unaudited

Item #2.

Drainage Fund	2021 Actuals July	2021 Adopted Budget	% Complete
Beginning Cash Balance	3,459,518	3,459,518	
<u>Revenues:</u>			
Charges for Services	276,023	457,200	60.4%
Total Operating Revenues	276,023	457,200	60.4%
<u>Expenses:</u>			
Administration	62,502	144,250	43.3%
Operations	85,107	309,930	27.5%
Capital Improvements	42,109	2,168,750	1.9%
Transfer Out	-	-	
Total Operating Expenses	189,718	2,622,930	7.2%
Operating Income (Loss)	86,305	(2,165,730)	
<u>Non-Operating Revenues (Expenses)</u>			
Capital Revenues	235,905	75,000	314.5%
Misc. Revenues	-	-	
Interest Expense	739	5,400	13.7%
Total Non-Operating Revenues (Expenses)	236,644	80,400	294.3%
Excess (Deficiency) of Revenues and Other Sources over Expenses	322,948	(2,085,330)	
Ending Cash Balance*	3,782,466	1,374,188	

* - Unaudited

58% of the fiscal year has elapsed



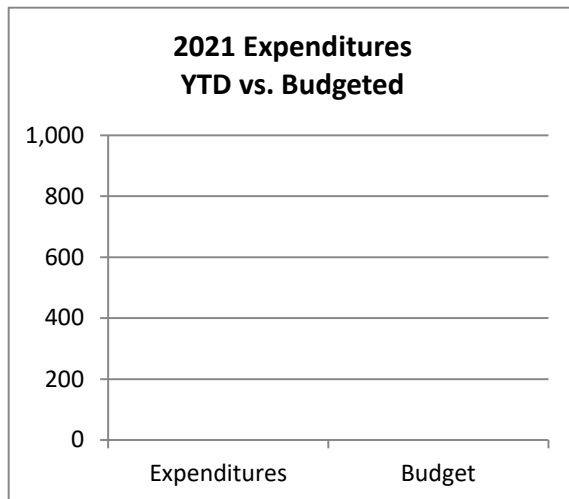
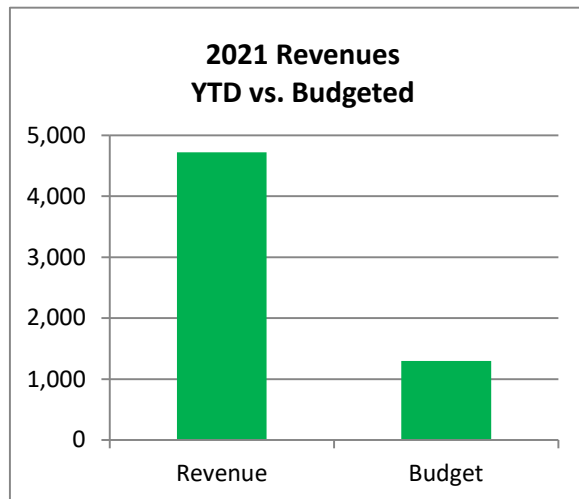
Town of Johnstown, Colorado
Statement of Revenues, Expenditures, and Changes in
Fund Balances - Cemetery Perpetual Fund
Period Ending July 31, 2021
Unaudited

Item #2.

Cemetery Perpetual Fund	2021 Actuals July	2021 Adopted Budget	% Complete
Beginning Fund Balance	144,554	144,554	
<u>Revenues:</u>			
Miscellaneous Revenue	4,680	900	520.0%
Earnings on Investment	43	400	10.8%
Total Operating Revenues	4,723	1,300	363.3%
<u>Expenditures:</u>			
Operations & Maintenance	-	-	
Capital Outlay	-	-	
Transfers Out	-	-	
Total Expenditures	-	-	
Excess (Deficiency) of Revenues and Other Sources over Expenditures	4,723	1,300	
Ending Fund Balance*	149,277	145,854	

* - Unaudited

58% of the fiscal year has elapsed



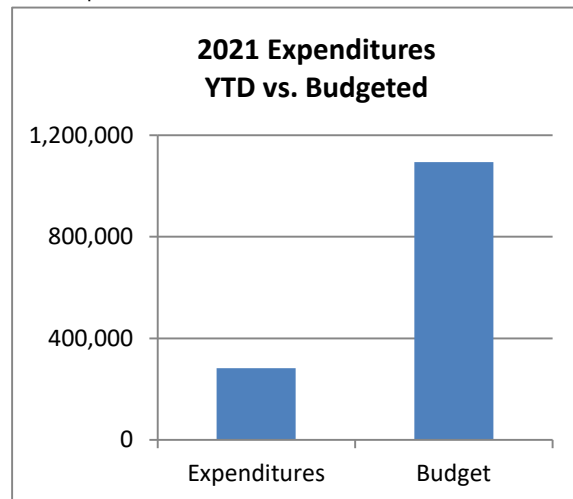
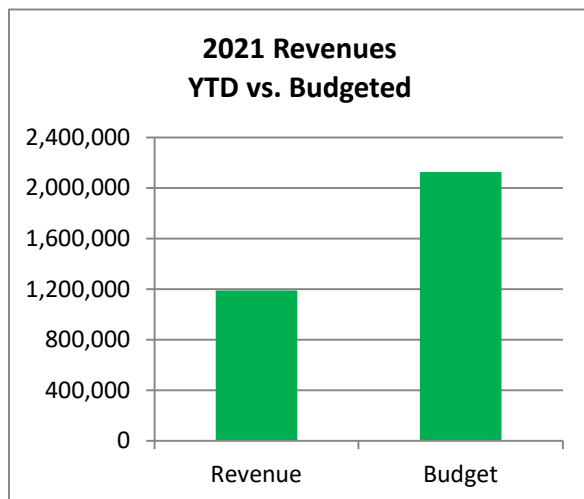
Town of Johnstown, Colorado
Statement of Revenues, Expenditures, and Changes in
Fund Balances - Library Fund
Period Ending July 31, 2021
Unaudited

Item #2.

Library Fund	2021 Actuals July	2021 Adopted Budget	% Complete
Beginning Fund Balance	5,315,977	5,315,977	
<u>Revenues:</u>			
Intergovernmental	450,275	703,095	64.0%
Miscellaneous Revenue	876	11,000	8.0%
Capital Investment Fees	142,352	215,000	66.2%
Interest	1,437	60,000	2.4%
<i>Transfers In</i>	<u>594,787</u>	<u>1,137,657</u>	52.3%
Total Operating Revenues	<u>1,189,728</u>	<u>2,126,752</u>	55.9%
<u>Expenditures:</u>			
Operations	282,400	1,094,500	25.8%
Capital Outlay	<u>-</u>	<u>-</u>	0.0%
Total Expenditures	<u>282,400</u>	<u>1,094,500</u>	25.8%
Excess (Deficiency) of Revenues and Other Sources over Expenditures	<u>907,328</u>	<u>1,032,252</u>	
Ending Fund Balance*	<u>6,223,304</u>	<u>6,348,229</u>	

* - Unaudited

58% of the fiscal year has elapsed



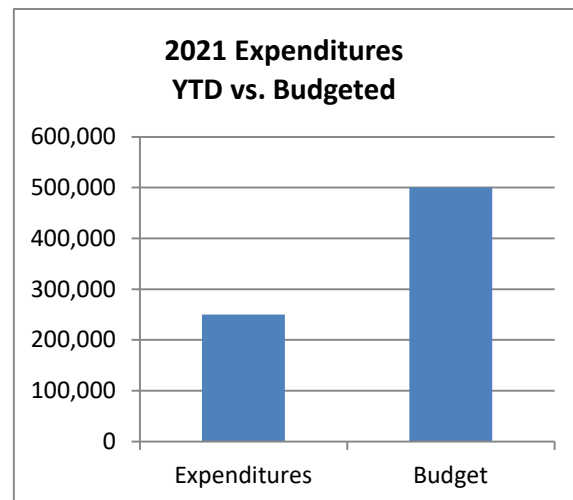
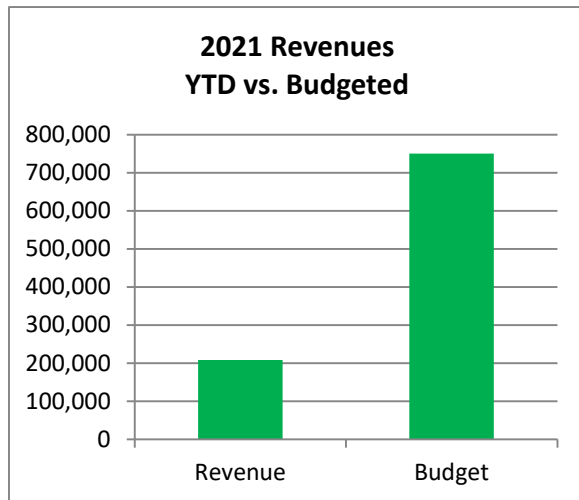
Town of Johnstown, Colorado
Statement of Revenues, Expenditures, and Changes in
Fund Balances - Recreation Center Fund
Period Ending July 31, 2021
Unaudited

Item #2.

	2021 Actuals July	2021 Adopted Budget	% Complete
Recreation Center Fund			
Beginning Fund Balance	1,422,738	1,422,738	
<u>Revenues:</u>			
Transfers In	208,333	750,000	27.8%
Earnings on Investment	-	-	
Total Operating Revenues	208,333	750,000	27.8%
<u>Expenditures:</u>			
Operations & Maintenance	250,000	500,000	0.0%
Capital Outlay	-	-	
Total Expenditures	250,000	500,000	50.0%
Excess (Deficiency) of Revenues and Other Sources over Expenditures	(41,667)	250,000	
Ending Fund Balance*	1,381,071	1,672,738	

* - Unaudited

58% of the fiscal year has elapsed



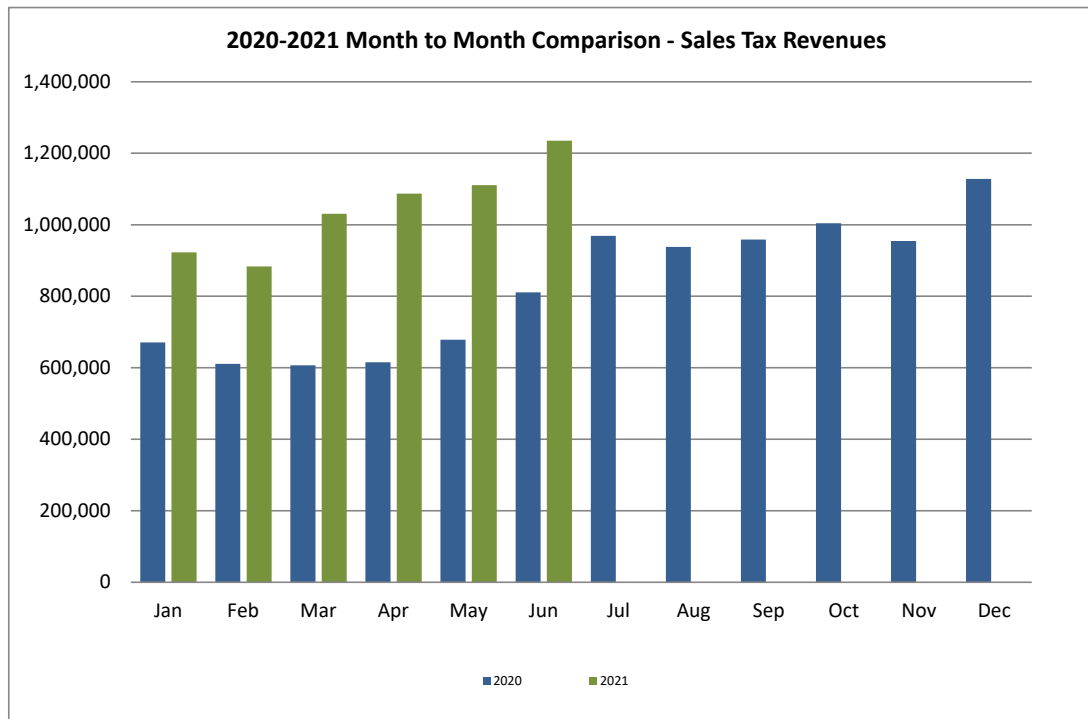
Sales Tax Analysis and Comparison 2021

Item #2.

<u>Month/Year</u>	<u>Sales Tax Collected*</u>	<u>Motor Vehicle Sales Tax Collected*</u>	<u>Total Sales Taxes Collected*</u>
Jan-20	497,742	173,194	670,936
Feb-20	499,117	111,639	610,756
Mar-20	491,392	115,467	606,860
Apr-20	531,113	84,279	615,392
May-20	607,705	70,708	678,414
Jun-20	663,024	148,031	811,055
Jul-20	772,660	196,194	968,854
Aug-20	779,425	158,666	938,091
Sep-20	824,605	134,268	958,873
Oct-20	765,787	238,719	1,004,506
Nov-20	827,990	126,680	954,671
Dec-20	981,199	146,594	1,127,793
2020 Total	8,241,761	1,704,440	9,946,201

Jan-21	744,120	178,705	922,826
Feb-21	743,695	139,660	883,356
Mar-21	906,817	124,138	1,030,955
Apr-21	918,293	168,662	1,086,954
May-21	896,848	213,617	1,110,465
Jun-21	1,015,237	219,682	1,234,920
Jul-21	0	0	0
Aug-21	0	0	0
Sep-21	0	0	0
Oct-21	0	0	0
Nov-21	0	0	0
Dec-21	0	0	0
2021 Total	5,225,011	1,044,465	6,269,476

Jan - Jun 2020	3,290,094	703,319	3,993,413
Jan - Jun 2021	5,225,011	1,044,465	6,269,476
% Increase (Decrease)	58.81%	48.51%	57.00%



* Amounts shown reflect different reporting periods for various entities.

Town of Johnstown
List of Bills - July 10, 2021 - August 6, 2021

Item #3.

<u>Vendor</u>	<u>Description</u>	<u>Dept.</u>	<u>Amount</u>
4990 Ronald Reagan LLC	Police substation lease	PD	1,519.75
A & E Tire Inc	Tires	ALL	824.69
A Good Hair Day	Johnstown Cash	ADM	60.00
Ace Hardware	Supplies	PW	1,161.39
Ace Hardware of Johnstown	Johnstown Cash	ADM	980.00
Adamson Police Products	Officer equipment	PD	493.50
All Copy Products, Inc	Copier for substation	PD	442.57
Aqua Backflow, Inc.	Mailings	PW	170.00
Aqua Engineering	Low point design	PW	52,269.90
Arapahoe Rental	Propane for thermo	PW	48.48
BHA Design Incorporated	I-25 Aesthetic Loop	ADM	5,417.50
Black Sheep Coffee & Crepes	Johnstown Cash	ADM	520.00
Blayne Banghart	Training reimbursement	PW	150.00
Bludot Technologies Inc.	ED CRM	ADM	195.00
Brenner Builders LLC	Sidewalk repair	PW	2,500.00
Browns Hill Engineering & Controls	Scada work Lonetree	PW	1,424.10
B's Coffee	Johnstown Cash	ADM	80.00
Canine Cuts Grooming Salon	Johnstown Cash	ADM	20.00
Card Services	Miscellaneous	ALL	12,368.82
Caselle, Inc	Software support	ADM	1,728.00
Cassidy's Sports Grill	Johnstown Cash	ADM	140.00
CDPHE, Water Quality Control Division	Design review/chemical mod.	PW	38,335.00
Cinco Brothers Barbershop	Johnstown Cash	ADM	60.00
Cintas	Mat service	ALL	717.43
Coblaco Services Inc.	Tank coating	PW	21,825.00
Colorado Analytical Labs	Lab testing	PW	275.00
Colorado Greenbelt Management	Lawn maintenance	PW	2,975.00
Connell Resources, Inc.	Interceptor project	PW	486,928.68
Consolidated Home Supply Ditch & Core & Main	Water legal	ADM	66.30
	GAC project	PW	128,172.98
Coren Printing, Inc	Tickets	ADM	1,105.00
Coulson Excavating Co.	Hydrant meter deposit refund	PW	1,500.00
D2C Architects	Architect expansion	PD	3,065.15
DBC Irrigation Supply	Irrigation supplies	PW	756.56
Denali Water Solutions LLC	Sludge removal	PW	43,019.10
Denver Industrial Sales & Services Co	Crack sealant	PW	9,783.00
DPC Industries Inc	Chemicals	PW	9,715.46
Dunrite Excavation Inc.	Hydrant meter deposit refund	PW	1,500.00
Employers Council	Membership	ADM	7,200.00
Ergomed	Employment screening	ALL	1,835.00
Felsburg Holt & Ullevig Inc	Billback - Engineering Services	ADM	3,230.00
Ferguson Waterworks	Supplies	PW	152.73
First American Corporation	Professional services	ADM	785.00
First National Bank	Custodial services	ADM	1,031.58
Fitness Avenue	Johnstown Cash	ADM	240.00
Fred's Automotive Inc	Vehicle repair	PW	611.00

Town of Johnstown
List of Bills - July 10, 2021 - August 6, 2021

Item #3.

<u>Vendor</u>	<u>Description</u>	<u>Dept.</u>	<u>Amount</u>
Full Circle Veterinary Care	Johnstown Cash	ADM	20.00
Galls LLC	Uniforms	PD	158.27
Gerrard Family Limited Partnership	Reimbursement - 2534	ADM	199,647.49
Glenn A. Jones Library	Library support	ADM	94,804.75
Grainger, Inc.	Extension pole	PW	116.40
Ground Engineering Consultants, Inc.	Concrete test interceptor project	PW	3,594.75
H & R Repair	Speed trailer tow	PD	205.00
Hach Company	Lab supplies	PW	1,493.39
Hays Market	Johnstown Cash	ADM	1,280.00
Helton & Williamsen, P.C.	Bill Back - Engineering Services	ADM	8,299.50
High Peak Stucco and Stone LLC	Repairs	PW	200.00
Hill & Robbins, PC	Billback - Professional Services	ADM	2,040.05
Hiroshi Teriyaki Grill, Inc.	Johnstown Cash	ADM	220.00
IMEG Corp	Billback - Engineering services	ADM	132,417.17
Insight North America, LLC	Investment services	ADM	3,031.34
Intellichoice, Inc	E-citation module	PD	5,990.00
J&D Creations	Supplies	ADM	72.93
J&S Contractors Supply Co.	Signs	PW	801.44
Jamie Desrosier	Mileage reimbursement	ADM	219.24
John Cutler & Associates	Audit completion	ADM	2,500.00
John Deere Financial	Tank for polymer	PW	530.14
Johnstown Barber Shop	Johnstown Cash	ADM	80.00
Johnstown Breeze	Publications	ADM	3,137.50
Johnstown Housing Authority	Boiler Replace - Housing Auth.	ADM	36,979.00
Johnstown Lunch Box, LLC	Johnstown Cash	ADM	420.00
J-Town Nutrition	Johnstown Cash	ADM	60.00
KCG Drug Alcohol Solutions	DUI tests	PD	320.00
KH Roofing LLC	Roof repairs	PW	65,539.00
King Surveyors	Survey	PW	3,024.00
Kinsco, LLC	Uniforms	PW	500.86
Klein Farms	Refund overpayment	PW	500.00
Larimer County Sales Tax Administrator	Use Tax - Reimbursement	ADM	65,478.83
Law Office of Avi Rocklin LLC	Legal Services	ADM	9,967.50
Law Office of Avi Rocklin LLC	Bill Back - Legal Services	ADM	8,464.00
Lawn Police Lawn & Landscape	Weed abatement	ADM	1,520.00
Lazar, Michael	Municipal Court Judge	ADM	3,240.00
Lazy Dog Johnstown, LLC	Johnstown Cash	ADM	540.00
Leads Online LLC	Subscription	PD	1,533.00
LG Sonic US, LLC	Ultra sonic buoy	PW	115,530.00
Life Stories Child & Family Advocacy	Quarterly fees	PD	156.00
Lift Coffee Bar	Johnstown Cash	ADM	140.00
Loveland Barricade LLC	Signs & decals	PW	393.50
LYS Salon	Johnstown Cash	ADM	40.00
Mac Equipment, Inc	Supplies	PW	413.01
Magellan Advisors LLC	Broadband study	ADM	14,525.00
Mares Auto Inc.	Vehicle repairs	PW	660.00

Town of Johnstown
List of Bills - July 10, 2021 - August 6, 2021

Item #3.

<u>Vendor</u>	<u>Description</u>	<u>Dept.</u>	<u>Amount</u>
McGeady Becher P.C.	Professional Services	ADM	447.00
Mile High Elevator LLC	Elevator service	PW	500.00
Milliken Johnstown Electric	Tornado siren & thermostat repair	PW	499.12
Moses, Wittemyer, Harrison&Woodruff, PC	Billback - Legal Services	ADM	5,188.32
Mr. Donuts	Johnstown Cash	ADM	40.00
Municipal Treatment Equipment Inc.	Equipment repair	PW	880.09
My Mail Company	Tier 2 violation letter	PW	6,994.18
Nalco Company LLC	Chemicals	PW	42,303.58
Napa Auto Parts, Inc	Supplies	PW	1,936.01
Newsom Gamez, Shirley	Monthly mileage	ADM	65.00
Noah Jaramillo	Uniform	PD	76.94
Northern Safety Co Inc	Supplies	PW	237.98
Office Depot Business Credit	Office supplies	ALL	1,998.73
Otak	Trail design	ADM	6,700.75
Pioneer	Repair supplies	PW	111.19
Poudre Valley REA	Utilities	PW	12,480.04
Precision Family Eyecare	Johnstown Cash	ADM	20.00
Purchase Power	Postage meter	ADM	301.50
Ramaker & Associates, Inc.	Cemetery software	ADM	2,720.00
Ramey Environmental Compliance Inc.	Stairs for wetwell access	PW	12,752.54
Ray Allen Manufacturing	K9 supplies	PD	198.95
Rhinehart Oil Co., Inc.	Fuel	ALL	11,671.10
RoadSafe Traffic Systems	Thermo plastic for crosswalks	PW	2,458.64
Royal-T	Camera service/sewer cleaning	PW	1,550.00
Sam's Club MC/SYNCB	PD office supplies	PD	111.83
Santiago's Mexican Restaurant	Johnstown Cash	ADM	520.00
Security Central, Inc	Alarm monitoring	PW	219.00
Susan O'Conner	Water filter repair	PW	120.00
Tait & Associates, Inc.	Design	PW	6,000.00
TDS	Telephone	ALL	2,580.41
The Home Depot/GECF	Lawn supplies	PW	81.85
Twin Silos, LLC	Reimbursement Agreement	ADM	4,000.00
United Power, Inc	Street Lights	PW	795.25
USA Bluebook	Supplies	PW	2,283.95
Utility Refunds	Utility Refunds	ADM	1,892.40
Vector Disease Control	Mosquito Spraying	PW	3,389.14
Verizon Wireless	Cell Phones	ALL	3,682.22
Veteran Brothers Brewing Co.	Johnstown Cash	ADM	760.00
VFW 2585	Veteran memorial	ADM	17,800.00
Wagner Equipment Co.	Repair	PW	5.01
Weeds Commercial Mowing LLC	Weed control	PW	6,172.50
Weld County Clerk & Recorder	Escrow Funds	ADM	600.00
Weld County Dept of Public	Lab services	PW	649.50
Wellspring Therapeutics LLC	Johnstown Cash	ADM	20.00
Windstream	Telephone/Internet	ALL	1,083.94
Winters, Hughes & Laue, LLC	Prosecuting attorney services	ADM	3,555.00

Town of Johnstown
List of Bills - July 10, 2021 - August 6, 2021

Item #3.

<u>Vendor</u>	<u>Description</u>	<u>Dept.</u>	<u>Amount</u>
WR Investment, LLC	Reimbursement Agreement	ADM	50,600.00
Xcel Energy	Utilities	PW	97,630.22
		Total:	<u>1,954,885.61</u>



Town of Johnstown

TOWN COUNCIL CONSENT AGENDA COMMUNICATION

AGENDA DATE: August 16, 2021

SUBJECT: Appointment of Jessica Salo, Kenneth “Scott” Hayward, and David Puccetti to the Johnstown Planning & Zoning Commission

ATTACHMENTS: 1. Town Boards & Commissions Application for each Candidate

PRESENTED BY: Kim Meyer, Director of Planning & Development

ITEM DESCRIPTION:

Per Section 2-182 of the Johnstown Municipal Code, the Planning & Zoning Commission (PZC) shall consist of seven residents, appointed by the Town Council.

Upon recent resignations of several commissioners, the Town has sought additional candidates for the Commission. Several applicants applied in 2021 for appointment to the Commission, and PZC had the opportunity to interview them in July. The Planning & Zoning Commission unanimously recommended to the Council for appointment to this Commission: Jessica Salo, Kenneth “Scott” Hayward, and David Puccetti. Upon Council appointment, they will be sworn into these positions by the Town Clerk and resume duties at the next regular meeting of the commission.

LEGAL ADVICE:

N/A

FINANCIAL ADVICE:

N/A

Reviewed and Approved for Presentation,

Town Manager

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P: 970.587.4664 | 450 S. Parish Ave, Johnstown CO 80534 | F: 970.587.0141



Town of Johnstown

ADVISORY COMMITTEE, BOARD OR COMMISSION APPLICATION

I REQUEST APPOINTMENT TO (Circle one)

Cemetery Committee

Housing Authority

Planning and Zoning Commission

FIRST AND LAST NAME: Jessica Salo

EMAIL ADDRESS: PHONE NUMBER:

RESIDENCE ADDRESS (Street, City, State, Zip)

Johnstown, CO 80534

MAILING ADDRESS - if different than above (Street, City, State, Zip)

HOW LONG HAVE YOU LIVED IN JOHNSTOWN? 3 years

OCCUPATION & EMPLOYER:

Associate Professor, University of Northern Colorado

VOLUNTEER AND/OR WORK EXPERIENCE:

Associate Professor, Department of Geography, GIS, and Sustainability, UNC 2013 – present

Board Member, Poudre Heritage Alliance, 2019 - present

Continue to next page for questionnaire.

1. Are you presently serving on Town Council or on an appointed committee, board or commission? If so, which one(s)?

No

2. Why do you wish to be appointed?

Johnstown has a lot of potential and is experiencing a lot of growth. I would love to see the town develop into a vibrant and connected community, and I have the skills to assist in that.

3. List any abilities, skills, or interests which are applicable to the position for which you are applying:

I am extremely analytical and have strong technical skills. My research investigates various human and environmental factors along the Colorado Front Range and Eastern Plains, with a strong focus on water resources. I am familiar with land and water use regulations and development. I have experience developing strategic plans for departments and organizations.

4. Are you committed to attending meetings? Yes

5. Are you committed to serving an entire term? Yes

6. Please specify any activities which might create a serious conflict of interest if you should be appointed to a particular board, commission or committee.

I cannot think of any.

7. Although you are not required to have extensive knowledge or experience related to the board, commission or committee, please list any licenses, certificates or other specialized training applicable to the board, commission or committee for which you are applying.

I have taken multiple land use planning classes and am familiar with the local zoning ordinances. Although it was more than two decades ago, I worked as a planning intern during college.

8. Additional information or references you believe may be helpful in considering your application.

9. If you are not appointed at this time, are you interested in serving in the future?

(Circle one) **YES NO**

10. May we contact you in the future if a vacancy opens?

(Circle one) **YES NO**

10. What interests you most / least about the position?

The potential to have a lasting, positive impact on the community is the most interesting aspect of the position. Additionally, I like to be engaged in my community and I believe my skillset is best fitted for the Planning and Zoning Commission.

11. What do you like most / least about the Town of Johnstown?

I like the small town feel and the commitment to retaining agriculture as part of the heritage of the town. I would like to see the western neighborhoods more connected to the downtown, making it possible for residents to safely walk or bike to business on Parish Avenue and the surrounding areas.

12. What would you like to see the Town accomplish in the next two (2) years?

I would like to see safe, non-motorized vehicle paths connecting the western neighborhoods and new schools to the downtown area. I would also link to see an increase in activity and engagement with local businesses in the downtown area.

13. What is your philosophy on growth?

I believe that growth is unavoidable and can be achieved in a way that is economic sound, strengthens connections within communities, and preserves the heritage of a community, while also protecting the natural world. There is a lot of potential in growing communities, and I believe Johnstown is in a good position to manage growth in a way that will ensure a great future.

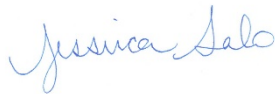
14. What changes would you like to see occur in the Town of Johnstown?

I would like to see safe, non-motorized vehicle paths connecting the western neighborhoods and new/proposed schools to the downtown area and more safely connected to the western neighborhoods. I would like to see locations and businesses in the downtown area be developed to grow connections within the community. The YMCA is doing a great job of this and I would love to see this continue.

15. Why should you be appointed?

I was raised on a working farm in a rural area and worked in oil and gas before moving to Colorado and obtaining my PhD. These life experiences provide an unique perspective that can be of great value to a community, such as Johnstown, that is juggling multiple land uses and rapid residential development. I have knowledge of rural Colorado and technical and analytical skills that will benefit the Planning and Zoning Commission.

Signature_____



_____Date 60/10/2021

**Please complete this form in its entirety using the space provided and return to the Town Clerk by emailing a scanned copy to dseele@townofjohnstown.com or by dropping it off at Town Hall (450 S. Parish Ave, Johnstown, CO 80534). With questions, please call 970-587-4664.*



Town of Johnstown

ADVISORY COMMITTEE, BOARD OR COMMISSION APPLICATION

I REQUEST APPOINTMENT TO (Circle one)

Cemetery Committee

Housing Authority

Planning and Zoning Commission

FIRST AND LAST NAME:

KENNETH (SCOTT) HAYWARD

EMAIL ADDRESS:

PHONE NUMBER:

RESIDENCE ADDRESS (Street, City, State, Zip)

[REDACTED] JOHNSTOWN, CO 80534

MAILING ADDRESS - if different than above (Street, City, State, Zip)

HOW LONG HAVE YOU LIVED IN JOHNSTOWN?

3 YEARS +

OCCUPATION & EMPLOYER:

PRECAST CONCRETE RETIRED

VOLUNTEER AND/OR WORK EXPERIENCE:

LOVELAND LIONS, GREAT NORTHERN FAIR, HOA PRESIDENTS
(NPCA)
NATIONAL PRECAST CONCRETE ASSOC. B.O.D., NPCA FOUNDATION EDUCATION
HAYWARD'S MUFFLER & BRAKE (OWNER), PS CHARTER MT. (OWNER)
COLO. WEDDING SUPPLIES (OWNER), COLORADO PRECAST CONCRETE (OWNER)

Continue to next page for questionnaire.

1. Are you presently serving on Town Council or on an appointed committee, board or commission? If so, which one(s)?

No

2. Why do you wish to be appointed?

I BELIEVE MY PAST EXPERIENCE

IN CONSTRUCTION CAN HELP IN THE DEVELOPEMENT OF JOHNSTOWN

3. List any abilities, skills, or interests which are applicable to the position for which you are applying:

BUSINESS OWNERSHIP, CONSTRUCTION BACKGROUND, STARTED
IN FARMING/RANCHING & BUILT BUSSINESS'S TO SELL & RETIRE

4. Are you committed to attending meetings?

YES

5. Are you committed to serving an entire term?

YES

6. Please specify any activities which might create a serious conflict of interest if you should be appointed to a particular board, commission or committee.

NONE THAT COME TO MIND

7. Although you are not required to have extensive knowledge or experience related to the board, commission or committee, please list any licenses, certificates or other specialized training applicable to the board, commission or committee for which you are applying.

7+ BUSINESS'S & CONSTRUCTION, PAST LICENCE OF
TRANSPORTION, CONTRACTOR LIC., I'VE A CDL & ALL ENDORSMENTS
FOR 40+ YEARS, NUMEROUS SAFETY CLASSES

8. Additional information or references you believe may be helpful in considering your application.

I HAVE STARTED BUSINESS'S FROM THE GROUND UP
 & MANAGED THEIR GROWTH TO BE PROFITABLE. I'M NOT AFRAID
 TO GET MY HANDS DIRTY & WORK WITH OTHERS TO MAKE
 THINGS WORK.

9. If you are not appointed at this time, are you interested in serving in the future?

(Circle one)

☒ YES ☐ NO

10. May we contact you in the future if a vacancy opens?

(Circle one)

☒ YES ☐ NO

10. What interests you most / least about the position?

BEING ABLE TO USE MY EXPERTISE IN HELPING MANAGING
 GROWTH IN JOHNSTOWN

11. What do you like most / least about the Town of Johnstown?

THE COMMUNITY IS A GREAT PLACE TO LIVE (LIKE MOST)
 THE INFRASTRUCTURE (LEAST)

12. What would you like to see the Town accomplish in the next two (2) years?

FUTURE PLANNING & INFRASTRUCTURE

13. What is your philosophy on growth?

TO SURVIVE WE MUST HAVE
MANAGED GROWTH

14. What changes would you like to see occur in the Town of Johnstown?

UP DATE INFRASTRUCTURE

15. Why should you be appointed?

I'm A HANDS ON TYPE OF PERSON.
POSITIVE, GO getter, I DON'T DWELL ON DISSENTIONS, I HAVE
HAD MORE THAN 100 EMPLOYEES TO MANAGE AT ONE TIME. I'm A
VERY POSITIVE, PEOPLE TYPE. WISHING TO HELP OUR COMMUNITY.

Signature Scott Hayward Date 2-05-2021

*Please complete this form in its entirety using the space provided and return to the Town Clerk by emailing a scanned copy to dseele@townofjohnstown.com or by dropping it off at Town Hall (450 S. Parish Ave, Johnstown, CO 80534). With questions, please call 970-587-4664.

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Town of Johnstown

ADVISORY COMMITTEE, BOARD OR COMMISSION APPLICATION

I REQUEST APPOINTMENT TO: Planning and Zoning Commission

FIRST AND LAST NAME: David P. Puccetti.

EMAIL ADDRESS: _____ **PHONE NUMBER:** _____

RESIDENCE ADDRESS: _____ Johnstown, Colorado 80534 in Pioneer Ridge.

HOW LONG HAVE YOU LIVED IN JOHNSTOWN? 6 1/2-years.

OCCUPATION & EMPLOYER: Part Time -Fire Prevention Specialist – Frederick-Firestone Fire Protection District.

VOLUNTEER AND/OR WORK EXPERIENCE: I was a volunteer firefighter with the Arvada Fire Protection District for 13-years. I was also involved in volunteer work with my therapy dog for local hospitals, care homes, schools, and retirement communities.

1. **Are you presently serving on Town Council or on an appointed committee, board, or commission? If so, which one(s)?** Currently, I am not serving on a Town Council or on an appointed committee, board or commission.
2. **Why do you wish to be appointed?** I have always been involved in volunteer opportunities in my community from firefighting to volunteer service work.
3. **List any abilities, skills, or interests which are applicable to the position for which you are applying:** I was employed the Fire Marshal for the Frederick-Firestone Fire Protection from 2013-2017. During my time as Fire Marshal, I worked directly with the Town of Frederick, the Town of Firestone and Weld County Planning Departments on future development, growth, and construction of commercial and residential projects.
4. **Are you committed to attending meetings?** Yes
5. **Are you committed to serving an entire term?** Yes

6. Please specify any activities which might create a serious conflict of interest if you should be appointed to a particular board, commission, or committee. I am currently semi-retired and work 28-hours per week for the Frederick-Firestone Fire Protection District as Fire Prevention Specialist. There are no activities in which I am currently involved, which would be a conflict, should I be appointed to Planning and Zoning Commission.
7. Although you are not required to have extensive knowledge or experience related to the board, commission, or committee, please list any licenses, certificates, or other specialized training applicable to the board, commission, or committee for which you are applying. I am certified by the State of Colorado as a Plans Examiner III and certified with the International Code Council (ICC) as a Fire Inspector I. I certified by National Association of Fire Investigators (NAFI) as a Certified Fire and Explosives Investigator.
8. Additional information or references you believe may be helpful in considering your application. Here are references for your use:
9. If you are not appointed at this time, are you interested in serving in the future? Yes
10. What interests you most / least about the position? Being directly involved in the community and working with other Planning Commissioners for the future grow in Johnstown. The least desirable part of the position is the Planning Commission is only a recommendation commission to the Town Board.
11. What do you like most / least about the Town of Johnstown? I love the rural setting and small-town atmosphere and local community involvement. The least desirable part of Johnstown is the condition of the roads and influence of developers and Weld County government.
12. What would you like to see the Town accomplish in the next two (2) years? In the next two(2) years I would like to see smart growth as it related to agricultural, urban development and oil and gas.
13. What is your philosophy on growth? I believe it is extremely important for smart growth between urban development, agricultural and oil and gas. There clearly needs to be goals and objectives set in place by the staff of Planning and Zoning Commission and the Town Board.

14. What changes would you like to see occur in the Town of Johnstown? Improvement in roadway access, and conditions. Designation of residential and commercial growth areas. Further development of the downtown area for local business. More recreational opportunities for youth and seniors. Better schools for all children in the Johnstown area.

15. Why should you be appointed? I have a strong desire to be involved in my community. All my family lives in Johnstown, Milliken, and Greeley. My wife and I have chosen Johnstown for our retirement home. Based on my life and work experiences as a Fire Marshal and in my current position as a Fire Prevention Specialist working with Planning Commissions in Weld County, provides me with a diverse background to help Johnstown grow now and in the future.

Signature: _____



David P. Puccetti

Date: June 9, 2021

**Please complete this form in its entirety using the space provided and return to the Town Clerk by emailing a scanned copy to dseele@townofjohnstown.com or by dropping it off at Town Hall (450 S. Parish Ave, Johnstown, CO 80534). With questions, please call 970-587-4664. 450*

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Town of Johnstown

TOWN COUNCIL CONSENT AGENDA COMMUNICATION

AGENDA DATE: August 16, 2021

SUBJECT: Water and Sewer Service Agreement – LRFA Station 10 (4301 Ronald Reagan Blvd.)

ATTACHMENTS: 1. Water and Sewer Service Agreement with Exhibits

PRESENTED BY: Kim Meyer, Planning and Development Director

ITEM DESCRIPTION:

LRFA (Loveland Fire & Rescue Authority) has received approval of a site development plan for a ±25,000 SF building, in the 2534 area, for LFRA Station #10.

The total estimated demand for potable water of 2.80 AF, and 2.14 AF for non-potable water for irrigating landscaping, have been reviewed by the town water engineer. This water has been allocated by the appropriate water banks for potable and non-potable use – see Exhibit B of the agreement. The required water court transfer fee was paid to the Town previously.

LEGAL ADVICE:

The agreement was prepared by the Town Attorney.

FINANCIAL ADVICE :

N/A

RECOMMENDED ACTION:

Approve the Water and Sewer Service Agreement for LFRA (Loveland Fire Rescue Authority).

Reviewed and Approved for Presentation,

Town Manager

The Community That Cares

johnstown.colorado.gov

P: 970.587.4664 | 450 S. Parish Ave, Johnstown CO 80534 | F: 970.587.0141

WATER AND SEWER SERVICE AGREEMENT

THIS WATER AND SEWER SERVICE AGREEMENT is made and entered into this 15th day of JUNE, 2021, by and between the **LOVELAND FIRE RESCUE AUTHORITY**, (“Developer”) and **THE TOWN OF JOHNSTOWN**, a Colorado municipal corporation, (“Town”), collectively sometimes referred to as the “Parties”.

WITNESSETH:

WHEREAS, the Developer owns an interest in land known as Lot 4, Block 6, 2534 Filing No. 9, in the NE¼ of Section 11, T05N, R68W, 6th PM, comprising 2.3 acres, more-or less, and more specifically described in the attached Exhibit A (“Subject Property”); and

WHEREAS, the Subject Property has been annexed to the Town and was the subject of an Annexation Agreement dated November 3, 2006; and

WHEREAS, the Subject Property is being developed a fire station for the use of the Loveland Fire Rescue Authority consisting of a 4,300 ft² of commercial space and 1.21 acres of irrigated landscape (“Project”); and

WHEREAS, the Developer and the Town desire to set forth their agreement concerning water rights dedication, preliminary projections of water and sewer demand and a current commitment by the Town for water and sewer service for the Project.

NOW, THEREFORE, in consideration of the mutual promises hereinafter contained and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties hereto agree as follows:

1. Water and Sewer Demand Studies. In compliance with the Town Water Rights Dedication Ordinance (“Ordinance”), Developer has submitted to the Town a preliminary Water and Sewer Demand Analysis for the Project, dated October 15, 2020. Said analysis was received by the Town and is on file with the Town and, as modified by the Town’s Water Engineer by memorandum dated June 10, 2021, is hereby accepted by the Town. The analysis provided by Developer addresses the projected water and sewer demands for the Project as follows:

Development Component	Demand (AF/YR)	Consumption (AF/YR)
In-Building	2.80	0.140
Landscape Irrigation (non-potable)	2.14	1.810
Total	4.94	1.950

2. **Water Rights Dedication.**

a. Potable Supply. As a result of prior dedications of raw water credit, there is currently a surplus dedication credit with the Town sufficient to supply the potable water demands of the Project from the 2534 Master Association Water Bank. The Gerrard Family Partnership, LLLP and Thompson Ranch Development Company have agreed that this credit shall be applied to meet the potable water demands of the Project. Evidence of the agreement is attached hereto and incorporated herein by reference as Exhibit B.

b. Non-Potable Supply. As a result of prior dedications of raw water credit, there is currently a surplus dedication credit with the Town sufficient to supply the non-potable water demands of the Project from the 2534 Master Association Water Bank. The Gerrard Family Partnership, LLLP and Thompson Ranch Development Company have agreed that this credit shall be applied to meet the non-potable water demands of the Project. Evidence of the agreement is attached hereto and incorporated herein by reference as Exhibit B.

3. Commitment to serve. Subject to Developer's performance of all the covenants contained herein and payment of all required fees, the Town commits to provide to the Project up to 2.80 acre-feet per year of potable water supply together with the corresponding sewer service, and up to 2.14 acre-feet per year non-potable water supply for landscape irrigation.

4. Future review of water usage and dedication requirements. In accordance with the Ordinance, the Town reserves the right to review actual water usage within the Project at a point in time after water usage has been established, to confirm the adequacy of the water demand projections made by the Developer and to require additional water rights dedication and/or cash-in-lieu payments based on actual water usage.

5. Payment of Water Court Transfer fees. The Water Court transfer fee for both the potable water supply and non-potable water supply was previously paid to the Town as part of the 2534 Master Association Water Bank. However, in accordance with the Ordinance, additional fees may be required in connection with future development of any property to which all or any portion of the surplus dedication credit is subsequently assigned pursuant to a future mutual agreement of the parties in accordance with the Ordinance.

6. 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, mailed postage prepaid, certified mail, return receipt requested, or sent by electronic mail on the condition that the recipient acknowledges receipt thereof, as follows:

TO DEVELOPER:

Attn: GREG WARD
Email: GREG.WARD@LFPA.ORG

LOVELAND FIRE RESCUE
AUTHORITY

410 EAST 5TH ST
LOVELAND CO 80537
970 962 2806

TO THE TOWN:

Town of Johnstown
c/o Town Clerk
450 S. Parish Ave.
Johnstown, CO 80534
dseele@townofjohnstown.com

WITH A COPY TO
THE TOWN ATTORNEYS:

Avi Rocklin, Esq.
Johnstown Town Attorney
1437 N. Denver Avenue, #330
Loveland, CO 80538
avi@rocklinlaw.com

Peter J. Ampe
Hill & Robbins, P.C.
1660 Lincoln St., Suite 2720
Denver, CO 80264
peterampe@hillandrobbs.com

The addresses for notices may be changed by written notice given to the other Party in the manner provided above.

7. Default. In the event of default by either Party hereunder the non-defaulting Party shall notify the defaulting Party in writing of such default(s), specifying the nature and extent thereof. If such default is not cured within thirty (30) days and the non-defaulting Party desires to seek recourse, the Parties shall participate in mediation, the costs of which shall be shared equally by both Parties. If mediation is not successful after a ninety-day period, either Party may then commence a legal action, and shall be entitled to such remedies as are provided by law, including the Town's ordinances.

8. Successors and assigns. The benefits and burdens of this Agreement shall respectively inure to and be binding upon the successors and assigns of the Parties hereto. This Agreement shall not be assigned without the prior written consent of the other party, which shall not be unreasonably withheld.

9. Amendment or modification. No amendment or modification of this Agreement shall be of any force or effect unless in writing and executed by the Parties hereto with the same formality as this Agreement.

10. Attorney's fees and costs. If any judicial proceedings may hereafter be brought to enforce any of the provisions hereof, including an action for specific performance and/or

damages, 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.

11. Waiver. The waiver of any breach of any of the provisions of this Agreement by either Party shall not constitute a continuing waiver of any subsequent breach by said Party, concerning either the same or any other provision of this Agreement.

12. Headings for convenience only. Paragraph headings and titles contained herein are intended for convenience and reference only and are not intended to define, limit or describe the scope or intent of any provision of this Agreement.

13. Non severability. Each paragraph of this Agreement is intertwined with the others and is not severable unless by mutual consent of the Parties hereto.

14. Choice of laws. This Agreement and the rights and obligations of the Parties hereto shall be governed by the laws of the State of Colorado. Venue for any claim, proceeding or action shall be in Larimer or Weld County, State of Colorado.

15. Entire agreement and Authorization. This Agreement constitutes the entire agreement between the Parties related to the subject matter hereof and any prior agreements pertaining thereto whether oral or written have been merged or integrated into this Agreement. Each of the undersigned represents to the others that he/she is authorized by his/her respective entity to execute this Agreement on behalf of that entity.

16. 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.

18. Recordation. This Agreement may be recorded by the Town at Developer's expense in the office of the Clerk and Recorder of Larimer County, Colorado, and, effective as of the date of such recordation, this Agreement shall run with the Subject Property, shall be binding upon the Parties hereto and the permitted successors and assigns of the Developer and shall constitute notice of this Agreement to all persons or entities not parties hereto.

*IN WITNESS WHEREOF, the Parties have executed this Agreement the day and year first above written.

Signatures follow

LOVELAND FIRE RESCUE AUTHORITY

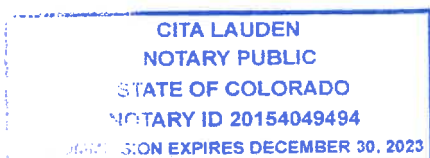
By: _____

Title: Operations Chief

STATE OF COLORADO)
) ss
 COUNTY OF LARIMER)

SUBSCRIBED AND SWORN to before me this 15th day of June, 2021 by
Greg Ward as Operations Chief for the Loveland Fire Rescue Authority

Witness my hand and official seal.



Cita Lauden
 Notary Public

1453 Antero Dr Loveland CO 80538
 Address

970 203-5754
 Telephone

My Commission Expires: 12/30/23

TOWN OF JOHNSTOWN, COLORADO,
 a municipal corporation

By: _____

Gary Lebsack, Mayor

ATTEST:

By: _____

Diana Seele, Town Clerk

EXHIBIT A
LEGAL DESCRIPTION

Loveland Fire Rescue Authority – Legal Description



Belford Watkins Group
Architects

Loveland Fire Rescue Authority Station No. 10

Lot 4, Block 6, 2534 Filing No. 9 Situated in Northeast Quarter of Section 11,
Township 5 North, Range 68 West of the 6th P.M., Town of Johnstown,
County of Larimer, State of Colorado

ARCHITECTURE

INTERIORS

PLANNING

EXHIBIT B**RAW WATER CREDIT ALLOCATION ACKNOWLEDGMENT**

This is to acknowledge and agree that the Town of Johnstown may allocate raw water credit from The Gerrard Family Partnership, LLLP and Thompson Ranch Development Company raw water credit account held by the Town of Johnstown, known as the "2534 Master Association Water Bank," to provide water service to Loveland Fire Rescue Authority, a public entity of the State of Colorado ("Owner"), for the development known as Fire Station No. 10, and to any successor occupant of the premises pursuant to a Water and Sewer Service Agreement to be executed between Owner and the Town. The amount of such allocated raw water credit is calculated to be 0.88 acre-feet per year for potable in building use and 2.28 acre-feet per year for non-potable irrigation use, subject to adjustment pursuant to the terms of the Water Sewer Service Agreement and the Johnstown Municipal Code.

The premises referenced herein are described on Exhibit A to the WSSA.

The undersigned certify that they are authorized to execute this Raw Water Allocation Acknowledgment on behalf of The Gerrard Family Partnership, LLLP and Thompson Ranch Development Company.

THE GERRARD FAMILY PARTNERSHIP, LLLP



Nathan Gerrard, Managing Partner
The Gerrard Family Limited Partnership, LLLP

Dated: 7/22/2021

THOMPSON RANCH DEVELOPMENT COMPANY



Todd Williams, Vice President
Thompson Ranch Development Company

Dated: 7/22/2021



Town of Johnstown

TOWN COUNCIL CONSENT AGENDA COMMUNICATIONS

AGENDA DATE: August 16, 2021

SUBJECT: Land Use Code Rewrite

ACTION PROPOSED: Award Contract for Land Use Code Rewrite to Gould Evans

ATTACHMENTS: 1. Proposal Binder including: Gould Evans / White & Smith / Wilson Williams
2. Agreement for Professional Consulting Services

PRESENTED BY: Kim Meyer, Planning & Development Director

AGENDA ITEM DESCRIPTION:

Enclosed for Council review and consideration is an award request to enter into a professional services agreement to work with Town Staff and Planning & Zoning Commission to fully update Chapters 15, 16, and 17 of the Johnstown Municipal Code related to annexation, zoning, subdivision, and overall land use and development within the town.

This expenditure was budgeted and approved for the 2021 fiscal year, for \$155,000; the Town has been awarded a DOLA Energy & Mineral Impact Assistance grant that will reimburse the General Fund for 50% of this expense, up to \$80,000.

A request for proposals was posted online on APA (American Planning Association) Colorado as well as the Town website in January of 2021. Proposals were received in February, but a COVID-induced change to the DOLA grant cycle prompted Staff to place this award on hold until an application and grant determination could be made. The Town received notice of that grant award in June and the executed contract from DOLA at the end of July. With that, Staff promptly held consultant interviews with our top two firms, and finalized selection to be concurrent with that contract timing.

Several proposals were received:

1. Gould Evans (+ Ayres & Assoc.) - \$153,680
2. White & Smith (+ Logan Simpson) - \$152,670
3. Wilson Williams - \$85,000

The Community That Cares

johnstown.colorado.gov

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Upon detailed review of these proposals, review of current and past work products for similar-size municipalities, and discussions with staff at referenced municipalities, Staff believes that Gould Evans will be a very strong partner in understanding the current and future needs of Johnstown and developing a comprehensive land use code that meets current legal requirements while addressing the community's and organization's needs – balancing property rights with community vision and overall welfare, and providing solutions for efficient and effective administration of the code.

LEGAL ADVICE:

Agreement was reviewed by the Town Attorney.

FINANCIAL ADVICE:

This \$153,680 contract amount is accommodated within the approved 2021 Town Budget. A DOLA grant is expected as reimbursement for up to 50% (\$76,840).

Reviewed and Approved for Presentation,



Town Manager

TOWN OF JOHNSTOWN DEVELOPMENT CODE REWRITE/UPDATE

FEBRUARY 19, 2021



February 19, 2021

Kim Meyer, Director of Planning & Development
Town of Johnstown, Colorado
450 S. Parish Ave.
Johnstown, CO 805041

RE: Request for Proposals | Town of Johnstown Development Code Rewrite/Update

Dear Ms. Meyer and members of the Selection Committee,

It is an interesting time for Johnstown. Blending an agricultural heritage with increasing growth pressures requires taking a fresh look at how you build for the future. You are now grappling with a complex land use and development code that has been pieced together over the past decades—creating frustration and confusion amongst many different sectors of your community. **That's where we come in.**

This is what we do—the Gould Evans Studio for City Design routinely helps our clients draft practical and effective regulatory strategies to implement their plans. Most importantly, our distinguishing feature is accomplishing this with a design-based approach to development regulations. Simply put, development regulations are the tool to help stakeholders build the future you envision, and you cannot afford to let conventional planning approaches unnecessarily get in the way of achieving your vision. We also appreciate that working in smaller communities places a premium on simplicity; effectively managing the code is paramount to your success.

No two development code projects are ever alike, but we can draw on our experiences from similar communities to help find the right solutions for Johnstown. The needs of our clients always demand new, innovative approaches to meet the planning and implementation challenges of each town or city and to create regulations tailored to their plan. We find this is particularly true in smaller, western towns. Working in a collaborative, multidisciplinary manner with the stakeholders that have a role in implementing the development code rewrite is essential. In contacting any of our past clients, you will find that we are a tireless partner in finding the right regulatory approach for your situation—one that is practical, simple, and effective.

To assist us in best serving the city and the stakeholders in Johnstown, we have included expert advisors from Ayres Associates. Ayres provides our team with a combination of implementation know-how and engineering expertise. They share our passion and commitment to serving communities, adding valuable insights from years of local government experience. Matt Ashby is a past planning director with direct proficiency on this type of project, both while working for the City of Cheyenne, Wyoming, as well as a growing body of consulting experience. Matt's planning expertise and code implementation knowledge will help distill different development perspectives and assist with code creation that places a premium on logic-based implementation. In addition, the civil engineering and municipal planning support offered by Ayres Associates will be available to our team and city staff. As evidence of our recent success partnering with Ayres Associates, this same team is currently completing code rewrites for Fort Lupton and Greeley, Colorado, and in the past, a code rewrite for Brighton, Colorado, from which we expect to bring several relevant code innovations for you to consider.

We value personal connections and look forward to establishing strong working relationships with your team and Johnstown's community stakeholders. By understanding the unique perspectives surrounding community development, we can best tailor effective solutions. Please do not hesitate to contact us with any questions or concerns, and we look forward to next steps.

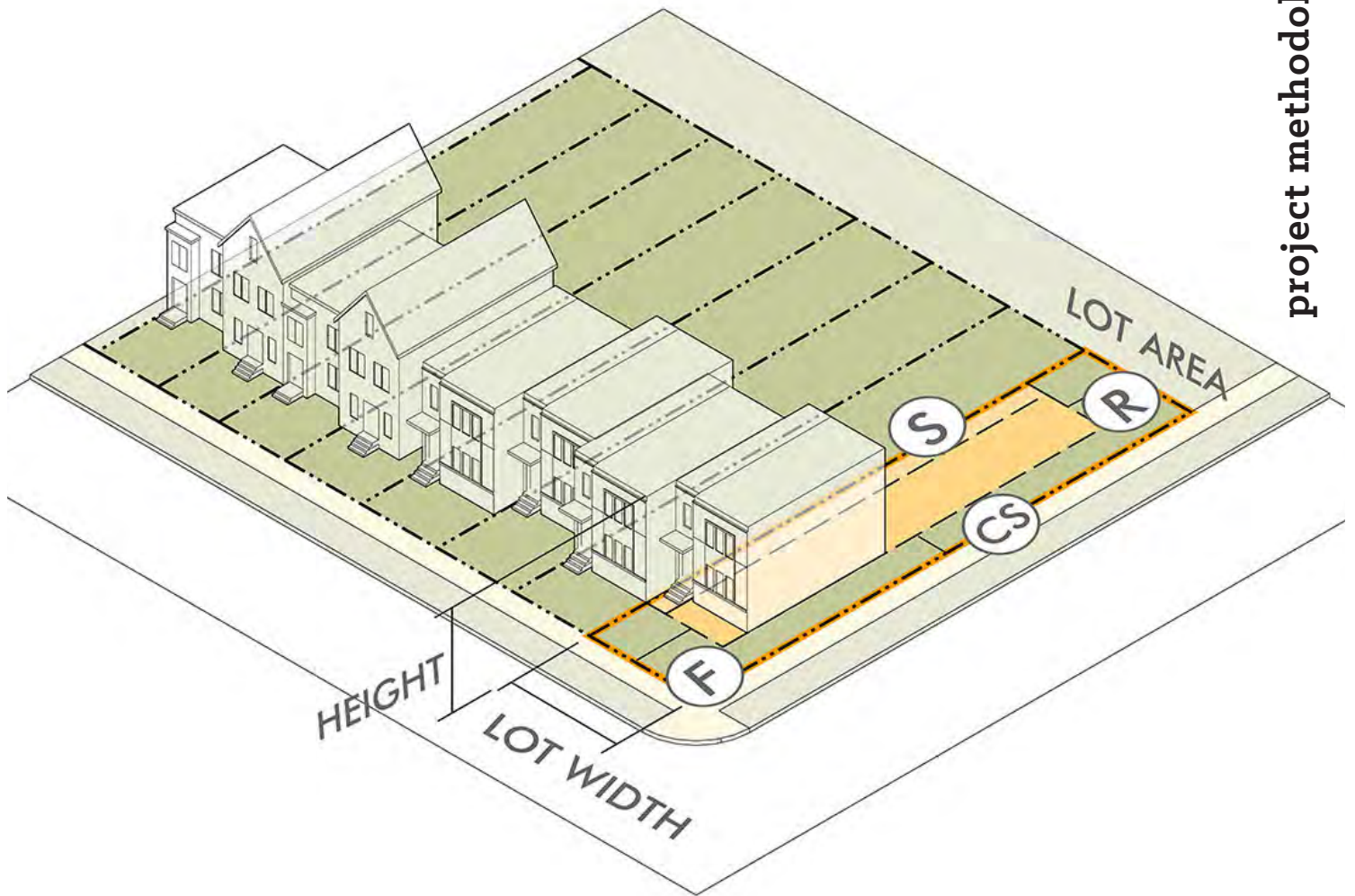
Sincerely,



Chris Brewster, AICP, JD
Project Manager
816.701.5655; chris.brewster@gouldevans.com

01 | project methodology + perspective

We use a design-based methodology to simplify the building of great cities.



PROJECT PERSPECTIVE

Planning for high-growth communities is different. Every decision is magnified, as growth is happening fast and each decision brings about potentially significant changes. The recent Comprehensive Plan process has brought renewed attention to this.

How does Johnstown...

- Respect our agriculture heritage as we grow?
- Maintain our small-town character as we grow?
- Build more livable communities as we grow?
- Improve our parks and trails as we grow?
- Maintain quality infrastructure as we grow?

The lay of the land is full of opportunities for Johnstown. The Town is uniquely positioned in a high-growth corridor with large areas of undeveloped land. Essentially, many elements of town building that often took years or even decades are put on fast-forward.

While the comprehensive plan has set the direction with broad policy, the Town will need a development code to steer all stakeholders through the process—one that connects community with opportunity.

The current development code will not do that. It is a collection of standards rather than a method of building community. As a result, staff and public officials have resorted to many Planned Unit Developments (PUDs) to navigate the early stages of growth. While this approach can help facilitate projects and bring about a higher standard, it is fraught with difficulties.

- PUDs provide flexibility, but they do so with few expectations for those involved in the development process: applicants, property owners, decision-makers, and staff.
- PUDs entitle development, but they do so through cumbersome, time-consuming, and expensive processes.
- PUDs enable more specific development planning, but they do so from the inward perspective of several different projects, making it difficult to coordinate community building across a broader scale.
- PUDs specify exactly what can be built, but they become very difficult to implement, as they tend to “freeze” projects at a snapshot in time, involve comprehensive and complicated guidebooks, and cannot easily accommodate change.

All of this leads to a system that is difficult to administer. It is challenging for staff to manage, it is hard for future property and business owners to understand, and it is unclear for all involved how Johnstown evolves over time, well past the initial PUD approval.

The Development Code Rewrite/Update is an opportunity to hit “pause” on all of this. It is time to take a step back and identify a better way.

Our team has ideas about a better way, and we are excited to share them with the stakeholders in Johnstown. We believe in simplifying things rather than making them more complex. While the growth and development issues that the Comprehensive Plan addressed are quite complex, a good development code doesn’t need to be. In fact, it is by closely focusing on the essence of community building—and what a few simple rules addressing these issues mean to Johnstown and the community planning goals—that the best strategy to improve Johnstown’s development regulations can be discovered.

PROJECT METHODOLOGY

Development regulations are one of many tools cities can use to build the future envisioned by the community. We often regulate development of cities as if they are predictable and static, with quantifiable and absolute standards. However, cities are complex systems—unpredictable, organic, and constantly evolving due to millions of small decisions made every day. Our approach to regulations is rooted in the fact that defining appropriate development typologies within a community can enable better systems for creating desired outcomes. An urban-designed and systems-based approach to regulations encourages placemaking by focusing on the typologies that create place, within the public and private realms. This approach to development regulations creates tools that are understandable, implementable, enforceable, and defensible, but most importantly, that reinforce the most crucial aspects of the built environment—creating great places that endure.

Our approach to regulations is rooted in the fact that defining appropriate development typologies within a community can enable better systems for creating desired outcomes. ”

Please refer to the timeline for a schedule of anticipated events to accompany our approach.

Task 1: Diagnosis

The diagnosis task is about identifying conflicts and omissions with the current regulations that keep the community from achieving their vision for the future. Layers of code review will create a foundation for changes to the Development Code and subdivision regulations.

A preliminary review of the current land use and zoning code and subdivision regulation will be completed. The review will identify the initial topics for an informed discussion among all stakeholders regarding regulatory strategies appropriate to achieve Johnstown's planning goals. The preliminary review will be expanded on by identifying specific connections to the Johnstown Area Comprehensive Plan and other city plans to create a plan conformance report.

Task 2: Align

The primary issues identified within the diagnosis task will provide the topics for the creation of the critical issue summaries/case studies that will provide a brief (4-8 page) white paper on the key topics identified in the process. A typical code rewrite may have five to eight of these critical issues that are most important to the success of the project and require special facilitation. The critical issue summaries will result in a menu of options to address each issue based on the direction provided by the Johnstown Area Comprehensive Plan. Similarly, the case studies will identify and document multiple communities that have addressed the same issue in a variety of ways.

The case studies will intentionally focus on communities within and outside of the region to provide a diversity of experience. The critical issue summaries and case studies solutions identified will be modeled to provide a visual understanding of the change proposed. The modeling and documentation will be completed with the intent of being included in the Development Code updates.

The result of the align task will be the preparation of a draft regulation framework, created based on the review and feedback received from stakeholders. The framework will provide an annotated outline of the subdivision and zoning regulations, identifying: (1) areas in need of change—new provisions that are needed or old approaches that do not align with current policies; (2) areas to maintain in current form; and (3) areas to revise and amend, while keeping the substantive provisions and intent the same.

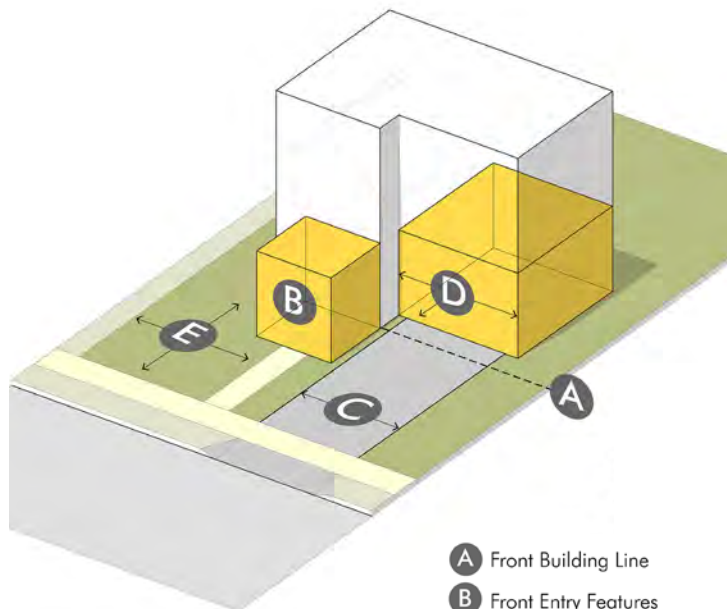
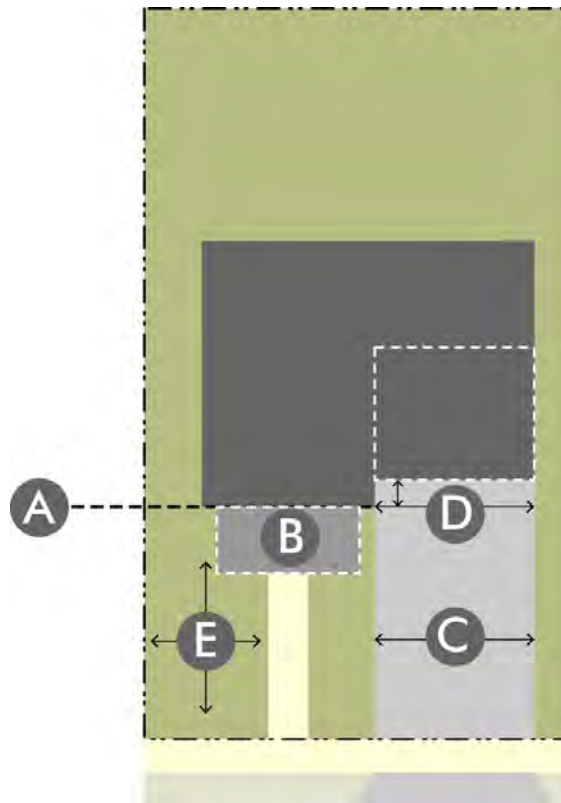
Task 3: Launch

The launch task will focus on the preparation of the development code regulation updates. Through multiple drafts of the updates and the adoption process, all stakeholders will have the opportunity to review the changes proposed and a draft of the updated documents. The documents will focus on creating clear, simple, user-friendly codes and regulations that incorporate graphics to demonstrate the intent and impact of a standard. The adoption of the updated Development Code regulations signifies the end of the rewriting process but the beginning of implementation and change. The Gould Evans + Ayres Associates team will be your partner in implementation of the new code through continued discussions and assistance in interpretation.



02 | qualifications

Our team includes code regulation experts, urban planners, urban designers, and civil engineers to provide you with guidance on your code rewrite that is informed by local understanding and years of relevant experience. Examples of our recent land use, development, and form-based code experience—including links to completed codes are also included in this section.



- A** Front Building Line
- B** Front Entry Features
- C** Driveway Width
- D** Garage Extent & Location
- E** Landscape Area

gould evans

Founded in 1974 in Lawrence, KS, Gould Evans is a design firm dedicated to using our creative powers to move the world forward. Our firm culture is built on using the design process to solve problems and improve our clients' competitive edge. We reward thought leadership that aims high—from high-performance buildings to high-performance cities.

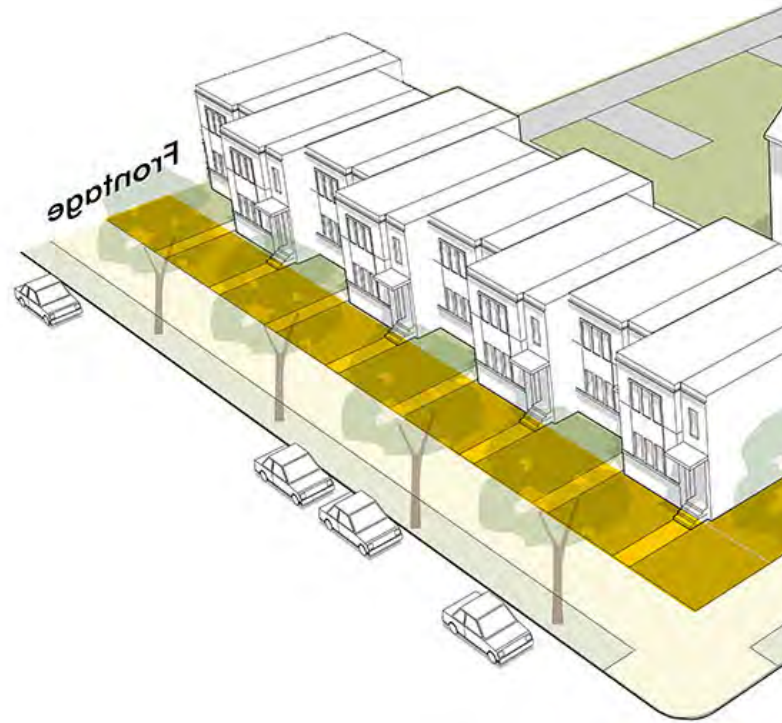
WE VALUE collaborative, multidisciplinary approaches that lend a variety of perspectives and professional expertise to the most challenging community development issues. We believe communities are best prepared to steward long-term collective goals when they consider a wide range of possibilities for the future. We support these possibilities through well-researched analysis that leads to pragmatic outcomes.

WE VALUE our project partners and community stakeholders who provide critical insights that lead to action-oriented steps. We believe that design and planning strategies, no matter how innovative and stylish, must be economically and politically sound to be successful. We do not champion theories or trends that contradict realities and characteristics of a particular community or initiative.

WE VALUE comprehensive and long-range perspectives, and the power of leveraging incremental decisions into significant change. We believe that sustainable community development starts with the region and ends at a site or building; it is not just about what is new and exciting, but more about what is time-tested and resilient. We recognize that the success of a community is measured by generations and not just by a single initiative or project.

WE ADVOCATE

- *Ownership* – A bold vision requires people who care enough to be there every day.
- *Education* – Commitment by the community translates a vision into actions.
- *Innovation* – Research converts progressive ideas into strategies.
- *Integration* – Comprehensive perspectives organize complex systems into great communities.
- *Implementation* – Pragmatic courses of action create your legacy.



It needs to be a lot easier to build great communities. Knowing what matters at each scale of the city, focusing limited resources to create productive places, and creating plans that inspire action demystifies the art and science of city building by remembering that cities are made to bring people together.

OUR GUIDING PRINCIPLES

We use a design-based methodology to simplify the building of cities, focusing on the systems, patterns, and types of development that create community. The **systems** of development including natural features, connectivity, locations, and economic markets that define the city at the citywide/regional scale. The **patterns** of development—civic and open space, land use, street networks, and market strategies—define a city at the neighborhood and district scale.



We translate community vision and values into workable plans, urban design strategies, and development regulations.

The **types** of development—streetscapes and open spaces, buildings, streets, and capital improvements—define the city at the block and lot scale. We use this organization to specify the context and places needed to create authentic, great cities.

We Design Cities for People

Great and equitable cities encourage human interaction and bring diverse sets of people together.

We Focus on Well-Designed Public Spaces

The arrangement and design of streetscapes and public spaces is a community's primary opportunity to express their collective values and improve quality of life through public investment.

We Pursue Productive Development Patterns

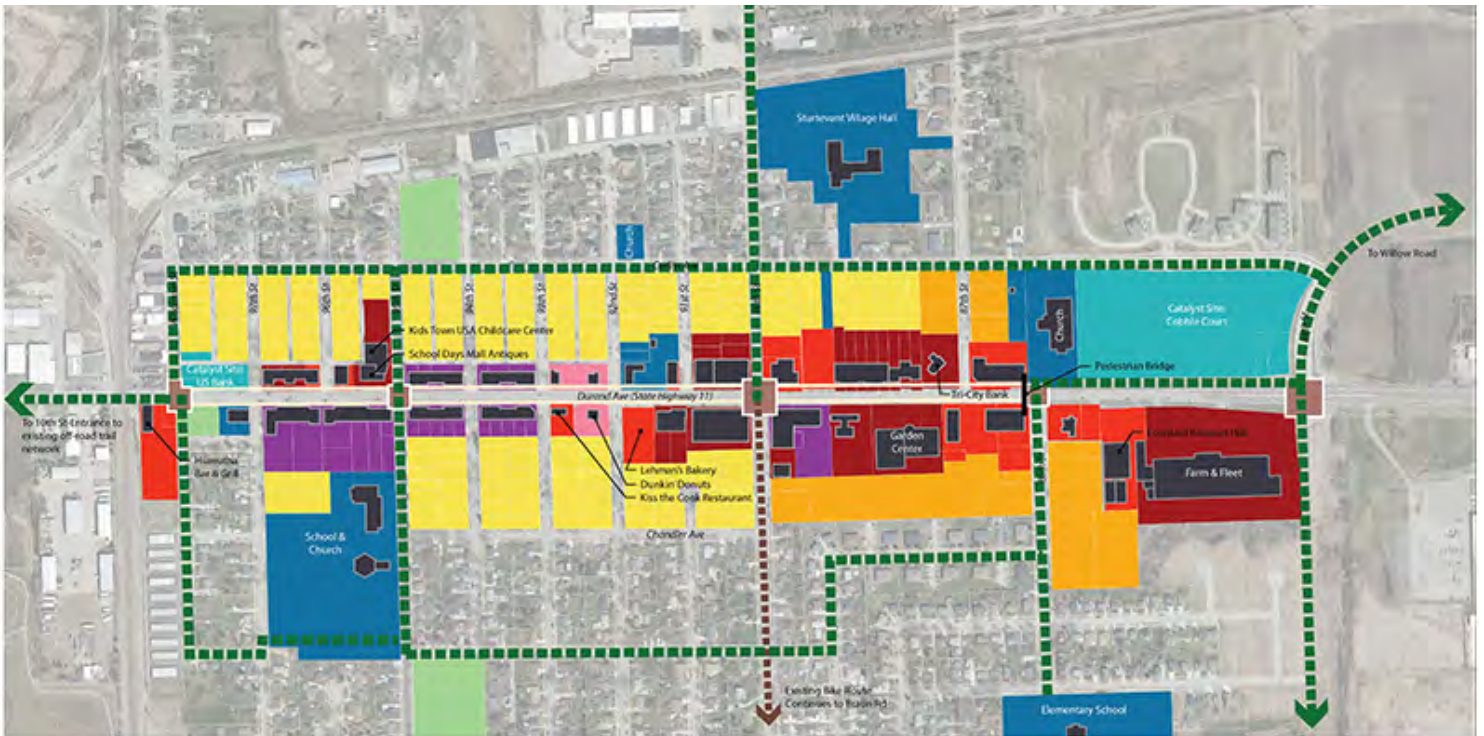
Understanding the public cost of development choices helps a community use its limited resources to create productive, fiscally sustainable cities and avoid creating communities it cannot afford to maintain.

We Enable Cities to be Built in Increments

A community built by many hands encourages the human-scaled, diverse places that define great cities.

We Cultivate Ownership by People

Effective city building requires local ownership. This is only possible when shared values are identified and responsibility to the greater community is cultivated among stakeholders.



Ayres Associates' foundation of personal, responsive service was established in 1959 when Owen Ayres founded the firm in Wisconsin. Owen, a former B-24 bomber pilot, began the firm with five employees specializing in general civil engineering.

Ayres Associates remains dedicated to employee ownership, a structure that began in 1959 and continues today. This enables all employees to benefit directly from company performance. They practice open book, open door, and open communication policies with their employees.

Ayres Associates has grown into a nationwide multi-specialty professional services firm. They have about 300 employees providing services from 13 offices in five states.

While Ayres Associates takes pride in making a big impact through designs that meet clients' needs, they strive to minimize the impact that their own operations have on the environment. Ayres Associates not only incorporates environmentally responsible features into the designs it provides to clients, but also uses dozens of energy-saving and waste-reducing practices each workday to reduce the footprint of their offices.

QUICK FACTS:

LOCATION:

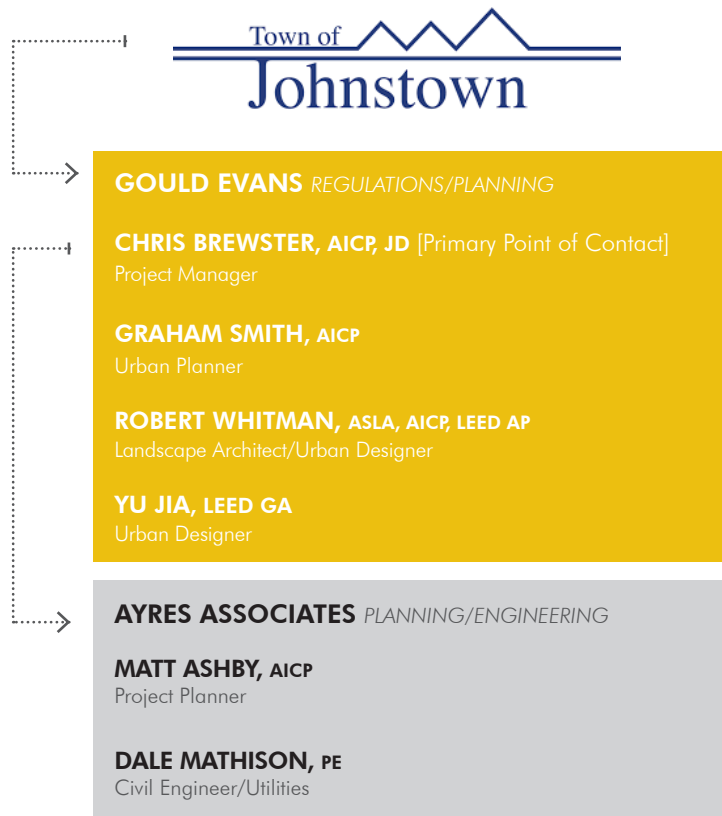
214 W. Lincolnway, Suite 22, Cheyenne, WY 82001

WEBSITE: www.ayresassociates.com

ESTABLISHED: 1954

PRINCIPAL CONTACT: Matt Ashby, Urban Planner
ashbym@ayresassociates.com; 307.634.9888

TEAM ORGANIZATION



PERSONNEL AVAILABILITY

Our studio's current project commitments include several planning and development code projects. We are in varying stages of the planning process with these projects, which typically require six months to one year to complete. If Gould Evans were awarded the proposed project, it would be staffed adequately by senior-level planning professionals and integrated into our workload to meet your time frame for project delivery. By utilizing staff projections and strategic marketing, we have succeeded

in retaining our planning staff over a long period of time, thus offering our clients stability throughout the duration of their planning projects.

Our proposed team members are available to begin this project immediately following negotiation of a contract. Our team is committed to providing optimum service to ensure the most appropriate code is developed for the Town of Johnstown.





CHRIS BREWSTER, AICP, JD

Project Manager

Education

Juris Doctorate,
University of Missouri-Kansas City
Bachelor of Science, Business,
University of Delaware

Registration

Missouri Bar
American Institute of Certified Planners

Experience

20 years with Gould Evans
26 years overall

GOULD EVANS

Chris specializes in integrating physical planning policies, urban design principles, and form-based development strategies into development regulations and capital improvement policies. As a planner and an attorney, Chris provides a creative approach to planning, development, and urban design issues that need legal and technical solutions. Since joining Gould Evans in 2001, he has worked on all scales of planning and urban design issues, from regional and comprehensive plans focusing on policy, to neighborhood and street-scale plans that focus on design and implementation. Chris has managed several development regulation design guideline and implementation projects for municipal clients, many of which have been recognized for awards and excellence among planning peers. Before joining the firm, Chris served as the Assistant City Attorney for the City of Lee's Summit, Missouri, and previously worked for Johnson County, Kansas, Transit.

SELECT EXPERIENCE

City of Greeley, CO

Development Code Update (current project)

City of Fort Lupton, CO

Development Code Update (current project)

City of Brighton, CO

Land Use and Development Code Update

City of Blue Springs, MO

Unified Development Code and Comprehensive Plan

City of Cheyenne, WY

Unified Development Code/Form-Based Code

City of North Kansas City, MO

Form-Based Code; Burlington Corridor Overlay Ordinance,
Design Guidelines; On-call Services (past 15 years)

City of Parkville, MO

Zoning and Subdivision Update

City of Gardner, KS

Land Development Code

Mid-America Regional Council – Kansas City, MO

Model Sustainable Development Code and Code Audits

City of Leavenworth, KS

Downtown/North Leavenworth Neighborhood Plan



GRAHAM SMITH, AICP
Urban Planner

Education

Bachelor of Science in Geography;
Master of Regional and
Community Planning,
Kansas State University

Registration

American Institute of Certified Planners

Experience

19 years with Gould Evans
24 years overall

GOULD EVANS

Graham, as the Director of the Gould Evans Studio for City Design, focuses on providing policy and urban design guidance to communities and clients. Through the preparation of community, area, neighborhood, corridor, special project plans, design guidelines, and regulations, Graham provides the clients he engages with visionary, implementable plans for the future. One constant among Graham's projects has been the innovative and involved stakeholder engagement. From defining the vision to carrying out implementation actions, the stakeholders in any process are the key to success.

SELECT EXPERIENCE

City of Fort Lupton, CO

Development Code Update (current project)

City of Brighton, CO

Land Use and Development Code Update

City of Gardner, KS

Land Development Code

City of Blue Springs, MO

Unified Development Code and Comprehensive Plan

City of Cheyenne, WY

Unified Development Code/Form-Based Code

City of Parkville, MO

Zoning and Subdivision Update

Unified Government of Wyandotte County and Kansas City, KS

Downtown Parkway District Master Plan; Downtown Neighborhoods Master Plan; State Avenue Transit Improvement Plan

City of Mountain Brook, AL

Commercial Villages Master Plan and Zoning Ordinance

City of Tonganoxie, KS

On-call Planning Services

City of Prairie Village, KS

On-call Planning Services



ROBERT WHITMAN, ASLA, AICP, LEED AP
Landscape Architect/Urban Designer

Education

Bachelor of Landscape Architecture,
Kansas State University

Registration

Licensed Landscape Architect
American Institute of Certified Planners
LEED Accredited Professional

Experience

25 years with Gould Evans
25 years overall

GOULD EVANS

Robert has considerable experience in site development, landscape architecture, urban design, and community planning projects. For the last 25 years, he has worked with several public clients to plan and design community spaces, such as playgrounds, arboretums, gardens, parks, trails, and open space. Robert is an expert on regional plant materials, having developed a catalog of plant material, growing criteria, and other pertinent information.

SELECT EXPERIENCE

City of Gardner, KS

Land Development Code

City of Blue Springs, MO

Unified Development Code and Comprehensive Plan;
Adam's Pointe Golf Club

City of Kansas City, MO

Midtown/Plaza Area Plan; Kansas City Sculpture Garden at the Nelson-Atkins Museum of Art; Broadway Streetscape; Nelson-Atkins Museum of Art Bloch Building Site Development; Liberty Memorial Improvements, Penn Valley Park; Riverfront Heritage Trail; Independence Boulevard Streetscape Improvements

City of Overland Park, KS

Overland Park Arboretum and Botanical Gardens Master Plan; Welcoming Garden, Iris Garden, and Train Garden; Campus Master Planning (Including Trails and Arboretum); Courtyard; Japanese Garden Concept Design

City of Cheyenne, WY

Citywide Park Standards

City of Westminster, CO

Westminster Promenade



YU JIA, LEED GA
Urban Designer

Education

Master of Urban Planning,
University of Virginia

Bachelor of Engineering in
Landscape Architecture,
Hunan University

Registration

LEED Green Associate

Experience

3 years with Gould Evans
3 years overall

GOULD EVANS

Yu is an urban designer with a unique background in environmental and urban planning, engineering, and landscape architecture. This multidisciplinary experience gives her a dynamic understanding of the complexities of cities and the care with which they must be planned and designed. Yu has a keen eye for how places are created through the assembly of public investments and private development. This knowledge allows her to create simple, yet effective, graphics to demonstrate planning principles at all scales of a city or study.

SELECT EXPERIENCE

City of Brighton, CO

Land Use and Development Code Update

City of Lansing, KS

Development Code Update

City of Joplin, MO

Development Code Update

City of Kansas City, MO

Westport District Master Plan

City of Wichita, KS

Walkable Development Plan

K-113 Corridor Plan

Corridor Plan

City of Tonganoxie, KS

On-call City Planning

City of Bella Vista, AR

Comprehensive Plan



MATT ASHBY, AICP, CUP
Project Planner

Education

Master of Science, Urban Design;
Master of Science,
Urban and Regional Planning,
University of Colorado

Bachelor of Science,
Environmental Design,
University of Colorado

Registration

American Institute of Certified Planners
Certified Urban Designer

Experience

5 years with Ayres Associates
19 years overall

AYRES ASSOCIATES

Matt's urban planning expertise complements Ayres Associates' engineering, architectural, geospatial, and environmental services. Based in their Cheyenne, Wyoming, office, Matt provides planning services on projects nationwide. Matt served for seven years as the City of Cheyenne's planning director and brings nearly 15 years of planning experience. His enthusiasm for vibrant community development sharpens the focus of Ayres' work on brownfield redevelopment, transportation planning, urban park and recreation planning, and landscape architecture.

Matt's eye for innovation has been recognized by his peers, with project accolades including the American Planning Association's Daniel Burnham Award for the Cheyenne Metropolitan Planning Organization's Plan Cheyenne. Matt has demonstrated success in leveraging grant funding to build vision and motivate investment, as evidenced in the West Edge brownfields revitalization project in Cheyenne.

Matt's experience translating vision into code is demonstrated by his leadership as staff in Cheyenne implementing the Plan Cheyenne vision into the Unified Development Code. Writing code as a consultant and implementing code as city staff are two very distinct roles. Matt has experience bridging these two roles and can help provide insights that improve the functionality of regulatory documents while avoiding political pitfalls.

SELECT EXPERIENCE

City of Brighton, CO

Land Use and Development Code Update

City of Cheyenne, WY

West Edge Area-wide Plan; Plan Cheyenne Comprehensive Plan & Unified Development Code

City of Durango, CO

Downtown Code Audit

Town of Buena Vista, CO

Strategy Planning, Partnership Facilitation,
Main Street Branding & Storytelling

Town of Estes Park, CO

On-call Planning Support & Development Review



DALE MATHISON, PE
Civil Engineer/Utilities

Education

Bachelor of Science,
Civil Engineering,
Colorado State University

Registration

Registered Professional Engineer

Experience

5 years with Ayres Associates
22 years overall

AYRES ASSOCIATES

Dale joined Ayres Associates in 2016, bringing 16 years of experience in project management, municipal utilities, pipeline design, and hydraulic analysis. He brings public and private sector design and construction perspectives, having worked for Ayres Associates before a lengthy stint with the Department of Utilities in Sacramento, California.

Dale has managed water, sewer, and stormwater capital improvement projects from planning and design through construction. His projects were located in downtown urban, mixed-use areas, established residential neighborhoods, new developing subdivisions, potential annexations areas, adjacent and within area parks, and along commercial corridors.

Dale has worked with folks from multiple city departments, including planners, landscape architects, transportation engineers, and others to provide technical review of development projects. Often, this involved keeping in step with changing development standards and land use and zoning maps for the city. He was involved in updating the City of Sacramento's standard specifications and development design and procedures manual.

At Ayres, Dale works with a team of local, experienced engineers who understand the development process of many of the municipalities in Northern Colorado.

SELECT EXPERIENCE

Town of Jamestown, CO

Drainage and Stormwater Management Master Plan

City of Commerce City, CO

Irondale Neighborhood and Infrastructure Plan

Town of Timnath, CO

Master Drainage Plan Update

City of Loveland, CO

Stormwater On-call Small Project Design

Town of Naturita, CO

Sanitary Sewer Design

Mesa County, CO

Detention Pond/Park Design, Drainage Analysis, and Public Outreach



LAND USE & DEVELOPMENT CODE UPDATE | BRIGHTON, CO

CHALLENGE

Be Brighton, the City's new comprehensive plan, is a bold vision to return to historic development patterns and good civic design to prepare the community to grow in a more intense, yet more coordinated and livable manner. This plan also aims to balance this growth while preserving and reconnecting to the community's agricultural heritage. However, the community's development codes were ill-equipped to meet these values and ill-prepared for the types of projects that were coming Brighton's way due to Front Range market forces. Planners and developers were increasingly resorting to "planned development approaches" that were cumbersome, confusing, and difficult to administer over time.

ACTION

The planning team ushered the community and stakeholders through three main stages of engagement: diagnose, align, and launch. The "diagnose" phase was primarily an information gathering stage to build expectations among participants, familiarize everyone with established planning policies, and better understand how regulations might impact those policies.

In the "align" phase, consultants and city staff led a team of development professionals, stakeholders, and public officials on a "Metro Innovations Tour" of Front Range communities that exemplified development principles in the plan. Participants were able to see, feel, experience, and measure actual projects and provide fresh insights into what the future of the City's development code could be. In the "launch" phase, the community participated in robust discussions on draft regulations with these issues and examples fresh on their mind.

RESULTS

The Brighton, CO, Land Development Code achieves the following:

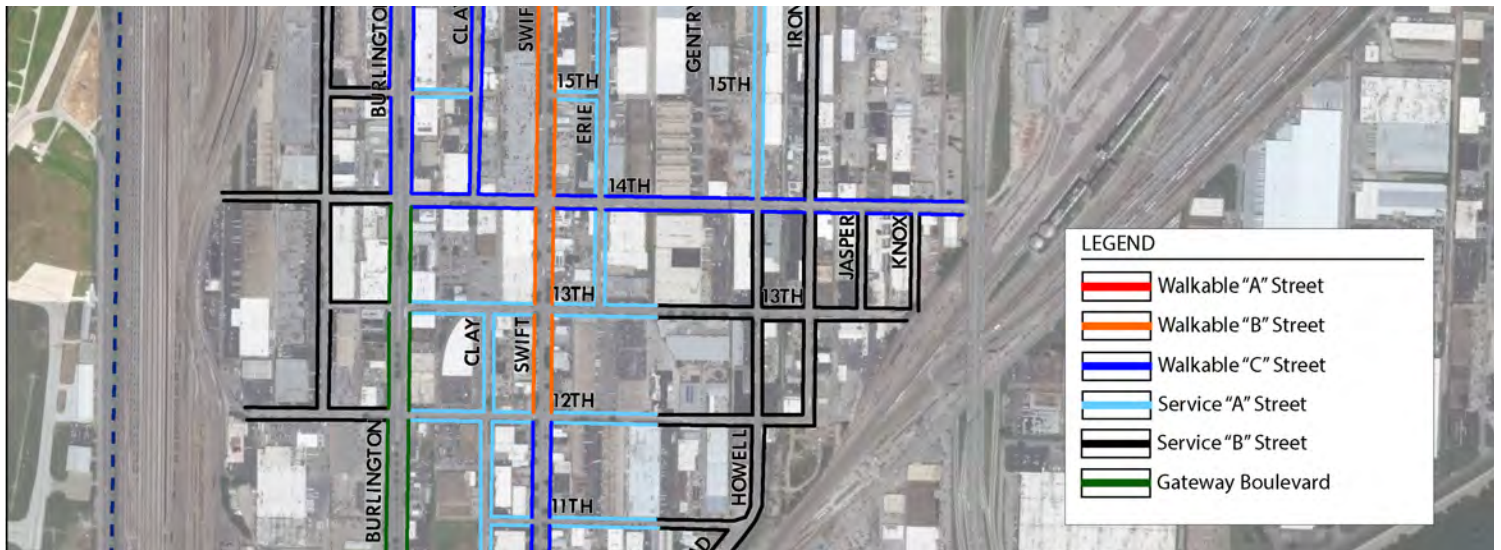
- Streamlines approval process, particularly with regard to platting and design review and clarifies specific decision-making criteria for each type of application in the code
- Emphasizes the urban design aspects of streets and promotes multimodal transportation with a wider range of street cross-sections for different contexts of the community
- Enables a wider range of housing types within existing districts
- Integrates form-based strategies into city-wide development standards
- Requires water efficient landscape through flexible performance criteria in landscape standards
- Reduces the regulatory emphasis and visual prominence of surface parking through flexible standards, mode-shifts, and design
- Promotes the agricultural heritage of Brighton with options for agri-tourism, farm worker housing, agriculture preservation, and integrating small-scale agriculture into the community

Firm: Gould Evans + Ayres Associates

Client Reference:

Holly Prather, Community Development Director
City of Brighton, CO
303.655.2059; hprather@brightonco.gov

Completed Code: <https://www.brightonco.gov/363/Land-Use-Development-Code>



FORM-BASED CODE | NORTH KANSAS CITY, MO

CHALLENGE

North Kansas City is an old industrial city, immediately adjacent to and across the river from downtown Kansas City, Missouri. A metropolitan version of “company towns” that were common in the era North Kansas City was developed, the city includes a large industrial land base, a small and walkable downtown, and human-scale, mixed-density neighborhoods. Outside of these areas, North Kansas City exhibits many of the patterns of post-war, automobile development. The city’s comprehensive plan recommended a shift in development policies and prioritized “place making,” “multi-modal” transportation, and urban design in this historic industrial town.

ACTION

Based on context and character areas in the comprehensive plan, Gould Evans separated the city into two distinct contexts—the “urban areas” of gridded streets, subtle and fine-grained land use transitions, historic industrial areas, and the “conventional areas” where automobile-oriented patterns are prevalent and not likely to change. With this framework, Gould Evans led stakeholders on a discovery of the different elements of their community, identifying distinct street types, frontage types, building types, and open space types. Using these patterns from their own community, stakeholders were able to envision a simplified development code that emphasized the unique nature of many different places in their community envisioned by their plan.

RESULTS

The North Kansas City zoning ordinance has several innovative elements applying regulatory tools to their distinct context:

- Two repurposed residential zoning districts—one which reflects the human-scale, walkable patterns of older single-family neighborhoods, and a “mixed-density” neighborhood based on building types that significantly expand development capacity for infill in urban areas
- An urban areas form-based code, tailored to the highly industrial context, but based on historic urban patterns and frontage types
- A simplified approach to their downtown district and urban design guidelines
- Flexible parking standards that anticipate future transit expansion on key corridors
- A simplified use table based on the scale of uses that shifts many of the industrial/commercial transitions to performance-based standards

Firm: Gould Evans

Client Reference:

Sara Copeland, Community Development Director
City of North Kansas City, MO
816.274.6006; scopeland@nkc.org

Completed Code: https://library.municode.com/mo/north_kansas_city/codes/code_of_ordinances



TRANSIT-ORIENTED DEVELOPMENT REGULATORY UPDATE

INDIANAPOLIS PUBLIC TRANSPORTATION CORPORATION (INDYGO) | INDIANAPOLIS, IN

Indianapolis and Marion County are underway implementing a new Bus Rapid Transit (BRT) system. The system will improve transit connectivity throughout the City/County and provide improved access to a greater portion of the community population. The system intentionally connects people to destinations, jobs, healthcare, education and services, improving the quality of life for residents and patrons. To ensure the transit investment is leveraged to the benefit of the community and currently under-served populations, the City of Indianapolis, IndyGo, the transit provider, and the Indianapolis Metropolitan Planning Organization are supporting an update to the development regulations. The update is focused on enabling and encouraging transit-oriented development in proximity to the current and future BRT lines. Delineated from station area master plan prototypes, regulatory updates have been designed to create compact, connected, and diverse development patterns to support the transit service, build the development and business markets, improve access locally and regionally, create place, and improve community value.

Implementation of the transit-oriented development policies are being realized through form-based changes to the current zoning ordinance that focus on the design of specific community elements.

Regulatory changes include:

- Creating pedestrian-oriented public space through improved street design standards
- Supporting compact development patterns through revisions to the building, lot, and open space standards
- Enabling a broader mix of uses appropriate to a variety of contexts, within individual zoning districts, both residential and mixed-use districts
- Addressing parking standards appropriate to support transit

The draft regulations are being prepared for adoption, with the process starting in the coming months.

Firms: Gould Evans

Client Reference:

Brooke Thomas, Director of Strategic Planning
IndyGo
317.559.4939; bthomas@indygo.net

Link to Draft Regulations in Progress:

<https://gouldevans-my.sharepoint.com/>



COMPREHENSIVE PLAN & UDO BLUE SPRINGS, MO

CHALLENGE

The City of Blue Springs is on the eastern edge of metropolitan Kansas City. The City's proximity to the metro and a strong school district have allowed it to thrive as one of the great suburban communities in Kansas City. However, like many suburban communities, the City has struggled to seize a unique identity, has wrestled with declining strip and car-oriented development, and seeks to resurrect its historic downtown. Rapidly changing demographics (national trends), shifts in housing preferences, the desire for a high level of recreation amenities/healthy living, retaining and attracting jobs, and the potential for regional commuter rail are all things weighing heavily on the minds of citizens and leaders as they create development policies and regulations responsive to their context and the current situation.

ACTION

This project initiates a planning system with three scales of planning for the City of Blue Springs:

- A General Plan addressing broad, comprehensive city-wide development policies and focusing on the systems and frameworks that create distinct places in the city
- Specific Plans addressing unique contexts and coordinating the relationships between public realm and private development patterns
- Development/Project Plans that enable incremental and strategic action by the public and private sector

This system allows staff to continue to pursue ongoing and proactive planning under the vision and policies of the General Plan and identifies how each increment of development contributes to the larger and greater whole.

RESULTS

The outcomes from this plan include a renewed emphasis on the City's unique access to natural amenities as the organizing urban design framework for the City, as well as a system of street types that reinforce public realm design as a key contributor to community identity and distinct places in the community. Also important was reinforcing neighborhoods as the fundamental planning element of the community and exploring opportunities to strengthen or introduce gathering places as a focal point of all neighborhoods—including integrating housing options into smaller-scale redevelopment projects.

Identifying strategic and incremental redevelopment opportunities within aging automobile-oriented corridors creates an opportunity for improving multimodal networks with connections off of the major corridors. All of this was included in updates to the Unified Development Ordinance in order to implement specific plans and development concepts identified in the planning process.

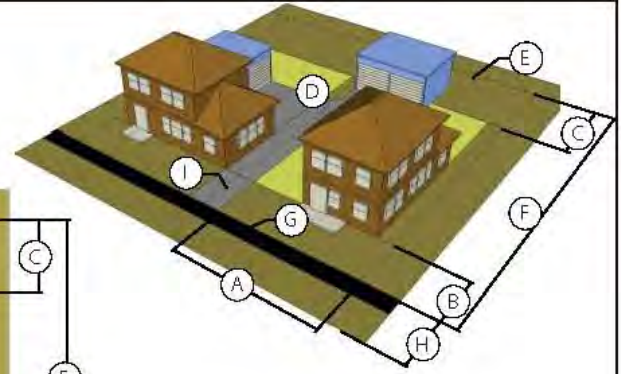
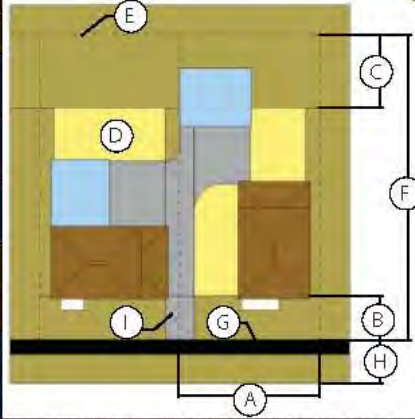
Firm: Gould Evans

Client Reference:

Scott Allen, Community Development Director
City of Eau Claire, WI (formerly at City of Blue Springs)
715.839.4914; scott.allen@eauclairewi.gov

Completed Code: <https://ecode360.com/BL3243-DIV-06>

TYPE DD7: DETACHED DWELLING / SMALL LOT		
Lot Area	5,000 square feet	
Lot Frontage	48' 60' on corner lots	
Setbacks: (Principal Building)	Front	25'
	Side	5' 10' on street side corner lots
	Rear	25'
Setbacks: (Accessory Building)	Front	10' behind front building line
	Side	2' 15' on street side corner lots
	Rear	2' 5' if alley loaded
Total Lot Coverage	60%	
Building Height	Principal	Up to 2.5 stories
	Accessory	Up to 2 stories but in no case higher than the principal building



[a] 0' setbacks on attached buildings require a party wall meeting all building code standards and proper designation on a recorded plat.

UNIFIED DEVELOPMENT CODE | CHEYENNE, WY

CHALLENGE

The City of Cheyenne had recently completed an award-winning Comprehensive Plan. However, the City's dated development regulations conflicted with many concepts in the plan, and the development process remained cumbersome and contentious as development was regulated by three different codes: the zoning ordinance, subdivision standards, and street and site design standards—often with differing or even conflicting regulatory approaches.

ACTION

The project philosophy was to “clarify, streamline, and improve” the City's development regulations and processes. Gould Evans lead a highly participatory and unique code update process using a community design charrette, focus groups and special topic workshops, a multi-layered public information program, and a project website, to guide a wide variety of stakeholders through discussion on a new development code. Plan Cheyenne prioritizes many urban design principles, mixed-use development patterns, and smart growth policies that can be better implemented through form-based regulations. Gould Evans developed a code structure that blends many of the current regulations with new form-based techniques to implement the planning and urban design policies of Plan Cheyenne.

RESULTS

The new Unified Development Code includes:

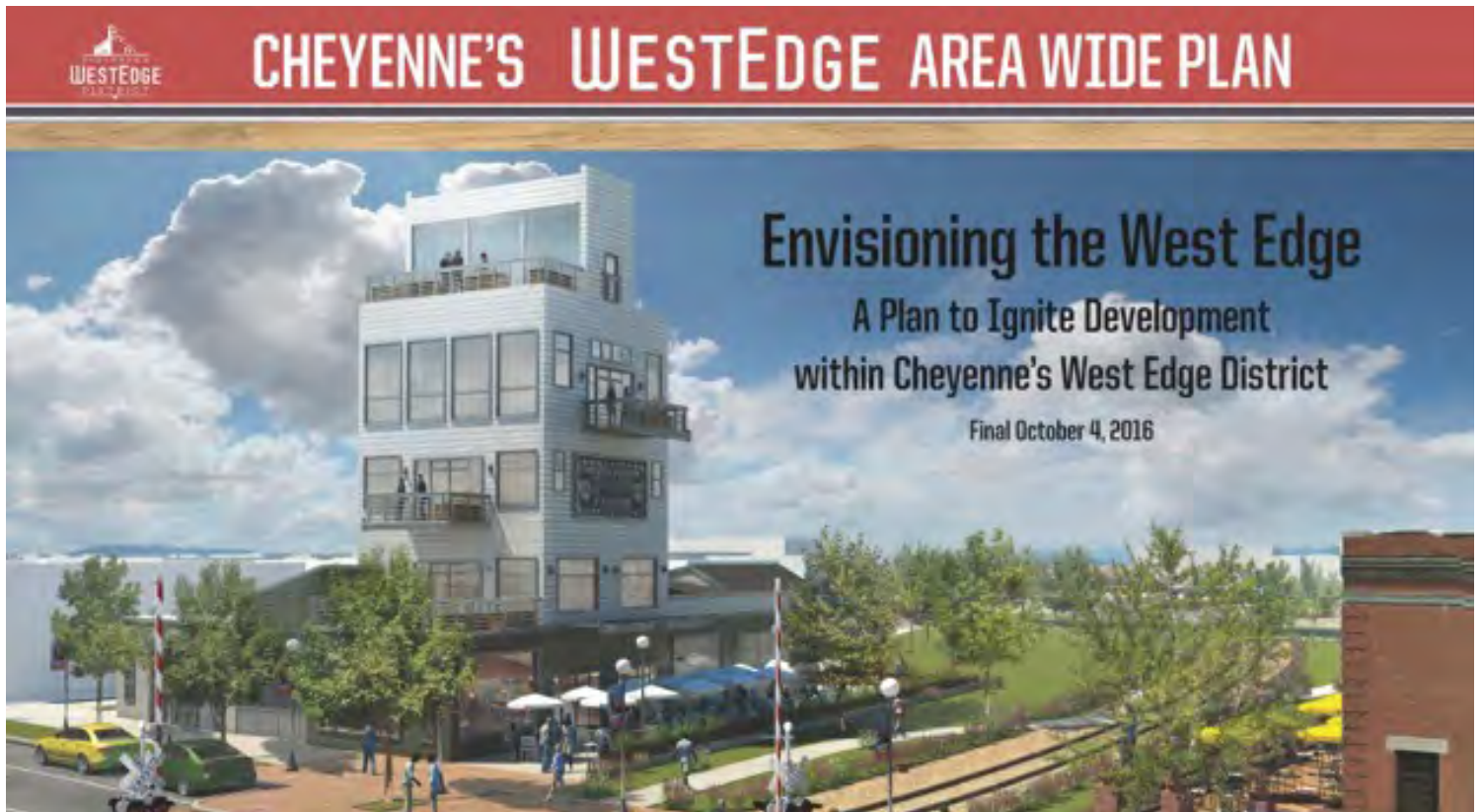
- Consolidation and elimination of conflicts between Cheyenne's existing development regulations
- Explicit purpose and intent statements that tie the regulations directly to concepts in the plan
- Integrating form-based and urban design standards into the City's regulatory structure
- A template form-based code that can accommodate planning, design, and development of new mixed-use activity centers and replace the current and cumbersome “planned district” process
- Increased administrative flexibility, supported by specific design objectives and decision-making criteria
- Streamlined development approvals with clear decision-making criteria
- A user-friendly format, including tables and graphics

Firm: Gould Evans

Client Reference:

Brandon Cammarata, Senior Planner
City of Aurora, CO (formerly at City of Cheyenne,
WY) 303.220.0133; bcammarata@yahoo.com

Completed Code: <https://www.cheyennecity.org/Your-Government/Departments/Planning-and-Development-Department/Unified-Development-Code>



WEST EDGE AREA-WIDE PLAN | CHEYENNE, WY

Ayres Associates helped the City of Cheyenne land a \$1M EPA Brownfield Grant to launch a neighborhood revitalization plan for this industrial mixed-use neighborhood looking for an identity. Combining environmental studies, flood control analysis, zoning adjustments, and economic development, this project is a great case study demonstrating how vision gets translated into development code. The planning process included two phases. The first—West Edge Blueprint—provided an overview of the management strategy and deeper investigations into stormwater and parks recommendations. The second—Area Wide Plan—provided an intensive look at how the planning recommendations from the Blueprint could be achieved through customizing zoning and development standards to accommodate infill and redevelopment. These included recommendations for specific administrative waivers that would enable predictable flexibility.

Community outreach was a key component to the success of this neighborhood plan. Explaining the complex issues through the use of icons and imagery helped everyone, regardless of technical expertise, join the conversation

and contribute to the vision. They also used innovative engagement methods to attract non-traditional crowds to provide feedback. Transforming public meetings into an event people actually enjoy—like a music festival—helped extend your outreach to broader reaches of the community.

Finally, visualizations play an important role in communicating the power of new development. Their award-winning Virtual Tour connects 3D animations to citizens and developers in an engaging way, helping to immerse their stakeholders in the excitement of revitalization.

Firm: Ayres Associates

Client Reference:

Brandon Cammarata, Senior Planner
City of Aurora, CO (formerly at City of Cheyenne,
WY) 303.220.0133; bcammarata@yahoo.com

Completed Plan: <http://cheyennewestedge.com/initiatives/area-wide-plan/>



MASTER PLAN & ZONING CODE UPDATE | GERING, NE

Plan Gering implements a district framework approach that recognizes how each district plays a unique function within the City and respects the interdependency of the parts. The City was divided into 11 districts based on character, context, and development patterns. Each district defined the existing and future desired character, providing predictability in planning and development, and allowing for flexibility with land uses. This approach could then be a model to use to enable small-scale commercial development in locations around town.

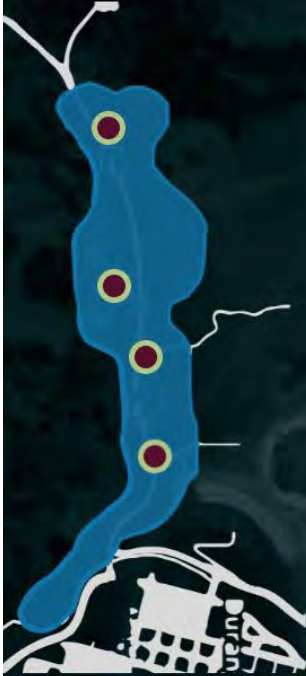
Planning can be somewhat foreign to residents, which is why Plan Gering was structured around a four-part vision that was identified by residents during the initial outreach efforts. Rather than having individual sections dedicated to land use, transportation, and natural resources, the plan is organized by the four community values, which has made it into something residents can relate to and makes the plan more relevant to their day-to-day lives.

Firm: Ayres Associates

Client Reference:

Annie Folck, Project Manager
City of Gering, NE
308.641.9684; afolck@gering.org

Completed Code: <https://www.gering.org/government/city-codes/zoning>



160 WEST

160 West is the gateway into Durango from the Four Corners region. It has a high volume of both local, regional, and tourist traffic, which could support more diverse land uses throughout the District. As Durango's population grows, the potential for more housing in this District will help it become an integral part of the community.

Assets:	Issues:
- Growing residential population - Prime redevelopment opportunities - Serves as gateway into Durango - Lightner Creek - Twin Buttes civic and recreational opportunities	- Excessively wide street design - Topography and floodplain - Inconsistent building quality and form - Unpleasant walk and bike experience - Lack of unique character and land use diversity

DISTRICT CODE ASSESSMENT | DURANGO, CO

Ayres worked with the City of Durango as a subconsultant to DHM Design to evaluate redevelopment and infill opportunities in Durango, Colorado, along a primary highway corridor adjacent to their downtown district. As part of the Durango District initiative, their team's prior code experience and innovative approach to zoning and development provided the ideal blend of vision with practical strategies to create effective implementation strategies for the municipal staff.

Firm: Ayres Associates

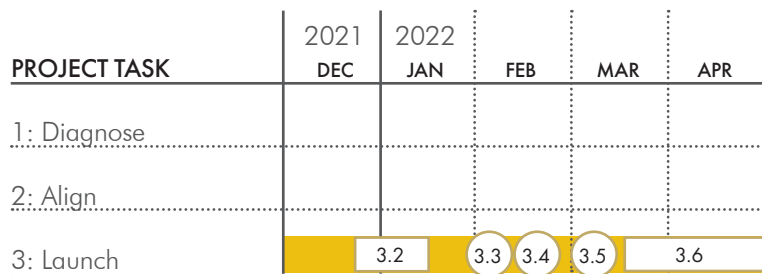
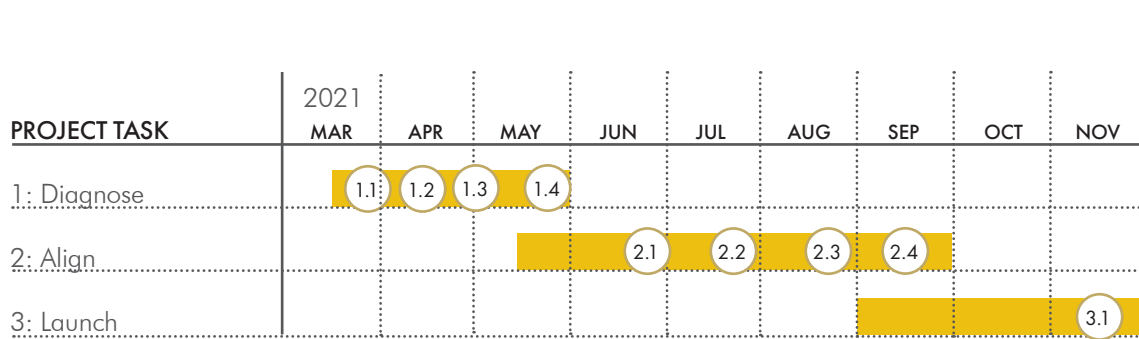
Client Reference:

Scott Shine, Planning Manager
City of Durango, CO
970.375.4850

03 | timeline + fee

We propose the following timeline and fees, based on the scope of work defined in the RFP.

PROJECT TIMELINE



- | | |
|---------------------------------|---|
| 1.1) Public Engagement Strategy | 3.1) Initial Draft |
| 1.2) Plan & Regulation Review | 3.2) Review and Comment Period |
| 1.3) Kick-Off Meeting | 3.3) Final Draft/Review and Comment Period |
| 1.4) Plan Conformance Report | 3.4) Public Open House/Officials Work Session |
| 2.1) Critical Issues Summaries | 3.5) Adoption Draft |
| 2.2) Public Open House | 3.6) Public Hearings |
| 2.3) Critical Issues Workshop | |
| 2.4) Draft Regulation Framework | |

The tasks identified are anticipated tasks to complete the project as defined within the proposed project approach. These items are intended to convey the timeline and public engagement opportunities anticipated. Each item will be further refined to create a project scope.

PROPOSED FEES

		Fee	Expenses	Total Cost
TASK 1: DIAGNOSE		\$24,980	\$2,600	\$27,580
Task 1.1	Public Engagement Strategy	\$1,630		\$1,630
Task 1.2	Plan and Regulation Review	\$14,350		\$14,350
Task 1.3	Kick-off Meeting	\$1,600		\$1,600
Task 1.4	Plan Conformance Report	\$7,400		\$7,400
TASK 2: ALIGN		\$27,500	\$3,400	\$30,900
Task 2.1	Critical Issues Summaries	\$14,800		\$14,800
Task 2.2	Public Open House	\$2,200		\$2,200
Task 2.3	Critical Issues Workshop	\$7,800		\$7,800
Task 2.4	Draft Regulation Framework	\$2,700		\$2,700
TASK 3: LAUNCH		\$88,000	\$7,200	\$95,200
Task 3.1	Initial Draft	\$42,800		\$42,800
Task 3.2	Review and Comment Period	\$5,400		\$5,400
Task 3.3	Final Draft/Review and Comment Period	\$22,600		\$22,600
Task 3.4	Public Open House/Officials Work Session	\$3,200		\$3,200
Task 3.5	Adoption Draft	\$8,800		\$8,800
Task 3.6	Public Hearings	\$5,200		\$5,200
TOTAL FEE		\$140,480	\$13,200	\$153,680

Expenses include travel, meals, lodging, car rental, printing and copies, mailing, and other expenses directly related to the project and process.

WHAT IS YOUR VISION FOR THE FUTURE OF JOHNSTOWN? LET'S GET TO WORK.

gouldevans

4200 Pennsylvania Avenue
Kansas City, MO 64111

816.931.6655

gouldevans.com

Town of Johnstown, Colorado

STATEMENT OF PROPOSAL RFP for Professional Planning Services: Development Code Rewrite / Update



**WHITE &
SMITH, LLC**
PLANNING AND
LAW GROUP

Mark White, Esq., AICP
mwhite@planningandlaw.com
www.planningandlaw.com

In partnership with:



**WHITE &
SMITH, LLC**
PLANNING AND
LAW GROUP

February 19, 2021

Ms. Kim Meyer, Director of Planning & Development
Town of Johnstown, CO
450 S. Parish Avenue
Johnstown, CO 80504

KANSAS CITY OFFICE:

S. MARK WHITE, ESQ., AICP
Admitted in Missouri and North Carolina

CHARLESTON, SC OFFICE:

E. TYSON SMITH, ESQ., AICP
*Admitted in South Carolina and Florida
South Carolina Certified Civil Mediator*

via electronic mail to: planning@townofjohnstown.com

Re: Request for Proposal for Professional Planning Services
Development Code Rewrite/Update

Dear Ms. Meyer:

On behalf of White & Smith Planning and Law Group and Logan Simpson, I am pleased to submit this response to the Town's Request for Proposal for the Development Code Rewrite/Update.

White & Smith partners are certified planners and attorneys with more than 50 years of combined experience in local government planning and land use law. In addition to our firm's extensive national experience, we have worked with nearly a dozen communities in Colorado including Aspen, Westminster, Adams County, Centennial, and Rio Blanco County. We are currently working with Logan Simpson on land use code updates in Eagle, Wellington, and Manitou Springs.

Logan Simpson is one of the largest community planning and design firms in the western U.S. The firm is currently leading the development of the *Johnstown Area Comprehensive Plan*. Logan Simpson team members are based in the firm's Fort Collins office.

I encourage you to contact our references, provided on [page 25](#) of our proposal. White & Smith has consistently demonstrated our ability to work with staffs, development communities, citizen groups, and governing bodies to develop successful strategies and to achieve consensus in the code update process.

Thank you for the opportunity to respond to the Town's Request for Proposal. If there are questions during the period of proposal evaluation, please contact me at (816) 221-8700 or mwhite@planningandlaw.com.

Sincerely,



S. Mark White, Esq., AICP
for White & Smith, LLC

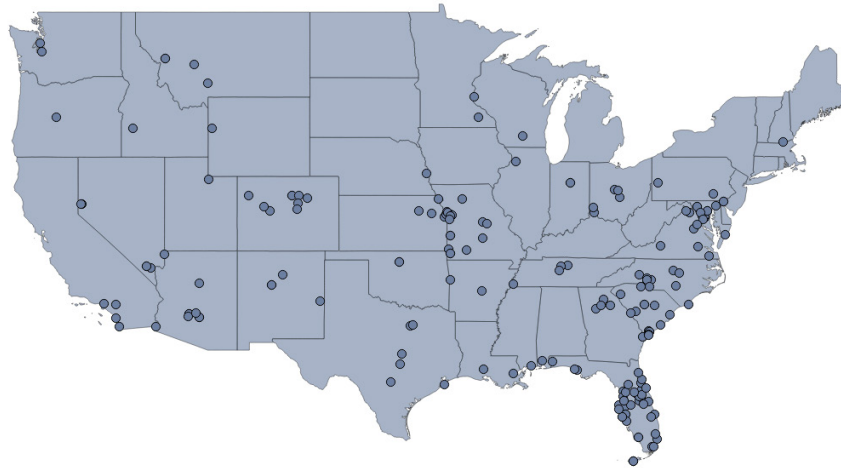
200 NE MISSOURI ROAD
SUITE 200

LEE'S SUMMIT, MO 64086
TEL 816-221-8700

WWW.PLANNINGANDLAW.COM

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White & Smith's national experience is extensive. Our planners have completed more than 150 code updates, specialized studies, growth management programs, and similar projects in over 36 states. Our clients range from small, rural communities to large, urban cities such as San Antonio, Los Angeles, and Washington, D.C.

In addition, we are not tethered to any single approach to land development regulation. Our codes range from conventional zoning regulations to modern form-based or composite zoning codes.

TEAM QUALIFICATIONS

White & Smith Planning and Law Group and Logan Simpson offer principal personnel who are **highly experienced and qualified** to prepare the Town of Johnstown's Development Code Rewrite/Update. We have the credentials and technical competence required to successfully analyze the existing code and ordinances, including their closeness of fit with new *Johnstown Area Comprehensive Plan* policies and directions, state and federal laws, and case law, as well as a best practices review of industry standards and peer communities.



WHITE & SMITH, LLC

PLANNING AND
LAW GROUP

Lead Consultant

White & Smith Planning and Law Group, with offices in Kansas City, Missouri, and Charleston, South Carolina, brings certified land use planners and planning attorneys to its development code work around the nation. We represent a diverse range of clients, including cities, counties, regional agencies, and state-level planning divisions. White & Smith, LLC is a small business, founded in 2005, with five full-time employees. The firm's partners bring over 50 years of combined experience in local government planning and land use law.



Subconsultant

Logan Simpson is one of the largest community planning and design firms in the western U.S. Founded in 1990, we have grown to seven offices in Tempe, Tucson, and Flagstaff, Arizona; Salt Lake City, Utah; Eugene, Oregon; Boise, Idaho; and Fort Collins, Colorado. We are an Arizona corporation, and our leadership is provided by eight principals with a variety of disciplines. Logan Simpson employs more than 130 staff with a collection of more than 750 total—and more than 50 award-winning—design and planning projects.

Our Team includes four certified planners, a Registered Landscape Architect, a GIS specialist, a graphic design specialist, and three land use attorneys, licensed in Missouri, South Carolina, Florida, and North Carolina (inactive). This provides our Team with a unique perspective and depth of knowledge particularly well-suited to the Town's project.

White & Smith Partner Mark White will serve as the Principal-in-Charge, and Planner Kelly Cousino will manage the project on behalf of the consultant team. Kelly is a certified planner with more than 16 years of experience, including 12 years as a local government planner.

White & Smith has led development code updates for urban, suburban, and rural communities around the country, ranging in size from North Augusta, South Carolina (population approximately 22,900) to Prince George's County, Maryland (population approximately 910,000).

Logan Simpson has a long history of working with Johnstown. Two of our principals contributed to a considerable amount of the Town's planning while at EDAW|AECOM—Bruce Meighen led the 2006 Comprehensive Plan and Downtown Master Plan, and Jana McKenzie guided the design for the 2534 Development Design Guidelines, Downtown Master Plan, and Downtown Streetscape Enhancements.

Logan Simpson is currently drafting Johnstown's Comprehensive Plan Update, with Jennifer Gardner serving as the project manager responsible for primary plan authorship. Her familiarity with the Town's character, structure, vision, and goals will help this project team to develop code recommendations that closely align with the Comprehensive Plan.

Our Team is prepared to address the challenges facing a fast-growing community like Johnstown. We have a deep bench with a range of disciplines,

White & Smith planners have completed more than 150 code updates & planning projects in 36 states.



OUR EXPERIENCE

White & Smith's national experience is extensive. Our planners have completed more than 150 code updates, specialized studies, growth management programs, and similar projects in over 36 states.



OUR CLIENTS

White & Smith represents a diverse range of clients, including cities, counties, regional agencies, and state-level planning divisions.



OUR LOCAL WORK

White & Smith has worked throughout Colorado including in Aspen, Centennial, Rio Blanco County, Westminster, Eagle, Wellington, Boulder, Brighton, Carbondale, Durango, and Adams County.

with experience in both leading entire zoning updates and in addressing Johnstown's pressing issues—such as encouraging adaptive reuse of historic downtown buildings; creating complete, connected neighborhoods; and moving from a system that relies on discretionary review to one focused on clear standards and streamlined, administrative decision making.

We are also adept at facilitating the public process—leading meetings, charrettes, focus groups, and one-on-one interviews.

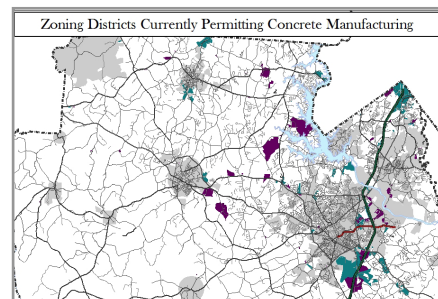
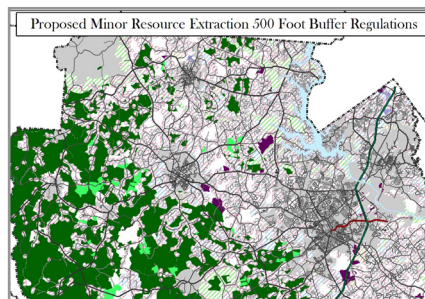
Our Team has **extensive experience** working with local governments and other public sector clients **in Colorado**. Logan Simpson has an office in Fort Collins, and the firm has worked throughout the state—including development of the *Johnstown Area Comprehensive Plan*.

Our Team is able to perform this project on time, within budget, and with the quality expected by the Town of

Johnstown and stakeholders. We have an **excellent record** of performance on contracts with other governmental agencies, using our experience, professional skills, and technology to deliver products quickly, efficiently, and with a high level of document production.

Logan Simpson and White & Smith are currently working together on the:

- » Comprehensive Plan Update and Land Use & Development Code for the Town of Eagle, CO;
- » Comprehensive Plan Update and Land Use Code Update for the Town of Wellington, CO;
- » Land Development Code Update for Teton County, ID;
- » Zoning Resolution Rewrite for Natrona County, WY;
- » Zoning and Subdivision Codes Rewrite for the City of Manitou Springs, CO; and
- » Historic Preservation Interim Ordinance for Ketchum, ID.



White & Smith provided policy alternatives regarding Concrete Plants and other Industrial Uses to the York County, SC Planning Commission and County Council, including separation distance requirement alternative scenarios developed in collaboration with staff using a GIS analysis. The revisions were adopted in October 2018.

Both firms also are currently working with the City of Westminster, CO—Logan Simpson is leading Westminster Forward, the City’s comprehensive plan update and White & Smith is leading a concurrent process, Code Forward, to update the City’s Municipal Code and Design Standards.

White & Smith and Logan Simpson form an unequalled partnership for delivering **dynamic thinking and proven performance**. Our professionals thrive in an environment where we deliver the highest quality product. We bring years of experience, focused areas of expertise, and **distinctively creative strategies** to every client. Our experts manage each aspect of a project, providing practical solutions that meet budgets and timelines and measure up to the highest standards of design and function. This focused expertise, uniform vision, and collaborative effort is what Johnstown needs to make its Development Code Rewrite/Update process a success.

Team Resumes

Resumes for all Team members with a primary role in the project are provided on the following pages, beginning with Principal-in-Charge, Mark White, and Project Manager, Kelly Cousino.



Our team successfully educates and facilitates to generate community "buy-in" that helps simplify the adoption process.

Our skills in explaining complex concepts to the public in ways that citizens and elected officials can grasp has been honed through our work across the country.

S. MARK WHITE ESQ., AICP

Partner | Principal-in-Charge
White & Smith Planning and Law Group

S. Mark White is recognized as an expert in zoning and subdivision law, form-based zoning, and sign regulations. He has over 29 years of experience representing clients at every level from city, state, and local governments, as well as major private developers. Mark has completed nearly 70 code updates and 110 similar projects in over 36 states. He will assist throughout the project, including with code drafting and legal review.

Mark is widely published, and his articles have appeared in a variety of notable publications, including the American Planning Association's Planning Advisory Service, the American Bar Association's Urban Lawyer, the International Municipal Attorneys Association's Municipal Lawyer, and the United Kingdom's Transport Policy. Mark is a frequent speaker at the national meetings of the American Planning Association, American Center for National and International Law, Congress for the New Urbanism, and various other professional organizations.

Mark was a member of the leadership team for the City of Lee's Summit, Missouri's Livable Streets Committee. This resulted in adoption of the Kansas City region's first Complete Streets resolution.

Mark will serve as the project's principal-in-charge, and will be responsible for responsible for contract management in addition to land use review, public engagement facilitation, and quality assurance review of the draft update.

SELECTED UDO, ZONING CODE, & SIGN CODE CLIENTS

Adams County, CO	Cincinnati, OH	North Augusta, SC
Albuquerque, NM	Collier County, FL	Olathe, KS
Amarillo, TX	Davidson, NC	Prince George's County, MD
Arlington, TX	Eagle, CO	Queen Creek, AZ
Aspen, CO	Fort Smith, AR	Rio Blanco County, CO
Boulder, CO	Grand Junction, CO	San Antonio, TX
Brighton, CO	Huntersville, NC	Sparks, NV
Carbondale, CO /	Kansas City, MO	St. Petersburg, FL
Roaring Fork Valley	Los Angeles, CA	Washington, DC
Community Coalition	Loudoun County, VA	Wellington, CO
Chapel Hill, NC	Madison, WI	Westminster, CO
Centennial, CO	New Castle County, DE	
Chapel Hill, NC		



EDUCATION

Juris Doctor
University of North Carolina
at Chapel Hill

*Master of Urban &
Regional Planning*
University of North Carolina
at Chapel Hill

Bachelor of Arts, magna cum laude
History/Political Science
Bethany College

PROFESSIONAL HISTORY

Partner, White & Smith, LLC
(2005-Present)

Adjunct Professor
University of Kansas
(2014-Present)

Associate and Partner
Freilich, Leitner & Carlisle
(1990-2005)

CERTIFICATIONS & MEMBERSHIPS

Missouri Bar

North Carolina Bar (*inactive*)

American Institute of
Certified Planners

American Planning Association

International Municipal
Lawyer's Association

KELLY COUSINO AICP

Planning Associate | Project Manager
White & Smith Planning and Law Group

Kelly Cousino brings over 16 years of local government and community planning experience to White & Smith’s projects. She is skilled at the local government process and, in particular, interfacing with the public and appointed and elected officials.

Kelly spent more than 12 years as a local government planner in one of the fastest growing small cities in the country. She served as the staff liaison for both the Planning Commission and the Board of Zoning Appeals. Kelly brings experience assisting citizens, business owners, developers, engineers, architects, and real estate professionals with interpretation and application of zoning and land development codes.

In her role at White & Smith, Kelly has assessed zoning and development regulations and participated in the comprehensive overhaul of local government zoning codes. In addition, Kelly has contributed to a number of Compatible/Joint Land Use Studies and CUS/JLUS Implementation projects, including drafting military overlay zoning districts.

As the project manager for this effort, Kelly will provide day-to-day coordination between the Town and consultant team, will conduct land use research and stakeholder interviews, review the existing code and reference documents, and will be the primary drafter of the Development Code Rewrite/Update.

SELECTED EXPERIENCE

Landscaping Regulations Diagnosis & Annotated Outline Adams County, CO	Comprehensive Zoning Ordinance Update Eau Claire County, WI
Development Codes Technical Evaluation & Comprehensive Development Codes Update Mount Pleasant, SC	Zoning Ordinance, Revision Amarillo, TX
Zoning & Subdivision Codes Rewrite York County, SC	Zoning Ordinance Update Mobile, AL
Unified Development Ordinance Greenville County, SC	Zoning & Land Development Regulations Update Charleston County, SC
Rural Zoning Districts Calhoun County, SC	Nonconformities and Amortization, Georgetown, SC



EDUCATION

Master of Public Administration
Appalachian State University
B.A. Environmental Studies
University of North Carolina
at Wilmington

PROFESSIONAL HISTORY

Planning Associate
White & Smith, LLC
(2016 - Present)
Principal Planner
Town of Mount Pleasant, SC
(2004 - 2016)

CERTIFICATIONS & MEMBERSHIPS

American Institute of
Certified Planners
American Planning Association
(National & SC Chapters)

E. TYSON SMITH ESQ., AICP

Partner | White & Smith Planning and Law Group

Tyson Smith has 28 years of experience as a city and county planner, planning consultant, and attorney, focused entirely on governmental relations and community planning.

After graduating from UNC-Chapel Hill in 1992, Tyson was a planner with the Monroe County Division of Growth Management in the Florida Keys. He later served as the Assistant City Planner for the City of Key West, Florida. Tyson's experience in these roles—both as a certified planner and attorney—has included zoning code programming, plan development, infrastructure planning & financing, growth management, land use and military compatibility, impact fees, public facilitation, mediation, legal defense, and public outreach.

Over the course of his career, Tyson has worked with Colorado jurisdictions on matters related to impacts fees, development standards, zoning codes, and fractional fee/short-term rentals. Tyson is a certified mediator and expert at public facilitation and mutual problem solving.

SELECTED EXPERIENCE

Comprehensive Plan and Land Use Code Update Wellington, CO	Land Development Strategies St. Petersburg, FL
Land Use Code Update Teton County, ID	Growth Management, Commercial Strategies, Land Use and Sign Code Amendments, Aspen, CO
Land Use Code Update Eagle, CO	Zoning Ordinance Revision Amarillo, TX
Rural Preservation and Transfer of Development Rights Prince George's County, MD	Targeted Zoning Code Amendments Kiawah Island, SC
Rural Preservation and Conservation Easements Weddington, NC	Targeted Zoning Code Amendments York County, SC
Smart Growth Management Strategy, Suffolk, VA	Nonconformities and Amortization, Georgetown, SC
Zoning Regulations Roanoke, VA	



EDUCATION

Juris Doctor
University of Florida

*Master of Urban &
Regional Planning*
University of Florida

Bachelor of Arts, Economics
University of North Carolina
at Chapel Hill

PROFESSIONAL HISTORY

Partner, White & Smith, LLC
(2005 - Present)

*Associate, Freilich, Leitner &
Carlisle* (2000-2005)

Assistant City Planner
City of Key West (1995-1997)

Planning Technician,
Monroe County, Florida
(1992-1993)

CERTIFICATIONS & MEMBERSHIPS

Florida Bar

South Carolina Bar

American Institute of
Certified Planners

Certified Family and Civil Court
Mediator (South Carolina)

American Planning Association
(National & SC Chapters)

Growth & Infrastructure
Consortium (past Chair)

SEAN SCOOPMIRE ESQ., AICP CANDIDATE

Planning and Law Associate

White & Smith Planning and Law Group

Sean Scoopmire is a planner and attorney who is excited to join White & Smith after completing his MCRP degree at Clemson in 2020. Sean brings the experience and skills he developed advocating for public and private sector clients, analyzing complex legal issues, and mediating disputes during a 20-year career practicing law to the planning process.

Sean lives in Greenville, South Carolina, and was introduced to planning through his service on the City's Arts in Public Places Commission, including four terms as chair. Through his work with White & Smith, his work with the City's Economic Development Department, his leadership in the City's public art program, and his planning education, Sean has experience leading public meetings, evaluating and developing ordinances that shape the built environment, planning for community and economic development, and working with diverse stakeholders and staff.

Sean believes that it is important to empower underserved communities through the planning process while recognizing that elected officials and professional staff seek accountability and results in the implementation of a community's vision.

SELECTED EXPERIENCE

Sign Code Update
City of Shawnee, KS

Zoning & Subdivision Codes Rewrite
York County, SC

Unified Development Ordinance
Greenville County, SC

Comprehensive Development Codes Revision
Mount Pleasant, SC

Zoning Ordinance Revision
Amarillo, TX

A Mixed Methods Approach to Public Art Planning
City of Greenville, SC

Downtown Area Planning
City of Greenville, SC

Community Development Planning
Town of Nichols, SC



EDUCATION

Juris Doctor
University of South Carolina
Master of City & Regional Planning
Clemson University
Bachelor of Arts, Economics
Davidson College

PROFESSIONAL HISTORY

Planning and Law Associate
White & Smith, LLC
(2020 - Present)
Intern, City of Greenville, SC
Economic Development
Department (2019-2020)
Of Counsel, Clarkson Walsh & Coulter, LLC (2002-2018)
Associate, McAngus Goudelock & Courie, LLC (1999-2002)

CERTIFICATIONS & MEMBERSHIPS

South Carolina Bar
Certified Civil Court Mediator
(South Carolina)
American Planning Association
American Institute of Certified Planners (Candidate)

RHYS WILSON

Planner | White & Smith Planning and Law Group

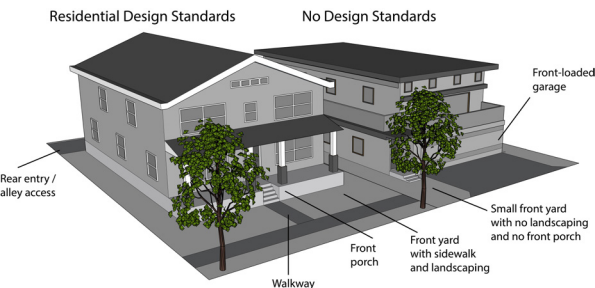
Rhys Wilson has experience in planning research, current development, urban design, community revitalization consultation, and public engagement techniques.

In his role as a local government planner, Rhys conducted plan review and served as the case manager for more than 175 development projects including site plans, façade plans, landscape plans, plats, rezonings, and specific use permits, and facilitated more than 98 development meetings. He interpreted and administered zoning and development regulations, including the McKinney Town Center Zoning District, a form-based code (FBC) for the city’s Historic Core.

Rhys brings strong graphics skills to the White & Smith team and significant experience engaging the public through various communicative and applied techniques.

SELECTED EXPERIENCE

Rural Zoning Districts Calhoun County, SC	Zoning Ordinance Rewrite Ada County, ID
On-Call Planning & Zoning Services Loudoun County, VA	Land Development Code Revision Teton County, ID
Development Codes Update Oklahoma City, OK	Zoning Ordinance Revision Amarillo, TX
Unified Development Code Diagnostic San Antonio, TX	Zoning Code Rewrite Wyandotte County- Kansas City, KS
Land Development Code Update Laredo, TX	Highway 100 Corridor Study West Allis, WI



Graphic from San Antonio UDC



EDUCATION

*Master of Regional and
City Planning*
University of Oklahoma,
Norman

Bachelor of Arts
Political Science and Geography
University of Oklahoma,
Norman

PROFESSIONAL HISTORY

Planner
White & Smith, LLC
(October 2019 - Present)

City Planner
City of McKinney, TX
(April 2018 - October 2019)

Senior Planning Technician
City of McKinney, TX
(August 2017 - October 2019)

Graduate Research Assistant
Institute for Quality
Communities
University of Oklahoma
(August 2015 - May 2017)

Data Analyst
Integra Realty Resources/JLL
Oklahoma City, OK
(May 2015 - December 2015)

JENNIFER GARDNER ASLA, PA

Associate Planner / Landscape Architect | Logan Simpson

Over the past 20 years, Jennifer has been dedicated to the planning and design of spaces small and large. Her tireless passion for connecting the natural and built environments has led to an extensive resume of planning and design projects spanning both public and private sector. Jennifer is experienced with planning and entitlement, land use code development, design guideline development, and comprehensive plans. Through years of entitlement work, she has gained much insight into the opportunities and challenges that small and rural communities face, and is dedicated to building the framework to help each community achieve their ultimate development goals.

Jennifer is currently working with the Town of Johnstown to update their comprehensive plan. Much has changed since the Town's last Comprehensive Area Plan was adopted in 2006. As one of the fastest growing municipalities in the Front Range, the Town of Johnstown has grown from approximately 8,900 residents in 2006 – to an estimated 18,000 in 2019. Prior developments within the Town were dominated by residential subdivisions near the Town's traditional core, but recent developments have been dominated by mixed-use, retail and employment projects in the Town's northwest. The updated Plan will anticipate and accommodate future growth within the Town's Growth Management Area while working to connect and harmonize the traditional and newer areas of the town. Jennifer will provide a bridge between the Comprehensive Plan and Code Update projects as well as in-person representation at Steering Committee meetings.

SELECTED COLORADO EXPERIENCE

Comprehensive Plan Update Johnstown, CO	Land Use Code Update Arvada, CO
Comprehensive Plan and Land Use Code Update Wellington, CO	Unified Development Code Assessment Englewood, CO
Landscape and Irrigation Standards Wellington, CO	Town Planner and Code Amendments Milliken, CO
Comprehensive Plan and Unified Development Code Update Woodland Park, CO	Zoning Code Update Loveland, CO
Westminster Forward Comprehensive Plan Update and Sustainability Code Review Westminster, CO	Land Use Development Code Update Pagosa Springs, CO
	Zoning and Subdivision Regulations Update Manitou Springs, CO



EDUCATION

Bachelor of Science,
Landscape Architecture
ASLA Student Merit Award
Colorado State University

CERTIFICATIONS & MEMBERSHIPS

Registered Landscape Architect
Colorado #714
Wyoming #LA-0136C
Colorado ASLA North Area
Director
CSU Alumni Advisory Board
for Landscape Architecture
Department
Member, American Society of
Landscape Architects

MELISSA RUTH

Planner | Logan Simpson

Melissa is a community planner with three years of experience in consulting. Melissa's experience is from both the public and the private sector, ranging from public participation and engagement to development application preparation and presentations to elected officials. She brings exceptional ability in land use code comprehension, and combines her community planning abilities with a passion for resource management, resulting in plans that consider natural environment preservation and protection. Melissa is a trained mediator through the Wyoming Department of Agriculture, and is skilled at public engagement and outreach development and facilitation.

Logan Simpson is currently working with the Town of Wellington, Colorado to update their Comprehensive Plan and their Land Use Code. As one of the project's planners, Melissa is conducting research, assisting with community engagement, and preparing documents. The Comprehensive Plan Update focuses on preserving the small-town atmosphere of the community, preserving the unique downtown character, and diversifying the economy of the Town. Some of the new concepts being contemplated for inclusion in the new code include updating application processes and subdivision standards, mixed use zone districts to provide a more sustainable approach to development of commercial areas, and design standards to preserve neighborhood character.

SELECTED EXPERIENCE

Comprehensive Plan Update Johnstown, CO	Zoning Ordinance Amendment Ada County, ID
Comprehensive Plan and Land Use Code Update Wellington, CO	Historic Preservation Interim Ordinance Ketchum, ID
Comprehensive Plan and Land Use Code Update Woodland Park, CO	Zoning Ordinance Update Natrona County, WY
Unified Development Code Assessment Englewood, CO	Land Use Code Update North Ogden, UT
Land Use and Development Code Update Pagosa Springs, CO	Land Use Code Update Teton County, ID
Zoning and Subdivision Regulations Update Manitou Springs, CO	Open Space and Outdoor Recreation Plan Estes Valley, CO
	South of the River Subarea Plan, Town Center Guidelines, and Commercial Code Star, ID



EDUCATION

*Master of Urban &
Regional Planning (in progress)*
University of Florida

*Bachelor of Arts,
Environmental Policy*
Western Washington University

PROFESSIONAL MEMBERSHIPS

American Planning Association
WYOPASS

KRISTY BRUCE MLA

GIS Specialist | Logan Simpson

Kristy is an environmental and community planner with a specialty in Geographic Information Systems (GIS). She is experienced in GIS analysis and cartography, and is responsible for many of the maps and spatial analysis for Logan Simpson's planning projects, corridor enhancement plans, and site designs. She creates maps and conducts spatial analysis for environmental impact statements, manages data, and generates geo-spatial models.

With experience in multiple comprehensive, transportation, and environmental plans, Kristy uses her multi-dimensional skillset to enhance products and processes in community and environmental planning and landscape design to synthesize geospatial data and demographics. She has also coordinated with water and sewer districts in Meridian and Driggs, ID and Larimer County, CO to help understand and ultimately model the extent of growth.

In addition to water and sewer, Kristy has supported numerous infrastructure projects by mapping and analyzing transmission lines, cell towers, oil and gas facilities, and broadband for a variety of environmental and community planning projects across Colorado. Her technical expertise is paired with community engagement practices; Kristy is adept at identifying targeted opportunities and communicating technical ideas to community members. She excels at bridging her experience with community and environmental planning to support multi-disciplined plans that support both natural and human health.

Kristy loves to work with communities to engage the public in conversations about where they live, work, and play to generate plans and options that support a positive future. Kristy will assist the management team with infrastructure and demographic modeling, and be available for engagement assistance and materials development.

SELECTED EXPERIENCE

Comprehensive Plan Update
Johnstown, CO

Comprehensive Plan and
Land Use Code Update
Wellington, CO

Comprehensive Plan Update,
Westminster, CO

Comprehensive Plan and
Land Use Code Update
Woodland Park, CO

Land Use Code Update
Teton County, ID

Comprehensive Plan
Castle Pines, Colorado

Commercial Centers Land Use
Evaluation and Code Language
Osceola County, FL

Mountain Vista Subarea Plan
Alternative Scenario
Fort Collins, CO



EDUCATION

*Geospatial Information Systems
Certificate*
University of Colorado

Master of Landscape Architecture
University of Colorado

*Bachelor of Environmental Design,
emphasis in planning*
University of Colorado

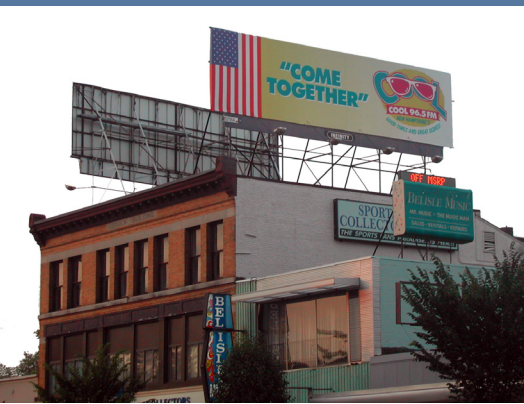
CERTIFICATIONS & MEMBERSHIPS

Geographic Information
Systems Professional (GISP)
Certification

Native Plant Master
Boulder County, 2010

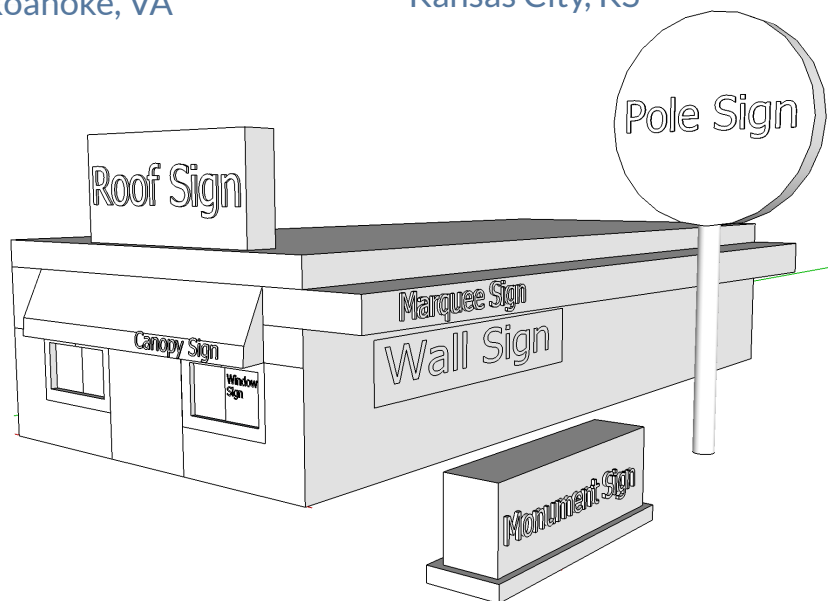
American Planning Association
WYOPASS

- ▼ White & Smith planners and
- ▼ attorneys have worked with more
- ▼ than two dozen communities on sign regulations, either as standalone projects or part of comprehensive development code updates.



▼ White & Smith, LLC sign code clients include:

- | | | |
|--|----------------------------|---|
| ▼ Aspen, CO | Overland Park, KS | Sparks, NV |
| ▼ Albuquerque, NM | Panama City Beach, FL | St. Petersburg, FL |
| ▼ Arlington, TX | Prince George's County, MD | Topeka, KS |
| Centennial, CO | Queen Creek, AZ | Unified Government of Wyandotte County- |
| Chapel Hill, NC | Roanoke, VA | Kansas City, KS |
| Concord / Cabarrus County, NC | | |
| Consolidated Government of Lafayette, LA | | |
| Fort Smith, AR | | |
| Galveston, TX | | |
| Irving, TX | | |
| Lee's Summit, MO | | |
| Memphis, TN | | |
| Nashua, NH | | |
| North Augusta, SC | | |
| Olathe, KS | | |



STATEMENT OF PROJECT METHODOLOGY & PERSPECTIVE

The narrative below describes the perspective we bring as a team of code drafting specialists, public engagement facilitators, and GIS/graphics technicians. Our perspective is based on three key factors:

First, at White & Smith, **code drafting is what we do**. Working on projects like the Johnstown Development Code Rewrite/Update is what our firm does every day. The experience builds on the roughly 30 years of experience Mark White & Tyson Smith each have, in addition to that of their staff.

Second, we have **worked with more than a dozen communities in Colorado on code assessments and updates**, as well as specialized projects in the areas of signs, affordable housing, fees-in-lieu, urban design, parks and recreation, and transportation.

Third, and perhaps most critical, our team was selected for the **development of the Johnstown Area Comprehensive Plan**, to be completed soon, which will provide the support and direction for the Town's Code Update.

Project Perspective

Over the past three years, White & Smith and Logan Simpson have worked together on 7 code updates in Western states, including the following 5 in Colorado:

1. Englewood
2. Wellington
3. Eagle
4. Manitou Springs
5. Pagosa Springs

In addition, we partnered with Logan Simpson on the original Request for Proposals for the Johnstown Comprehensive Plan update, and having been awarded that project, Logan Simpson will soon complete the planning process.



Logan Simpson is currently leading Westminster Forward, the comprehensive plan update for the City of Westminster, Colorado.

White & Smith is leading a concurrent process, Code Forward, to update the City's Municipal Code and Design Standards.

Having lead that effort, our Team has made several key observations about the current environment in Johnstown, which will have direct bearing on how we will conduct the Code Update. Here are a few:

1. Even as Johnstown prepares for its future, the Code Update should preserve and enhance its connection to its **“small town” character and farming traditions**.
2. The Update should advance the community’s desire to **increase connectivity among Town residents and between the Town and nearby communities** within the fabric of everyday life in Johnstown.
3. Growth within the **Growth Management Area** must be directed with deliberation, based on the work of the Comprehensive Plan, into areas capable of and appropriate for growth.
4. **Town trails** should be a focus of protection efforts within the updated Development Code.
5. **Flexible design** is important within the GMA as a means of protecting Town character, the rivers, trails, and other valuable and important geographical features in Johnstown.
6. The Codes must **balance small town feel and agricultural land uses**, with the possibility for higher intensity residential and commercial areas along appropriate corridors and in appropriate areas of Town.
7. **Economic and recreational opportunities**, widely leveraged along the Front Range, need to be facilitated through the Code Update.

Based on what was learned in the Comprehensive Plan process, we have developed a “Project Methodology” that reflects what was learned during plan development and that provides staff and the consulting team flexibility to complete the Codes Update in a manner that fits the project budget and needs as we go along.

Our Strengths

Multi-disciplinary, with certified planners, landscape architects, GIS specialists, and attorneys

Experience drafting zoning codes and unified development codes

Nationally recognized for innovative approaches to codes, such as composite zoning, form-based codes, and incentive zoning

Successful projects in Colorado and the region

A local presence that establishes familiarity and the ability to coordinate quickly and efficiently

Access to Colorado and national legal databases, research, and case law

Award-winning and nationally recognized codes

Codes Update Methodology for Johnstown

This section lays out our proposed plan to update key parts of the Town’s land development codes, including Chapter 15, Annexation; Chapter 16, Zoning; and Chapter 17, Subdivision. We are prepared to maintain the current code structure, if the Town wishes, but also to discuss whether a “unified development code” would increase user-friendliness and efficiency of the codes.

Our Project Methodology is in 4 stages with 7 tasks, which is subject to negotiation and revision at any point in the project—particularly for purposes of responding to PZC or Town Council concerns, but also in response to the pandemic.

Stage 1: Project Orientation

Task 1: Document Review

As soon as the Town issues a notice to proceed, we will update our library of background data and policy documents from the Comprehensive Plan effort to ensure we have current, relevant documents on-hand for review. Given our prior work in the region and our team members’ work in Johnstown, our team is ready to start on the Code Update.

Deliverable

 Review documents

Task 2: Kick-Off

During this Task, we will participate in orientation meetings with the Town’s project manager, Planning Department staff, PZC, and Town Council to discuss:

- » The project methodology, including the role of Planning staff and the consultant team;
- » Schedule of public outreach and deliverables; and
- » Phasing of key project milestones.

We can also participate in an introductory meeting with other Town boards or committees, including the Building BOA and Housing Authority, if this would be helpful as we start the project.

In an effort to remain efficient and to direct resources to core code revisions, if staff wishes to run or direct meetings during this project, we can appear virtually and can support staff in those efforts.

Deliverables

 Staff meetings and focus groups |  Refined project methodology + meeting notes

Stage 2: Assessment

Task 3: Issues Identification

After the Kick-Off, we will provide an Issues Identification memorandum to the Project Manager that summarizes the issues presented by Town officials and stakeholders during Task 2. The Town's project manager will provide comments on the Issues Identification Summary, and we will finalize the memorandum for dissemination and posting on the Town's project website, if desired.

In addition, our land use attorneys will identify any preliminary legal issues, including applicable federal, state, and local laws, that should be considered by staff and the Town Attorney at this phase or in later stages.

Deliverables:

-  Issues Identification Summary
-  Presentation Session in conjunction with Task 3 to confirm scope of issues

Task 4: Code Blueprint: Outline & Drafting Framework

After receiving staff comments on the Issues Identification memorandum, we will prepare a draft Code Outline and Drafting Framework for the updated Code sections.

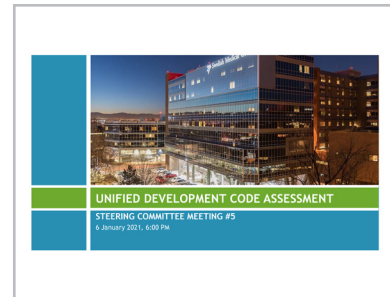
As noted, we will work with the Town to determine whether the current code structure should be kept or whether unified approach to the code—or a “UDC”—better suits staff and the development community.

The outline will integrate all aspects of current development regulations including annexation, zoning, subdivision regulations, flood protection, telecommunications, oil & gas standards, sign regulations, development standards, and regulations of individual uses such as junkyards and mobile homes.

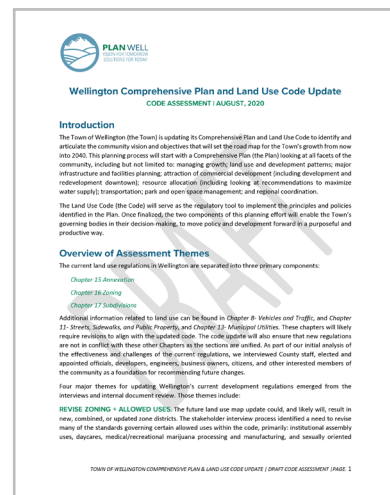
The Drafting Framework provides a more detailed protocol for the drafting effort, including headings and section numbering, so that we and the Town are able to work within a consistent format during the drafting process.

Deliverable:

-  Code Blueprint



Logan Simpson and White & Smith are working with the City of Englewood, Colorado on an assessment of the City's Unified Development Code.



White & Smith and Logan Simpson recently prepared a Code Assessment for Wellington, CO, as a first step in the Town's land use code update.

Stage 3: Preparation of Code Update

Task 5: Drafting

The drafting stage involves separate modules for the basic code elements: annexation, zoning, and subdivisions. Each module will address discrete subject matter areas, including oil and gas regulations, signage, telecommunications, flood controls, bulk standards, and site standards.

We anticipate that, for each module, we will hold public outreach sessions and “check-ins” with the Planning & Zoning Commission and Planning Department staff. We are also available to meet with the Town Council during the drafting process. The “check-in” sessions will include presentations with an opportunity for questions and answers.

While the Town Council is busy with many matters of the Town, it is usually important to brief the governing body intermittently during the Code Update to facilitate support for the approaches being developed and to receive feedback at key “decision points” in the process. This increases efficiency long-term and the likelihood the final work product represents a Town consensus when the adoption phase approaches.

Virtual Meetings

White & Smith Team members have successfully conducted virtual meetings since the start of the pandemic and, while necessary, are prepared to do so for the Development Code Rewrite/Update project.

We have developed strategies to ensure:

Online resources and meetings are easy to access

All public input is received and incorporated into the revised Development Code

Technology is maintained to the latest standards

Virtual presentations, when required, are run professionally and efficiently

Zoning Module

Here we will update the Town’s zoning districts with standards that implement the *Johnstown Area Comprehensive Plan* and other planning objectives. To do so we may:

- » Provide a brief and “to the point” General Provisions article that introduces the reader to the Codes related to land development and shows how to quickly find information the user needs.
- » Provide a table of district types and applicability.
- » Update the base districts, including Single-Family, Multi-Family, CBD, Neighborhood Commercial, Gateway, Agricultural, and holding districts.
- » Revise the Conditional Use Grant regulations and Planned Unit Development (PUD) districts, including -Village Center, -Mixed Use, and -Residential, as needed
- » Update use lists for the zoning regulations, including as appropriate, references to the APA Land-Based Classification Standards (LBCS) and North American Industrial Classification System (NAICS).
- » Create standards for specific uses that have unique impacts or special legal considerations, including oil and gas, telecommunications, and signs.

- » Revise dimensional and bulk standards.
- » Create key illustrations that clarify the meaning of code standards.
- » Provide supplemental regulations reflecting best practices, as needed.

This project could result in new districts, combined districts, and some districts removed and rezoned to a new or revised district category. We also may recommend a “legacy district” framework to better implement the Plan and address special districts and the need to perpetuate agricultural elements and themes in Johnstown.

Our Team includes GIS expertise and capabilities. We anticipate some level of GIS analysis will be useful in developing revised zoning standards—for example, in evaluating alternative distancing and setback policies—in addition to more straightforward zoning map revisions.

Subdivision Module

This establishes the basic standards for much of the new development in Johnstown. This includes:

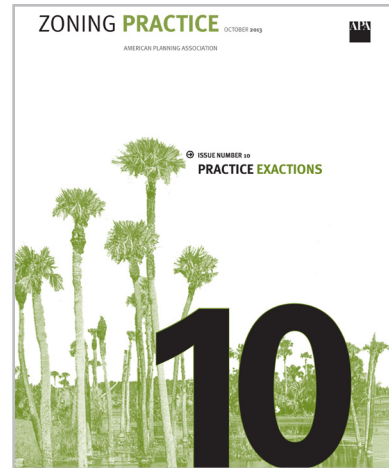
- » Revised standards for site layout, neighborhood transition, building design, and impacts.
- » Subdivision standards including lot and block layout, environmental protection and sensitive areas, flood zone protection, and park design and dedication.
- » Triggers for the analysis of water, wastewater, traffic, drainage, noise, wildlife habitat, and floodplain issues.
- » Provisions to enforce the subdivision and plat standards.

Annexation and Procedures Module

Finally, based on the initial two modules, we will complete revisions related to annexation and overall procedures. Much of this work will have been a necessary component of the prior modules addressing zoning and subdivision. Nonetheless, we find it beneficial to take up procedures as a final discrete step in the drafting process.

Here we will:

- » Finalize the overall processes for annexation, subdivision and zoning approvals.
- » Create a common workflow for each entitlement and process.



Tyson Smith's article "What Koontz v. St. Johns River Water Management District means for Planners...for Now" appeared in the October 2013 issue of Zoning Practice, published by the American Planning Association.

- » Divide the processes into individual sections by permit type or create a “unified” procedural and submittal requirements section.
- » Address mechanisms for flexibility and relief, such as appeals and variances.
- » Establish, describe, and set the authority for each review and decision-making body.
- » Address nonconforming status of existing and new structures and uses.

Definitions Module

We will build a unified definitions section as we proceed through the drafting process. This module includes the final list of definitions.

Drafting Process

We will work closely with staff as we move through the drafting process—not just at the end of each module. This is to ensure we fully capture the staff’s and Town’s direction and also to help staff and the Town manage the amount of review as it goes through the process.

Initial drafts will be provided for staff review, including a worksheet we provide to assist the Town Project Manager in consolidating staff’s comments for revision. We will then provide a second set of drafts that reflects Town and public comments, if applicable, and that can be taken to the adoption process, usually with minor revisions.

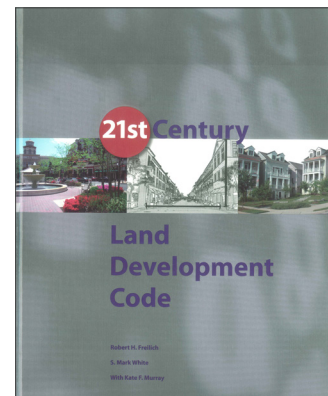
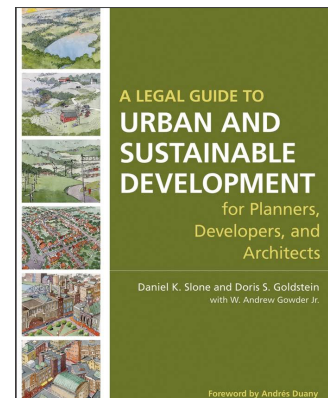
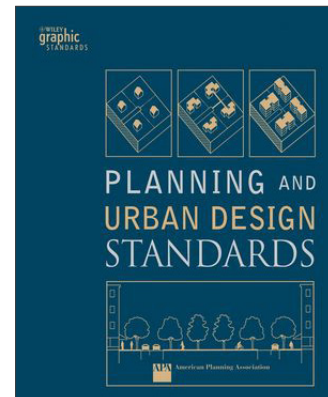
We will prepare a spreadsheet tool for documenting revisions to the UDO, by current and new section numbers and use the spreadsheet as a basis to revise successive drafts of the UDO.

Team member attorneys will be involved in all drafts will respond to legal issues as they arise, in consultation with the Town’s contract attorney.

Deliverables:

 Draft Code Modules

 Public outreach + check-in sessions



*Principal-in-Charge
Mark White is co-author
and contributor to several
recent national publications
on new urbanism,
sustainability, and zoning
and development codes.*

Task 6: Final Code Drafts & Zoning Map

We will prepare one initial version of each of the draft code modules discussed in Task 5. Johnstown's project manager will review each draft and provide a uniform set of comments on the draft, after which our team will finalize the drafts for public distribution.

When the drafts are distributed to the public, we anticipate providing a deadline for responses to keep project momentum and to meet the desired timeframes. While we are flexible as to timeline, we understand the Town may not be and will therefore take certain steps to keep the project moving forward, based on our experiences with staffs and boards over the last 30 years of our code drafting.

Deliverable:

 Final Code Review Modules

Stage 4: Adoption

Task 7: Adoption—Final Products

By this time, key stakeholders and the general public have bought into the new draft, and the Planning & Zoning Commission and Town Council have been informed of our progress along the way.

We will prepare a public hearing draft of the new Codes at this point for final consideration.

After completion of the final draft, the consultant team will attend the public hearings for adoption by the Planning & Zoning Commission and Town Council, as requested.

Deliverables:

 Revised Final Code Modules

 Attend adoption hearings

Deliverables for Tasks 1 - 7:

- » Document review
- » Staff meetings and focus groups
- » Refined project methodology
- » Meeting notes
- » Issues Identification Summary
- » Code Blueprint
- » Presentations
- » Draft Code Modules
- » Public outreach + check-in sessions
- » Final Code Review Modules
- » Revised Final Code Modules
- » Attend adoption hearings

PROPOSED TIMELINE

Given the scope of changes the Town anticipates, and our experience in similar jurisdictions, the 9-month timeframe set out in the RFP may be optimistic. However, we are prepared to meet this timeframe and encourage Town staff, the PZC, and Council to anticipate dedicating time for review and comment over that timeframe.

Our Project Schedule includes an estimated 11 meetings with staff, stakeholders, the PZC, and Town Council. However, if selected, we will work with Town staff prior to kick-off and throughout to ensure a robust and effective outreach effort. Logan Simpson’s recent work there and increased use of virtual meetings give us some flexibility to accommodate additional meetings as needed.

Month	1	2	3	4	5	6	7	8	9
Stage/Task									
1 Project Orientation									
1 Document Review									
2 Kick-Off									
2 Assessment									
3 Issues Identification									
4 Code Blueprint: Outline & Drafting Framework									
3 Preparation of Code Update									
5 Drafting									
6 Final Code Drafts & Zoning Map									
4 Adoption									
7 Adoption - Final Products									
Meetings and Presentations									
Planning & Zoning Commission Presentation(s) (4 assumed)									
Town Council Presentation(s) (4 assumed)									
Miscellaneous (2 additional assumed)									

COST ESTIMATE

Our estimated fees for each task are provided below. Total fees are estimated to be roughly \$152,670, including meetings and project expenses. However, these estimates may well be adjusted after discussions with staff and clarification of the role we versus staff will play. Following some discussion, we will be able to confirm with you that the budget matches your expectations.

Stage/Task		Fees
Stage 1 Project Orientation		
1	Document Review	\$2,180
2	Kick-Off	\$10,200
	<i>Subtotal</i>	\$12,380
Stage 2 Assessment		
3	Issues Identification	\$6,930
4	Code Blueprint: Outline & Drafting Framework	\$5,310
	<i>Subtotal</i>	\$12,240
Stage 3 Preparation of Code Update		
5	Drafting	\$71,280
6	Final Code Drafts & Zoning Map	\$17,340
	<i>Subtotal</i>	\$88,620
Stage 4 Adoption		
7	Adoption - Final Products	\$7,730
	<i>Subtotal</i>	\$7,730
Meetings & Presentations		
	Planning & Zoning Commission Presentation(s) (4 assumed)	\$13,640
	Town Council Presentation(s) (4 assumed)	\$12,040
	Miscellaneous Presentation(s) (2 additional assumed)	\$6,020
	<i>Subtotal</i>	\$31,700
	Total Fees	\$152,670

REFERENCES FOR SIMILAR WORK

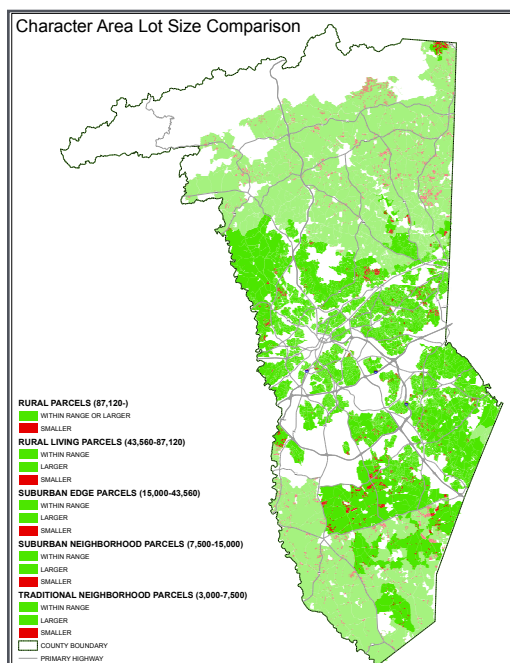
The White & Smith Team has an excellent combination of national, statewide, and local experience, and offers principal personnel who are highly experienced and qualified to address Johnstown's Development Code Rewrite/Update.

We have the credentials and technical competence required to successfully analyze the existing development code, including its closeness of fit with the *Jamestown Area Comprehensive Plan* policies and directions, state and federal laws, and case law, as well as best practices and industry standards.

White & Smith, LLC is pleased to provide the following four client references for projects similar to Johnstown's Development Code Rewrite/Update.

In this section, we also present a selection of our team's work in Colorado and on similar projects in other states. Many of these areas are struggling with growth challenges similar to what Johnstown is experiencing, such as insufficient water demand, the balance of growth pressures and the agricultural community, and a short supply of mixed-use and multi-family housing to support a new generation of industrial, commercial, and retail employees.

The project descriptions include links to work products or project websites where available.



White & Smith currently is leading a consultant team in the development of a Unified Development Ordinance for Greenville County, SC.

We are currently working with staff on a GIS analysis to determine how to implement the County's Future Land Use Map (FLUM).

The FLUM identifies character areas and place types, such as rural living and suburban edge, and the comp plan specifically describes density, lot sizes, and land uses associated with each of the FLUM designations.

We worked with staff to develop three alternatives for implementing the FLUM and select an alternative, and now are using GIS to analyze where existing lot sizes and zoning are consistent or inconsistent with the map.

Client References



Client: Loudoun County, Virginia

Project: **Route 28 Zoning Update** Loudoun County retained White & Smith, LLC, along with the National Center for Smart Growth and WSP, to prepare a set of design-based zoning regulations for the 7-mile corridor north of Dulles International Airport.

Reference: Miguel Salinas | Assistant Planning Officer | Talbot County, MD (former Program Manager, Community Information & Outreach Loudoun County Department of Planning) (410) 770-8030 | msalinas@talbotcountymd.gov

Client: Lafayette Consolidated Government, Louisiana

Project: **Unified Development Code** White & Smith, LLC consolidated Parish-wide zoning and subdivision regulations into a single Unified Development Code (UDC). The UDC was unanimously recommended for approval by the Planning and Zoning Commission, and adopted in May 2015. Mark White conducted staff and elected and appointed officials training on the new UDC prior to its effective date in December 2015.

Reference: Carlee Alm-LeBar | former Development & Planning Director Lafayette Consolidated Government (337) 216-6513 | carlee@rrcoa.com

Client: City of Olathe, Kansas

Project: **Unified Development Code Revision** White & Smith, LLC led a team of consultants that revised the City's Unified Development Ordinance (UDO) and Design Guidelines. These documents implemented the City's Comprehensive Plan (PlanOlathe). The revised UDO-Design Guidelines created new standards and districts for mixed use centers, transit-oriented development (TOD), infill/redevelopment, and conservation subdivisions.

Website: <https://olathe.municipal.codes/UDO>

Reference: David Clements | Planning & Building Director | City of Belton, MO (former Planning Director | City of Olathe) (816) 331-4331 | dclements@belton.org

Client: City of Sparks, Nevada

Project: **Zoning Regulations Update** White & Smith, LLC led a team consisting of Winter & Company and CFA Reno to update the City's zoning regulations. We took the lead on code drafting and facilitated presentations to the Planning Commission and City Council. The new Zoning Code was adopted unanimously in August 2015.

Code: <https://cityofsparks.us/wp-content/uploads/2017/02/spc-2015-agenda-06-18-zone-code.pdf>

Reference: Jim Rundle | Planning Manager | City of Sparks (775) 353-7827 | jrundle@cityofsparks.us

Aspen, Colorado

Growth Management, Commercial Strategies, Land Use & Sign Code Amendments, Affordable Housing Fee-in-Lieu Analysis

White & Smith, LLC has a long relationship with the City of Aspen, beginning in 2006 and continuing today.

In 2006-2007, Mark White assisted City staff with amendments relating to growth management, affordable housing, and commercial design.

In 2008-2009, Mark developed approaches for the City to retain locally serving and character-based businesses, along with comments related to the City's housing impact fee calculations.

In 2016, Mark led a team of consultants on a variety of amendments to the City's Land Use Code (adopted in January 2017). These included:

- » Land use mix, including a use mix and design that promotes locally serving businesses by reserving space for second tier businesses;
- » Updated commercial design standards;
- » Comprehensive parking and transportation design that includes a "soft" parking maximum;
- » Updated view plane regulations; and
- » Updated housing mitigation requirements.

In 2017, Mark updated the City's sign regulations to reflect the content neutrality principles of the United States Supreme Court decision of *Reed v. Town of Gilbert*. The City adopted the revised sign code in August 2017.

In 2019, the City hired White & Smith to conduct an Affordable Housing Fee-in-Lieu Analysis. Tyson Smith is serving as the project manager, and the firm is teamed with public sector fiscal and economic experts at TischlerBise, Inc. The project includes assessment of the City's current fee-in-lieu program and development of recommended program revisions.

Firm: White & Smith, LLC

Dates: 2006-2007, 2008-2009, 2016-2017, 2017, 2019-present

Population: 6,658 | **Land Area:** 3.88 mi²

Contact:

Ben Anderson, AICP | Principal Long Range Planner
City of Aspen Community Development Department
(970) 429-2765 | ben.anderson@cityofaspen.com



Adams County, Colorado

Analysis of Landscaping and Sign Regulations, Public Finance, Inclusionary Zoning, and Agricultural Uses

White & Smith, LLC worked with TischlerBise and Felsburg, Holt & Ullevig to review Adams County's landscaping regulations, update regional traffic impact fees, and conduct a review of current regulations to identify and recommend changes to any conflicts in various sections of the development regulations and/or with State and Federal regulations.

Mark White prepared several legal memorandums addressing issues identified by County staff. The memorandums addressed diverse planning issues including agricultural uses, dedication issues, inclusionary zoning & affordable housing, and revolving loan funds.

Kelly Cousino prepared a technical memorandum pertaining to the Adams County landscaping regulations. The memorandum included a review of landscaping regulations in three peer counties in Colorado and a comparison of those regulations to Adams County. Kelly then analyzed the relationship of the current landscaping regulations to Adams County's long-range plans and planning policies. The technical memorandum outlined recommended technical, administrative, and formatting changes. An annotated outline proposed a reorganization of the landscaping regulations.

Firm: White & Smith, LLC

Dates: 2017 - 2018

Population: 441,603 | **Land Area:** 1,184 mi²

Contact:

Dr. Nana K. Appiah, AICP
Planning Director/Zoning Administrator
City of Mesa, AZ
(480) 644-2181 | nana.appiah@mesaaz.gov



Sparks, Nevada

Zoning Code Update

Mark White led a team consisting of Winter & Company and CFA Reno to update the City's zoning regulations. We took the lead on code drafting and facilitated presentations to the Planning Commission and City Council. The new Zoning Code was unanimously adopted in August 2015.

The Sparks Zoning Code provides an excellent example of streamlined development processes, a streamlined yet comprehensive list of permitted uses, and integrated zoning graphics. We also streamlined the City's aspirational mixed use and transit oriented development policies to become relevant and usable in a suburban setting.

The Zoning Code—

- » updates and streamlines the zoning districts, including the zoning districts;
- » consolidates and streamlines the development procedures, including new process flow charts;
- » incorporates graphics and user-friendly language;
- » consolidates the City's design guidelines and manuals into a single document; and
- » adds state of the art standards for accessory buildings, urban agriculture, telecommunications, and other facilities.

Firm: White & Smith, LLC

Dates: 2013 - 2015

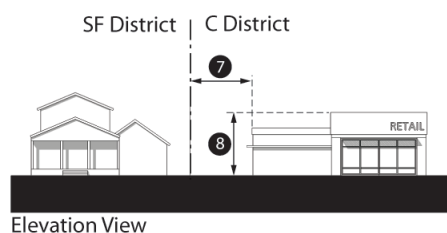
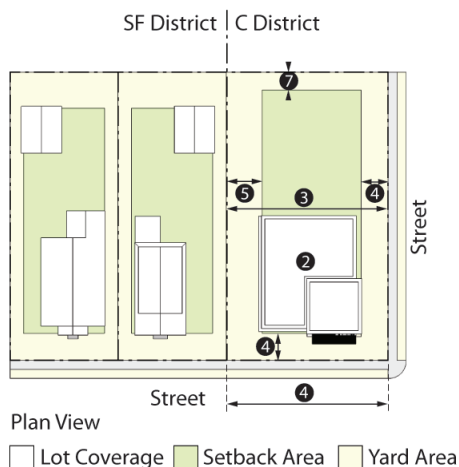
Population: 90,264 | **Land Area:** 35.9 mi²

Document Reference:

<https://cityofsparks.us/wp-content/uploads/2017/02/spc-2015-agenda-06-18-zone-code.pdf>

Contact:

Jim Rundle | Planning Manager | City of Sparks
(775) 353-7827 | jrundle@cityofsparks.us



Source: Winter & Company

Lafayette, Louisiana

Unified Development Code

White & Smith, LLC consolidated Parish-wide zoning and subdivision regulations into a single Unified Development Code (UDC). The UDC was unanimously recommended for approval by the Planning and Zoning Commission, and adopted in May 2015. Mark conducted staff and elected and appointed officials training on the new UDC prior to its effective date in December 2015.

The new UDC:

- » Consolidates and reduces the zoning districts.
- » Introduces smart growth and form-based design principles, including new mixed use districts, a downtown form-based code, and parking reductions.
- » Consolidates the zoning and subdivision processes for both the City and the unincorporated Parish.
- » Brings the list of permitted uses up to date.
- » Creates incentives for agricultural preservation and conservation.

Wallace Roberts & Todd, LLC led the overall project, with its efforts primarily focused on development of the Comprehensive Plan (*PlanLafayette*) in the first phase. Mark's efforts were focused on the latter phases of the project, where he led the implementation of the newly adopted plan through the UDC. The project was completed on time and within budget.

"Mark and his team provided exceptional service and technical guidance in developing a modern and practical UDC for our community. Mark was always responsive and helpful in providing advice and policy recommendations throughout the entire process."

I recommend strong consideration of White & Smith for consulting services in local government planning and code development."

Carlee Alm-LeBar
former Development & Planning Director
Lafayette Consolidated Government

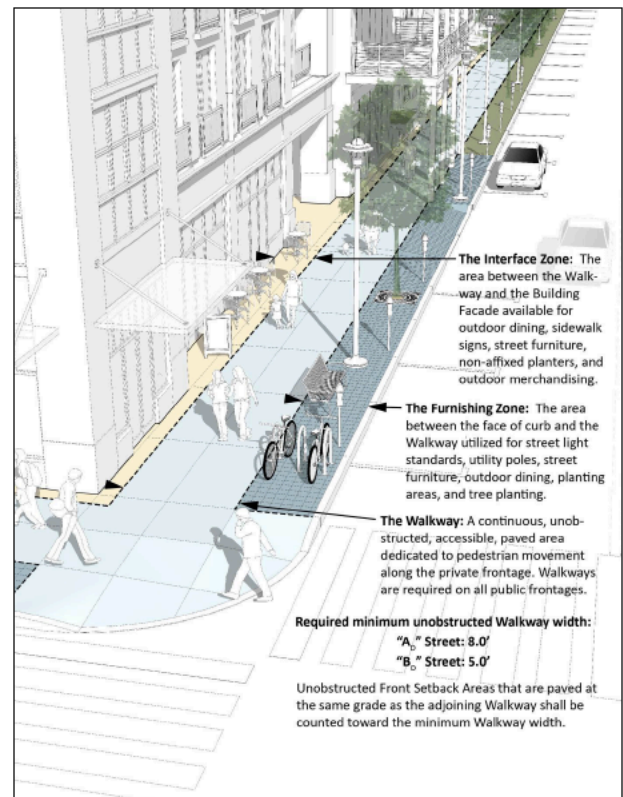
Firm: White & Smith, LLC

Dates: 2013 - 2015

Population: 120,623 | **Land Area:** 53.91 mi²

Contact:

Carlee Alm-LeBar (former Development & Planning Director, Lafayette Consolidated Government)
(337) 216-6513 | carlee@rrcoa.com



The Lafayette UDC includes the Downtown Code developed by their Downtown Development Agency and streamlined based on contributions from White & Smith, LLC. The code won the 2019 Driehaus Form-Based Codes Award (<https://formbasedcodes.org/articles/2019-richard-h-driehaus-form-based-codes-award/>).

Rio Blanco County, Colorado

Land Use Resolution Revisions

White & Smith, LLC was part of a team that revised Rio Blanco County's Land Use Resolution (LUR). The project was initiated as an internal County project and several articles of the LUR were revised in 2011 & 2012. Then, in 2014, Rio Blanco County hired the consultant team to complete the LUR update.

Orion Planning Group and White & Smith, LLC rewrote LUR Articles to update language, improve organization, increase clarity and language precision, remove redundancies, address requirements of state and case law, and clarify how discretionary decisions are made. The Team also evaluated and updated design and development standards to recognize the variety of development contexts in Rio Blanco County.

Firm: White & Smith, LLC

Dates: 2014 - 2016

Population: 6,666 | **Land Area:** 3,223 mi²

Contact:

Rio Blanco Planning Department
(970) 878-9510



Wellington, Colorado

Comprehensive Plan & Land Use Code Update

Logan Simpson is currently working with the Town of Wellington, Colorado to update their Comprehensive Plan and their Land Use Code. The Comprehensive Plan Update focuses on preserving the small-town atmosphere of the community, preserving the unique downtown character, and diversifying the economy of the Town.

Some of the new concepts being contemplated for inclusion in the new code include updating application processes and subdivision standards, mixed use zone districts to provide a more sustainable approach to development of commercial areas, and design standards to preserve neighborhood character.

Firm: Logan Simpson

Website: <http://www.townofwellington.com/451/Comprehensive-Plan-Land-Use-Code-Update>

Contact:

Cody Bird | Town Planner | Town of Wellington
birdca@wellingtoncolorado.gov
(970) 568-3554



ELEVATE EAGLE COMPREHENSIVE PLAN AND LAND USE AND DEVELOPMENT CODE, COLORADO

The Town of Eagle is located approximately 200 miles west of Denver in Eagle County. The town has a population of approximately 6,500 people (Census 2010) and is currently experiencing high growth pressures.

Influenced by Western Slope ranching, federal lands, and two world-class ski resorts (Vail and Beaver Creek), the town has a mix of rich historical agriculture and new recreation economies that influence the growth and development of the community. Although the last plan was adopted just eight years ago, demographic and geographic shifts in the town have spurred many questions about the town's future growth, disaster preparedness, transportation, housing, and resource management. While Eagle has adequate land to satisfy the high demand for growth, the need to protect neighborhoods, green space, and natural assets constrains the Town's growth area and requires careful thought about how the community wants to take advantage of each opportunity for change.

The comprehensive plan update, Elevate Eagle, is being updated in conjunction with the town's Development Code. Adopted in 1976, a full overhaul will be necessary to align the Development Code with Elevate Eagle, as well as to address a number of issues including downtown parking management, low-water landscape standards, lighting, a process perceived as onerous and outdated, and inconsistency in interpretation. White & Smith are assisting with development of the draft code language and providing legal review for compliance with state statutes and case law.

Firm: Logan Simpson

Document Reference: https://www.townofeagle.org/DocumentCenter/View/16477/Elevate-Eagle-Comprehensive-Plan_with-Appendix_reduced

Contact:
Brandy Reitter | Town Manager | Town of Eagle
brandy.reitter@townofeagle.org | (970) 328-9628



US287 STRATEGIC PLAN, CREATE LOVELAND COMPREHENSIVE PLAN, AND ZONING CODE UPDATE, LOVELAND, COLORADO

Loveland is a community seeking to leverage their artistic identity, address growing challenges with changing demographics, and proactively manage growth and regional coordination. Beginning in 2013, Logan Simpson's team worked with the City to develop the **US 287 Strategic Plan** for this regional highway in a sustainable manner, also the predominant north/south route through the City. The plan provides both policy and physical improvement recommendations, with a focus on the revitalization and improved economic vitality of the corridor over the next 20 years. Key objectives of the plan included creation of a positive, welcoming image along the corridor and at gateways; generation of private investment; redevelopment of deteriorated areas; generation of jobs and new tax revenue; and improvement of public infrastructure.

Partway through the US287 strategic planning process, Logan Simpson began working with the City on the comprehensive plan update. Logan Simpson's approach to **Create Loveland** included a focus on the redevelopment of downtown and key commercial corridors; resiliency in all its economic, fiscal, neighborhood and environmental dimensions; and greater integration of land use, transportation, and healthy lifestyles. The plan used broad community input to articulate the shared values and vision of Loveland's citizens. A set of performance indicators, prepared in partnership with our subconsultant team, support the plan by showing historic trends, a future trajectory, and ways to assess Loveland's progress in achieving that vision. Create Loveland was awarded a 2017 Merit Award from APA Colorado—more than just aggressive monitoring, this plan lays the foundation for the immediate update of the municipal code as well as prepositioning to apply for HUD resiliency funding.

Most recently, Logan Simpson joined an attorney-led team to complete the City's **Zoning Code Update**. Specific attention was given to

developing new zoning code language and standards to reflect the Comprehensive Plan's vision for new Complete Neighborhoods and Enhanced Corridors. This involved creating a series of graphics that illustrate different building types within a housing palette, building massing concepts for the downtown area, and new infill, corridor, and neighborhood development standards. This cohesive graphic language complements the updated code, ensuring a more user-friendly and functional document. The Complete Neighborhoods concept was worked into the code as an optional alternative land use designation to encourage a more sustainable approach to neighborhood design by bringing everyday services closer to home to reduce number of automobile trips and increase walkability. A complete neighborhood includes a fine grained mix of housing types, densities, and neighborhood scale commercial and civic uses arranged in a pattern that supports pedestrian and bicycle transportation ultimately integrating commercial and employment uses with housing.

Firm: Logan Simpson

Contact:

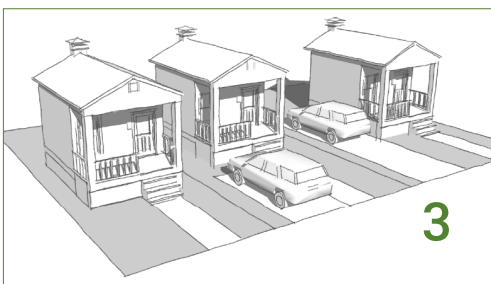
Alan Krcmarik, Executive Economic Advisor
City of Loveland
(970) 962-2625 | alan.krcmarik@cityofloveland.org



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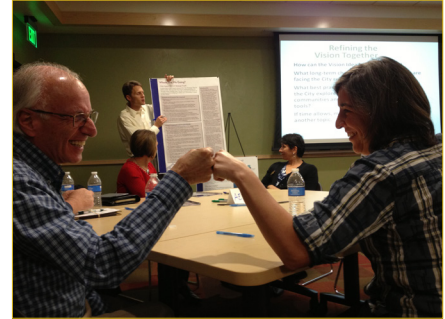


4



5

1,2) Artist's renderings depict general concepts for future development and redevelopment 3-5) These three graphics support Loveland's policies for implementation through the code update, and include a Housing Palette, the Downtown Redevelopment Area, and Complete Neighborhoods, which incorporates sustainability elements through a mix of housing types, parks, and retail in a walkable setting.



The multi-pronged community engagement strategy aimed to continually reach and unify this diverse first-tier suburb of Denver through an interactive website, keynote speaker events discussing big issues and opportunities, multimedia event coverage, mailed newsletters to all residents, advisory board summits, and engagement of youth in the planning process.

ARVADA COMPREHENSIVE AND TRANSPORTATION PLAN, LAND USE CODE UPDATE, AND TRAFFIC DIVISION STANDARDS, COLORADO

In 2013, Logan Simpson managed the consultant team to update the City of Arvada's comprehensive plan. The City was experiencing many changes with the opening of a new commuter rail line, a new regional parkway, large-scale new developments and a renaissance in its Olde Town. Arvada's aging population, older neighborhoods, and declining retail environment, presented challenges requiring economic development strategies focused on building home-grown businesses, developing in brown-field or infill areas, revitalizing blighted areas through active urban renewal authority, and maintaining an aging infrastructure.

The overall policy reform focuses on sustainability and active living. In an additional segment of the study, Logan Simpson integrated land use and transportation planning for four new TOD Stations, a regional parkway, and a new creative district along Wadsworth Boulevard with transit options addressing the expanding Arvada Center. This creative arts district looks to strengthen the connection between the historic downtown and the regionally significant Arvada Center, by considering retail redevelopment, placemaking, supporting transit, and the need for building space and housing appropriate to artists and creative industries. The plan was unanimously adopted by City Council in December 2014.

Following adoption of the comprehensive plan in 2014, Logan Simpson has been working with an attorney-led team on the two year project of updating the land development code to both comply with the new comprehensive plan policies and develop new regulation to address mixed use and infill development as well as emerging trends in sustainability and transportation including ride share, scooter share, and Uber/Lyft.

More recently, Logan Simpson joined a team of transportation engineers to assist in development of a transportation manual. Our team is currently reviewing the existing code for any language related to traffic and transportation planning and populating a matrix to help determine redundancy, inconsistency, and/or missing regulations. This information will be used to determine what needs to belong in the new transportation manual and what updates need to be made to the land development code to correlate. Recommendations to code language updates will be made as a final deliverable to the project.

Firm: Logan Simpson

Contact:

Carol Ibanez, AICP | Senior Planner
City of Arvada
(720) 898-7463 | cibanez@arvada.org

MILLCREEK TOGETHER GENERAL PLAN AND DEVELOPMENT CODE, UTAH

Logan Simpson is leading the project to develop a General Plan and recommend ordinance changes for the City of Millcreek, incorporated in 2016. This will be the first General Plan for the City, and the project is of great interest throughout the community.

Millcreek is unique in Utah in that it encompasses a broad diversity of demographics, ethnicities, and economic conditions, and the City leaders are committed to developing a plan that is both individualized to the needs and circumstances of all its residents, and unifies and brands the new City as a great place to live and invest.

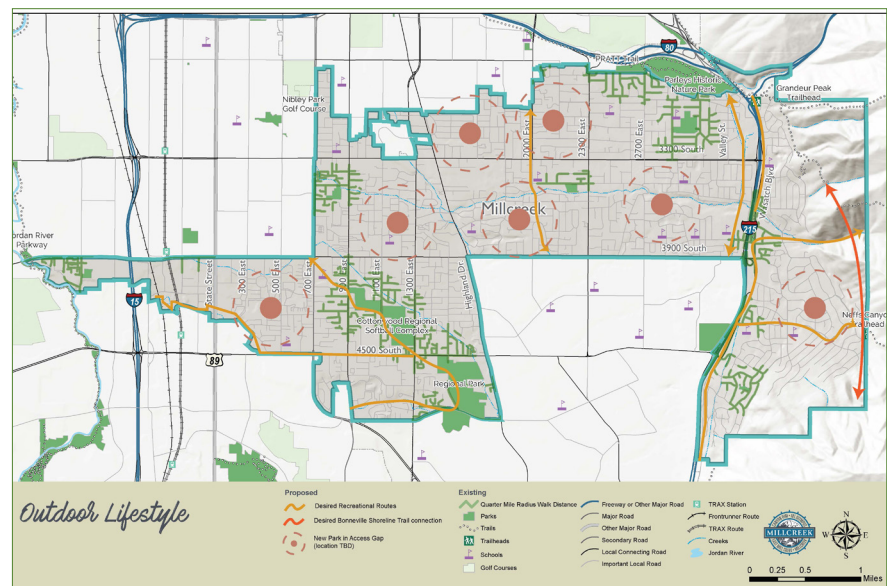
Hallmarks of the project include a neighborhood-by-neighborhood outreach and education public engagement program, and identification and design of a town center overlay zone and a Main Street overlay zone.

As we move forward with developing the code, Logan Simpson will recommend amendments to the Salt Lake County land use regulations that were adopted by the City at incorporation and tailor them to meet the City's objectives.

Firm: Logan Simpson

Contact:

Francis Lilly, AICP
Planning Director
Millcreek Planning Services
(801) 214-2752
flilly@millcreek.utah.gov



WHITE &
SMITH, LLC
PLANNING AND
LAW GROUP



L O G A N S I M P S O N

Wilson Williams LLP

Nina P. Williams

February 19, 2021

Kim Meyer
 Director of Planning and Development
 Town of Johnstown
 planning@townofjohnstown.com
 kmeyer@townofjohnstown.com

**Re: Proposal for Development Code Re-Write and Update
Town of Johnstown**

Dear Director Meyer,

My name is Nina P. Williams, and I am pleased to have the opportunity to respond to the Town of Johnstown (“Town”) Request for Proposals (“RFP”) for services the Town’s Development Code Re-Write / Update.

I am a municipal attorney with a passion and track record for assisting various small communities with practical, accessible solutions to legal issues and obstacles. Having spent the last fifteen years specializing in land use and zoning, I am extremely interested in the project to revise your Town’s Development Code.

If awarded the opportunity, I plan to be the project lead and primary professional working on this matter. Geoff Wilson would assist with his vast experience with municipal authority regarding oil and gas, and we will have the general resources of our law firm available at our disposal. Our firm also contracts with a professional planner to assist with technical deliverables such mapping, graphics and design standards. As noted in more detail in the Work Plan below, I anticipate working with, and relying on contribution from, the Town Planning Department during portions of the project, including Code analysis, organization and drafting, if the Town agrees with this approach.

Statement of project methodology and perspective

The project methodology extends far beyond resolving and simplifying inconsistencies and outdated or superfluous regulations within the Town Development Code, although that is an important foundation. Our project perspective will be focused on Johnstown unique needs and recent exponential growth, which will likely be discussed within the Town’s imminent Comprehensive Plan, and will be identified by our team and City staff through various forms of community engagement and participation.

Our approach is consistent anytime we are hired by a municipality: We work alongside the client, as a member of their team, helping them to achieve their objectives. We never pretend to

know more about what a community needs than its own constituency. There are no cookie cutter, copy and paste, or generic answers, but knowledge of various options, state law, and due process procedural concerns is necessary. Our vast and diverse experience allows us to offer creative, adaptable solutions, and ensure a final work product is legally consistent, and meets the Town's goals. Public engagement and guiding the compromise of multiple viewpoints in a practical, effective manner is my specialty. We have also used the last twelve months to grow that experience, determining what remote and virtual approaches work best, when in-person participation is not preferred.

Your Town's development needs and planning goals are unique to Johnstown. However, we believe our experience, skills and methodology obtained through analyzing, advising on, revising and drafting land use and development codes will be a great asset to this project. For example, Nina specializes in ensuring fairness and due process is preserved in quasi-judicial hearings, and advising planning staff on administrative and public processes. Therefore, she will insure those requested updates are made to your Town Code. Additionally, our experience assisting small towns with downtown business economic overlay districts, small cell regulations, sign codes, PUDs, housing development, and development incentives will benefit the Town's implementation of this project.

Qualifications

Effective March 1, 2020, Respondent Nina Williams is a partner is with the law firm Wilson Williams LLP. She previously served as Special Counsel at the municipal law firm Murray Dahl Beery & Renaud LLP. For the last fifteen years, Nina has practiced in local government and zoning law, dealing with all aspects of land use, development, legislation, personnel and government operations. She specializes in land use code diagnosis, analysis, revision and drafting to implement planning goals.

Nina Williams currently serves as designated Town and City Attorney for numerous Colorado municipalities, as well as special counsel to other towns and cities, on zoning and planning matters, as needed, including the City of Woodland Park Board of Adjustment. Nina was also recently hired in the Town of Green Mountain Falls to assist with their Land Use Code re-write.

Nina Williams assists town and city managers, administrators, planners, community developers and clerks on a daily basis. In addition to city councils and town boards, Nina advises numerous planning commissions, boards of adjustment, zoning boards of appeals and variance boards. Nina has analyzed, drafted and re-wrote significant portions of the land use and zoning codes for the varied and diverse municipalities of: Fort Morgan, Salida, Idaho Springs, Nederland and Monument, as well as numerous villages in suburban New York. Nina is currently in the middle of the City of Salida's two year comprehensive Land Use Code re-write; assisting and advising City planning staff, planning commission and community land use code advisory committee at each stage of the process managed by Clarion Associates. Nina is also currently in the process of exclusively managing, conducting, advising and drafting the in-house, complete overhaul of the City of Fort Morgan's Development and Zoning Code.

Nina began her legal career representing applicants and large developers in all phases of the planning and development process, including in front of governing boards, planning commissions and zoning boards. We feel that professional background will benefit Johnstown, given its recent growth and development

Nina currently teaches an annual graduate course at the University of Colorado Denver, for the New Directions in Politics and Public Policy program, entitled “Planning and Development: Zoning, Local Government and Affordable Housing.” She is also a proud co-founder of the Rising Municipal Attorneys, a networking group of over 125 lawyers throughout the state.

Nina is a frequent speaker on land use and local government issues, including at the Department of Labor planning commissioners training, the Municipal Clerk’s Institute, the Colorado Bar Association Government Counsel section and the Colorado Municipal League conference. She also regularly conducts tailored trainings to towns and cities, including planning commissions, boards of adjustment, historic preservation commissions and governing boards. She authored “A Conversation on Quasi-Judicial and Ex-Parte Issues” in *Colorado Municipalities*.

Geoff Wilson served as General Counsel for the Colorado Municipal League for 27 years, where he represented the interests of the League’s 265 member municipalities before the Colorado General Assembly, in rulemaking and before Colorado’s appellate courts. Beyond representation of municipalities as city Attorney, Geoff’s areas of emphasis include sales and use taxation, ethics and conflicts of interest, open records, open meetings, the TABOR amendment, elections and oil and gas regulation. In fact, Geoff has worked with oil and gas issues for over twenty years. He has been intimately involved with numerous case defining municipal authority regarding oil and gas, as well as with drafting recent state legislation further defining that municipal authority.

Work Plan and Schedule

The proposed Scope of Services is organized into three phases, and we believe it can coordinate with the estimated timeline within the Town’s January 29, 2021 Request for Proposals:

- 1) Code Diagnosis,
- 2) Code Update, and
- 3) Code Adoption.

Phase I. Code Diagnosis

Project Initiation

I will meet with Town staff to plan the project schedule, discuss project coordination and review protocols, and identify issues associated with administering the current development regulations and achieving the objective of implementing the Town’s new plan. Town staff will be requested to compile a list of major concerns with the current land use and development regulations that have not been captured in the Comprehensive Plan.

Document Review

I will conduct a review of the Municipal Code associated with land use and development regulation, including Chapter 15, Chapter 16 and Chapter 17, as well as the 2006 Comprehensive Plan, and the upcoming 2022 Comprehensive Plan, and the Official Town general zoning map and the Johnstown Municipal Boundaries and Growth Management Areas map. Town staff will be requested to provide electronic copies of the current, most up-to-date development regulations and other supporting documents deemed necessary to carry out the project. The product of this task is an analysis of the Town's existing codes, and commentary with general recommendations on proposed changes.

Community Engagement

We can host meetings, as identified in the Town RFP with community and stakeholder committees, planning commission and staff to ensure our document review comports with the expectations of the project and needs of the community. Given the current state of affairs, we will also be nimble and have remote meetings, as requested, in addition to citizen comment submission via electronic means.

Phase II. Code Update

Annotated Outline

I will prepare an annotated outline for consolidating and reforming the Town's annexation, zoning, subdivision, and other development regulations, and ask for contribution from the Town Planning staff with this task. I will present the annotated outline to the Planning Commission and discuss any suggested refinements. One or more meetings during the same trip can be scheduled with Town staff and other relevant committees.

Draft Code

Using the annotated outline as a guide, and with the assistance of the Town Planning team, I will completely rewrite and reorganize the Town's land use and development regulations. At a minimum the rewrite will include:

- General provisions, non-conformities, and enforcement;
- Administration and procedures, inclusive of annexation;
- Zone districts and uses;
- Special regulations (as appropriate, such as the sign regulations);
- Design standards;
- PUD guidelines;
- Subdivision regulations; and
- Definitions.

This draft will consolidate the Town's development regulations, with refinements that implement the comprehensive plan and establish predictable rules and processes in an organized format that is legally sound.

We will present sections of the draft code in a series of Planning Commission work sessions and will discuss any suggested refinements. One or more meetings during each trip can be scheduled with Town staff. Town staff will be requested to assist with meeting logistics.

Community Engagement

We will facilitate a community workshop during this project phase, to provide an opportunity for public feedback and stakeholder engagement on key draft code provisions prior to public hearings. If possible at the time, the workshop will be structured as day long open house events to ensure good turnout (again depending on the state of the pandemic and local health orders and recommendations at the time). We will attend one joint work session with the Town Council and Planning Commission to present the draft regulations, highlight key provisions and revisions, and obtain guidance for preparing the final draft of the development code. One or more meetings during the same trip can be scheduled with Town staff.

Phase III. Code Adoption

Community Engagement/Public Hearings

We will prepare a revised draft of the regulations incorporating all refinements from the Town staff, Town Council and Planning Commission discussions in Phase II. We will attend one public hearing each before the Planning Commission and Town Council to present the revised draft code along with comments summarized from the community workshop. Prior to the hearings, we will: (1) review and confirm public notice format and timing pursuant to state statutes and the Town's Municipal Code, (2) prepare a cover memorandum summarizing key process events to date, significant issues and recommendations, (3) confirm the proper Planning Commission resolution and Town Council ordinance format for recommendation and adoption of the new code, and (4) prepare for and facilitate any final amendments desired by the Town Council to be incorporated at the conclusion of the public hearing, in the form of amendments to the adopting ordinance made by motion. Based on the outcome of the public hearings, we will incorporate approved amendments into a final document to be presented to Town staff and the Town Council.

Cost estimate for professional services, travel and deliverables

We commit that our total amount charged for this project will not exceed \$85,000. As stated earlier, this maximum total fee assumes that Town Planning staff will assist during portions of the project which will save the respondent time and resources, including Code analysis, organization and drafting. We estimate expenses, such as travel and printing costs to not exceed \$1,500. We estimate Phase I Code Diagnosis to amount to around \$12,500; Phase II Code Update around \$50,000 and Phase III Code Adoption around \$20,000.

References

1. Glen VanNimwegen
Planning Director
City of Longmont
385 Kimbark Street
Longmont, CO 80501
gvannim@yahoo.com
(303) 651-8710
2. Steve Glammeyer

City Manager
Former Public Works and Planning Director
City of Fort Morgan
100 Main Street
Fort Morgan, CO 80701
Steve.glammeyer@cityoffortmorgan.com
(970) 542-3972

3. Jonathan Cain
Assistant City Administrator
City of Idaho Springs
1711 Miner Street
Idaho Springs, CO 80452
(303) 567-4421
jcain@idahospringsco.com
4. Sarah Crosthwaite
Economic Development Manager
Town of Johnstown
450 S Parish Avenue
Johnstown, CO 80534
(951) 250-1471

In conclusion, I appreciate the opportunity to submit this RFP, and look forward to meeting you and any members of the selection committee. Please feel free to contact me with any questions you may have.

Sincerely,



Nina P. Williams

AGREEMENT FOR PROFESSIONAL CONSULTING SERVICES

THIS AGREEMENT made this 5th day of August, 2021, by and between the Town of Johnstown, Colorado, a Colorado home rule municipal corporation (“Client”), and Gould Evans, Inc., a Kansas Corporation (“Consultant”).

WITNESSETH

WHEREAS, the Client desires to engage the Consultant to render certain agreed upon professional planning services for the Rewrite of the Municipal Code related to Land Development, and the Consultant is willing to provide such services, all upon the terms set forth below.

NOW, THEREFORE, in consideration of these premises, the parties hereto agree as follows:

1. **Scope of Services:** The Consultant will undertake work assigned by Client relating to *Attachment A: Scope of Services*.
2. **Time and Performance:** The Consultant’s services shall commence upon execution of this Agreement by both parties. Once approved by the Client, the Consultant shall complete the tasks described in the Scope of Services within eighteen (18) months from the date of execution of this Agreement, unless delayed by circumstances beyond Consultant’s control.

The Consultant will exercise reasonable skill, care and diligence in the performance of its services, and will carry out its responsibilities in accordance with the customarily accepted planning practices in Consultant’s community. The Client shall be responsible for the timely delivery of data and support information requested by the Consultant in a manner that will allow the Consultant the ability to perform its services within the time frame noted above.

Compensation: The Consultant shall be compensated, a fixed fee not-to-exceed **\$153,680.00 (One-Hundred Fifty-Three Thousand Six Hundred Eighty Dollars)**, including reimbursable expenses. Consultant will bill based upon the percentage of work complete by Task, up to the maximum fees stated above. Consultant will not exceed the maximum fees stated above without written authorization from the Client.

3. **Payment:** The Client shall pay the amount due within 30 days after receipt of Consultant’s invoice. If the invoice is not paid within 30 days, the Consultant may suspend services upon written notice to the Client. If a portion of the Consultant’s statement is disputed, the Client shall pay the undisputed portion by the due date. Interests on undisputed amounts due and unpaid shall accrue at the rate of 1.5% per month from date due until paid. In any action to recover payment due, Consultant, if the prevailing party and only to the extent permitted by law, shall be entitled to recover its attorney’s fees costs. The Client shall advise the Consultant in writing of the basis for any disputed portions of the statement within 7 days of receipt of invoice. Undisputed portions of the invoice shall be timely paid by Client notwithstanding such disputed portions.
4. **Time and Expense Records:** The Consultant shall keep and maintain time and expense records relating to the scope of services described above, together with supporting receipts,

vouchers, and appropriate documentation. As necessary, these records and other appropriate documentation may be required to support invoices submitted to the Client. The Client shall have the right to examine such records as it deems necessary upon reasonable notice to the Consultant at a location in the municipal boundaries of the Town of Johnstown.

5. **Authorization of Changes:** Any changes or additional tasks required for the performance of this Agreement and any compensation due for the provision of additional services shall only be authorized by the Client in writing, and the Consultant shall first request such changes in writing. The Consultant shall be compensated for any additional tasks so approved and authorized, based upon a fee determined by the Consultant and Client for such additional professional services.
6. **Liability:** To the extent permitted by applicable law, the Consultant agrees to indemnify and hold harmless the Client, its employees, officials, agents and representatives, from any and all losses of whatever kind to the extent caused by Consultant's negligent acts of failures to act or by Consultant's willful or wanton conduct in performance of this Agreement.
7. **Disputes/Termination:** Each party may terminate this Agreement with ten (10) days' written notice to the other party. In the event of such termination, provided the Consultant is not then in default under this Agreement, the Client shall pay the Consultant its compensation and expenses to and through the actual date of termination, upon documentation of those costs by written invoice to the Client.
8. **Ownership of Documents:** Upon receipt of final payment by Consultant, all original final documents, studies or graphic materials, drawings, plans and digital files prepared by the Consultant shall be deemed property of the Client except as to confidential matters or trade secrets of the Consultant (if identified as such in writing by the Consultant), but only after the final payment by the Client for the same. The Consultant shall be permitted to retain copies, including reproducible copies, of the Consultant's drawings, specifications and other documents. The Client's right of ownership in all such documents shall not prohibit the Consultant from future utilization of design or planning drawings or concepts in the ordinary course of Consultant's business and the Client hereby grants the unrestricted permission to use all such data contained in the Consultant's drawings, text and other documents.

In the case of any future reuse of the documents by the Client without Consultant's direct professional involvement, the Consultant's and Consultant's consultants' names shall be removed from all such documents and the Consultant shall not be liable to the Client in any manner whatsoever for their reuse.

9. **Confidentiality of Findings:** Any reports, information, data or intellectual property whatsoever given or prepared as assembled by the Consultant under this Agreement shall not be made available to any individual or organization by the Consultant without the prior written approval of the Client, except for those uses specified in Item 10, Public Relations.
10. **Public Relations:** Consultant shall have the right to retain and utilize copies of all work it produces on the Project for citation and dissemination in the Consultant's resume, brochures and other generally recognized forms of professional public relations.

11. **Extent of Agreement:** This Agreement represents the entire and integrated agreement between the Client and Consultant and supersedes all prior negotiations, representations or agreement, either written or oral. This Agreement may be amended only by written instrument signed by both the Client and Consultant.
12. **Severability:** Should any of the provisions of this Agreement be determined to violate any state law or Town ordinance, that shall not affect the validity of the other terms of this Agreement and there shall be added to this Agreement a legal, valid or enforceable term or provision as similar as possible to the stricken provision.
13. **Applicable Law:** Parties agree that Colorado law is controlling in interpreting this Agreement. The venue for any disputes arising under the Agreement shall be a court of jurisdiction originating in Weld County, Colorado.
14. **Insurance:** Consultant shall maintain, at its own expense, the following insurance with insurance companies reasonably acceptable to Client:
- (a) Professional Liability Insurance in the amount of five hundred thousand Dollars (\$500,000.00) (per claim and aggregate, with all coverage retroactive to the earlier of the date of this Agreement and the commencement of Consultant's services under this Agreement) covering personal injury, bodily injury and property damages to the extent caused by consultant's negligent acts, errors or omissions, which coverage shall be maintained for a period of three (3) years after the date of final payment under this Agreement.
 - (b) Commercial General Liability Insurance, occurrence form, (including completed operations and broad-form contractual liability) in the amount of five hundred thousand Dollars (\$500,000.00) combined single limit per occurrence and aggregate covering personal injury, bodily injury and property damage, which insurance shall name the Client as an additional insured.
 - (c) Commercial Automobile Liability Insurance, including owned, hired and non-owned vehicles, if any, in the amount five hundred thousand Dollars (\$500,000.00) covering bodily injury and property damage, which insurance shall name the Client as an additional insured.
 - (d) Worker's Compensation Insurance, which shall fully comply with applicable law, and employer's liability insurance with limits of not less than one hundred thousand Dollars (\$100,000.00) per accident / \$1 Million disease policy limit / \$1 Million disease each employee. Consultant shall provide a valid waiver executed by its worker's compensation and employer's liability insurance carrier of any right of subrogation against Client or its employees for any injury to a covered employee working on Client's premises.

Upon execution of this Agreement, Consultant shall provide to Client Certificates of Insurance reflecting the required coverages at their request. The certificates shall specify the date when such insurance expires. Each policy and each Certificates of Insurance shall provide that Client shall be given not less than thirty (30) days' written notice before cancellation, non-renewal of coverage of such insurance except for non-payment. A renewal

certificate shall be furnished to Client prior to the expiration date of any coverage, and Consultant shall give Client written notice of any reduction or other material modification in such insurance no later than thirty (30) days prior to such change.

15. **Assignment:** Consultant shall not assign this Agreement or any part hereof, or the right to any payments to be received hereunder, without prior written consent of Client. However, Consultant may subcontract portions of the services the subconsultants without violating this provision.
16. **Mediation:** In the event that a dispute shall arise between the parties to this Agreement, then as a condition precedent to legal action by either party, the parties agree to participate in mediation, as needed, in an effort to resolve the dispute. The parties agree to split the mediator's fees equally. The mediation shall be administered by a mutually agreeable mediation service and shall be held in Weld County, Colorado, unless another location of mutually agreed upon.
17. **Independent Contractor.** Consultant understands and agrees that Consultant is an independent Consultant and not an employee of the Client. The Client shall not provide benefits of any kind to Consultant. The Client shall not be responsible for withholding any portion of Consultant's compensation for the payment of Federal Insurance Contributions Act (FICA) tax, workers' compensation, or other taxes or benefits. CONSULTANT IS NOT ENTITLED TO UNEMPLOYMENT COMPENSATION COVERAGE FROM THE CLIENT. CONSULTANT 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 Client, Consultant may engage in any other lawful business activities during the term of this Agreement.
18. **Time.** Time is of the essence of this Agreement and of each covenant hereof. Client recognizes that Consultant's performance must be governed by sound professional practices subject to the industry recognized Standards of Care.
19. **Illegal Aliens.** Consultant 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.
20. **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.

21. 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.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed as of the day and year first written above,

FOR:

TOWN OF JOHNSTOWN, CO

Name: Gary Lebsack

Signature: _____

Title: Mayor

Date: _____

Attest: Diana Seele, Town Clerk

Signature: _____

GOULD EVANS

By: _____

Name: Graham Smith, AICP

Title: Associate Principal

STATE OF Missouri)
) ss
COUNTY OF Jackson)

SUBSCRIBED AND SWORN to before me this _____ day of _____, 2021, by
Graham Smith as the Associate Principal of Gould Evans.

WITNESS my hand and official seal.

My commission expires: _____

Notary Public

EXHIBIT A
SERVICES

Scope of Services

Task 1 – Diagnosis

The Diagnosis task is about identifying conflicts and omissions with the current regulations that keep the community from achieving their vision for the future.

Task 1.1 Public Engagement Strategy: Gould Evans will work with Town Staff and key stakeholders to develop a public engagement strategy specific to Johnstown's planning issues, past public participation experiences, existing communication networks and constituency groups. Based on our experience on similar past projects, at a minimum we see this involving the following groups:

- Staff – a tight working group of those most familiar with the day-to-day administration of the regulations, who will provide technical support, perform detailed review and comment, and provide project direction;
- Steering Committee – a broad group of interested stakeholders that will provide conceptual direction on key issues and inform the Planning and Zoning Commission and Town Council of significant policy issues.
- Focus Groups / Special Issue Subcommittees – depending on the make-up of the Steering Committee, and other input, special topic groups may be needed to provide more detailed guidance and oversight of certain topics. These groups will typically align with the Critical Issues tasks in Task 2.
- Planning and Zoning Commission and Town Council – in addition to any role on the above committees, these groups will be provided periodic project status updates at regular meetings, be presented recommendations in joint work sessions, and better prepare them for their role in the official adoption process.

A critical component of our public engagement strategy is outlining the different types and levels of information that each of these groups will need to perform their roles on this project.

Task 1.2 Plan and Regulation Review: A preliminary review of the current land use and zoning code and subdivision regulation will be completed. The review will identify the initial topics for an informed discussion among all stakeholders regarding regulatory strategies appropriate to achieve Johnstown's planning goals. The preliminary review will be expanded on by identifying specific connections to the *Johnstown Area Comprehensive Plan* and other town plans to create a plan conformance report.

Task 1.3 Steering Committee Kick-off Meeting: Outline the Public Engagement Strategy, identify primary objectives, establish timelines, and assign roles and responsibilities for different participants. A review and discussion regarding current issues with the Development Code will be facilitated and be used to inform the Plan Conformance Report.

Task 1.4 Plan Conformance Report: This report will review the existing Development Code and identify where the regulations either align or conflict with significant planning policies of the Town, rooted in the guidance provided by *Johnstown Area Comprehensive Plan*. It will also include a technical audit that looks at streamlining and improving the coordination of the regulations to improve administration and user-friendliness. The outcome of discussing this report establishes a proposed framework for the updated regulations and identify critical issues for further analysis and discussion.

Task 1.4a Engagement: The findings of the Plan Conformance Report will be presented for discussion to the Steering Committee and at a joint meeting of the

Planning Commission and Town Council. This report will prepare all of these groups for the scope and nature of the project and get direction on both the proposed framework and the critical issues. This meeting initiates the broader public engagement portion of the project.

Task 2 – Align

The Align task sets the foundation for the informed discussion among all stakeholders regarding regulatory strategies appropriate to achieve Johnstown's planning goals.

Task 2.1 Critical Issues Summaries: These summaries provide a brief (2-6 page) white paper on the key topics identified in the Plan Conformance Report. A typical code re-write may have 4 to 6 of these critical issues that are most important to the success of the project and require special facilitation. This format has proven successful in getting broad input and endorsement of concepts and approaches, without getting mired in specific regulatory language. With this direction, a more "technical" group can set about the task of drafting, reviewing and revising regulations.

Task 2.2 Public Open House: This is the public kick-off event. The open house, exhibits and supporting materials will have 3 key objectives: (1) provide clear links to the policies and priorities of *Johnstown Area Comprehensive Plan* and other long-range plans; (2) elevate the understanding of important development concepts and potential regulatory strategies; and (3) clearly convey the physical impact that existing and potential regulations have on development and investment in the community. Based on the final engagement strategy, these can either be arranged around focus groups for each topic or organized as stations for an open house, or a combination of these strategies. What is critical about this meeting is that it is the start of the discussion, and the Plan Conformance Report will be used to bring everyone to the discussion with the same basic level of information and the same understanding of the scope and nature of what may change, including a range of options for further consideration and discussion.

Task 2.3 Critical Issues Workshop: Some issues may require a more in-depth discussion with stakeholders and those impacted by potential regulatory strategies. The Critical Issues Summaries will be used to guide any continuing discussions. The format of these discussions may include sub-committees, focus groups, or special invites to defined constituencies, but will depend on the issues selected in the Diagnosis phase and on the final Public Engagement Strategy. Up to 6 specific topics or workshop break out groups could be included. The specific strategy, format and timing for this additional workshop can be finalized in the Public Engagement Strategy. The input from the Open House and any of these follow up meetings that may be necessary are coordinated into the Draft Regulation Framework or Interim Drafts based on the issue and timing of the workshop.

Task 2.4 Draft Regulation Framework: Based on the outcomes of the initial public engagement tasks and discussions, a Draft Regulation Framework will be created. It will be an annotated outline of the Development Code identifying: (1) areas in need of change – new provisions that are needed or old approaches that do not align with current policies; (2) areas to maintain in current form; and (3) areas to revise and amend, but keep the substantive provisions and intent the same. The framework will also include an "Executive Summary" which supports a section-by-section analysis with recommendations, preferred directions or topics for further review through the Initial or Interim Draft regulations.

Task 2.4a Steering Committee Meeting: The Draft Regulation Framework will be presented to the Steering Committee for additional discussion and input.

Task 3 - Launch

The Launch task will focus on the preparation of the development code regulation updates.

Task 3.1 Initial Draft: Based on the input from the Diagnosis and Align tasks, our team can craft specific regulatory strategies appropriate to Johnstown. We will prepare an initial draft of the Development Code that best implement Johnstown's plans and land development policies. As part of the initial draft regulations an updated zoning map will be provided.

Task 3.1a Steering Committee Meeting: Introduce the Steering Committee to the Initial Draft changes and initiate discussion on specific focus topics.

Task 3.2 Review and Comment Period: The Initial Draft and any necessary Interim Drafts are vetted through a review and comment period. Typically, this involves only the staff, Steering Committee, and any necessary sub-committees or focus groups. Following delivery of the documents, a three- to six-week period is typically necessary for these groups to consider the documents and provide feedback.

Task 3.3 Final Draft: Using the input gained from the review and comment of the Initial Draft by the Steering Committee and stakeholders, we will prepare the Final Draft of the Development Code. During this task, much of the text will be finalized, allowing us to develop detailed graphics to support the text, and finalize formatting.

Task 3.4 Public Open House / Public Official Work Session: The Final Draft also provides a good opportunity to reveal the full set of regulations to the general public. "Executive summaries" and "How to Use" guidance will be created to orient people to key regulatory strategies. This same information can be presented at a joint work session of the Steering Committee, Johnstown Planning and Zoning Commission and Town Council. It is important that this first introduction of a complete draft be presented in an informal setting outside of the official public hearing process. This will enable a better understanding of what is changing and why, and still allow time for feedback and adjustment.

Task 3.5 Adoption Draft: The Adoption Draft will incorporate comments from the discussion and review of the Final Drafts of the regulations. This draft will enter the formal review and comment process.

Task 3.6 Public Hearings: Our team will support up to three meetings for the adoption process, at least one of which is anticipated to be a public hearing before the Johnstown Planning and Zoning Commission, and at least one of which is anticipated to be the official adoption by the Town Council.

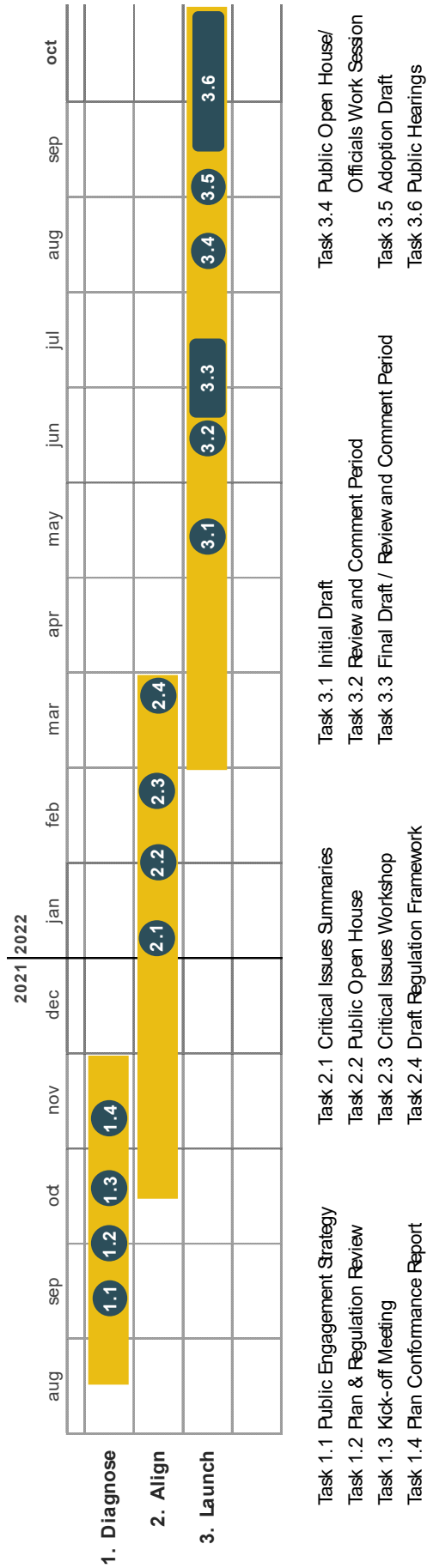


EXHIBIT B
REQUIRED PROVISIONS FOR CONTRACT FOR SERVICES
PROHIBITING EMPLOYMENT OF ILLEGAL ALIENS

Consultant 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 Consultant that the subcontractor shall not knowingly employ or contract with an illegal alien to perform work under this public contract for services.

Consultant 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.

Consultant 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 Consultant obtains actual knowledge that a subcontractor performing work under the public contract for services knowingly employs or contracts with an illegal alien, the Consultant shall be required to:

1. Notify the subcontractor and the contracting state agency or political subdivision within three days that the Consultant 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 Consultant 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.

Consultant 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 CONSULTANT VIOLATES ANY OF THE AFOREMENTIONED REQUIREMENTS, THE CLIENT 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.



Town of Johnstown

MEMORANDUM

TO: Honorable Mayor and Town Council Members

FROM: Matt LeCerf, Town Manager

DATE: August 16, 2021

CC: Town Staff
Local Media

SUBJECT: Town Manager's Report

Upcoming Town Council 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):

- 09/08/2021 – Regular Town Council Meeting (Wednesday)
 - 09/20/2021 – Regular Town Council Meeting
 - 09/27/2021 – FY 2022 Budget Work Session
-

Administration, Finance, Planning, & Human Resources

- *Sewer Bonds* – On August 4, 2021, The Town received notification from Standard and Poor's that the credit rating for the Town is A+ with an outlook of "stable", which indicates that this assessment is unlikely to change in the intermediate term. The bond closing date is expected to be September 1, 2021.
- *2022 Budget* – The 2022 Budget process is well underway. Department budgets have been submitted and budget meetings are in the process of being held.
- *CDOT Coordination* – Town Staff has been coordinating heavily with CDOT staff and engineers, lately, to facilitate appropriate access, design, and configuration for several current development proposals along I-25, US 34, and Hwy 60.
- *Compliance Order on Consent* – The COC between the Town and CDPHE has cleared its public comment period. At this time the order is in effect, and we have measurable milestones to accomplish and complete as agreed upon between the Town and CDPHE.

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- *Johnstown Housing Authority (JHA) Boiler Project* – The Supplemental Environmental Project (SEP) with the Johnstown Housing Authority is moving forward. This is one of 3 projects anticipated and associated with the COC with CDPHE. Quotes and an award for the boiler replacement at JHA have been completed. The Town issued a check for approximately \$5,000 less than anticipated based on the bids, but we anticipate make up this gap through either the LED street light conversion or the solar panel installation at the Johnstown Recreation Center.
- *Planning & Zoning Commission* – PZC held a work session on July 28; and hearings for new projects on August 11. The next PZC meeting is scheduled for Wednesday, September 15, due to the Labor Day holiday.
- *Hiring* – Our new Assistant Finance Director starts this week replacing a recent vacancy in the Finance Department.
- *Johnstown Cash Program* – As of August 6, there are currently 49 businesses signed up for the Johnstown Cash Program and close to \$49,000 has been redeemed in certificates. The program will run until December 31, 2021 and certificates will no longer be valid after that date.
- *Business of the Month* – August's Business of the Month is Cinco Brothers Barbershop located at 4859 Thompson Pkwy. Cinco Brothers was officially announced during the August 2, 2021 Town Council meeting.
- *CDOT Revitalize Main Street* – The Town received a response from the CDOT review committee asking for additional information before a grant decision is made. Staff hopes to have an answer within the coming weeks. If grant funds are awarded, the Town will work with CDOT to see if a PO can be extended so that the Parklet Program is kickstarted for Summer 2022 as it is unlikely to have materials and program in place before winter season begins.
- *Liquor License Renewal*: The Beer and Wine Liquor application for Little House has been submitted to the state for their approval.

Police Department

Training

- *Legal Updates Training* – All officers took a warrant update class presented by the Larimer County District Attorney's office. This class went over legal updates as they pertain to search warrants.
- *Recruitment Training* – Lt. Oglesby took the “Find'em, Hire'em, Keep'em” training class offered by Command Presence. He learned why traditional recruiting techniques are not effective and best practices for recruiting plans and analysis along with the importance of branding your agency.
- *SRO Training* – Officer Kelley attended the Advanced National Association of School Resource Training in Cheyenne Wyoming. This course advanced Officer Kelley's knowledge and skills as a law enforcement officer, informal counselor, and educator.

Public Works Department

Streets, Stormwater, Fleet & Parks

- *Grading* – LCR3, LCR20C, WCR46, WCR44, and WCR42 were all completed.
- *Crack Sealing* – Crack sealing was started in the Thompson River Ranch neighborhood. Wildwood, Vinewood, Saddlewood, and Silverwood were all completed.
- *Parks* – Staff is currently repairing irrigation in all parks. We called in True Green to treat parks with revive & insecticide which should help with the fatigue. Staff is working on procurement of garage for cemetery, irrigation design for cemetery and new playground equipment for Rolling Hills Ranch Park.
- *Collection & Distribution* – Staff repaired a fire hydrant on CR3N, repaired a service line on South 1st, Blacksheep fire line, and replaced a valve box cover on Wildwood Way. Staff handled low pressure calls while Town was on interconnects for GAC installation.

Water Plant & System

- *GAC* – Evoqua was on site Monday to assist in the GAC start-up. After putting the units online, Staff noticed discoloration in the water and shut down the process. Staff sourced parts to upsize the piping and front washed the vessels to clear the discoloration. Units were fully operational by Friday morning.
- *Ultrasonic Buoy* – The new Ultrasonic Buoy has been assembled and installed at Town Lake. This should help break up algae in the reservoir and contribute to better tasting water.
- *Sanitary Survey* – Staff met with CDPHE on Wednesday to go through documentation and CDPHE performed a site visit Friday.

Wastewater Plants

- *Low Point* – DMR Water Quality samples were completed week of August 9. Staff is dialing in efficient and effective operation of the fan press. We are working through a rise in effluent ammonia concentration by being so effective with operations. Staff started annotating SOPs for plant processes and providing information for Low Point Design. Chlorine delivery triggered an investigation of piping for a leak. Staff will be working together to replace piping and create a redundant feed.
- *Central* – Quarterly sampling occurred the week of August 9. Staff is troubleshooting DAF aeration feed. Valves were disassembled and cleaned to improve operations. Brownhill is working on SCADA communications for the operation of the DAF Polymer feed.
- *Central Water Reclamation Facility (WRF) Design* – The Central Wastewater Treatment Facility design kicked-off this week. The Preliminary Effluent Limitations (PEL) Permit Application has been submitted. The branding of the facility is also going to be rebranded to the Central Water Reclamation Facility. This is because of the fact that the wastewater is being treated to the point that the water could be reclaimed for other potable or non-potable purposes and this is more of an environmentally conscious naming convention.

Development & Project Updates

- *Charlotte St* – Staff meeting to determine if a second public meeting is required due to delayed post card mailings. The design engineer is moving forward with concept and creating a list to coordinate landscaping and private improvements with.
- *Old Town Storm Project* – Construction is anticipated to start after Labor Day. Staff is working on public outreach for the pending construction to coordinate communication and scheduling for the residents.
- *Pavement Management Program (PMP)* – Police and Senior Center slurry seal were completed. Staff is in the process of crack sealing, patching and replacing concrete ahead of HA5 and working on public outreach that is tentatively set for end of August.
- *I-25 Waterline Project* – Construction has started on the 12” waterline along south SH60. DeFalco is working through material sourcing which includes a backorders on fittings.



Town of Johnstown

TOWN COUNCIL AGENDA COMMUNICATIONS

AGENDA DATE:	August 16, 2021
SUBJECT:	Ordinance 2021-206 Approving the North Ridge P.U.D. Outline Development Plan
ACTION PROPOSED:	Re-open Public Hearing and Consider Ordinance 2021-206 on First Reading - Approving the North Ridge P.U.D. Outline Development Plan, which supersedes any existing PUD plans
ATTACHMENTS:	1. TAC and Packet from July 19, 2021 Hearing a. Ordinance 2021-206 b. Vicinity Map c. North Ridge Outline Development Plan d. PZC Agenda Memorandum – Outline Development Plan 2. Revised Ordinance 2021-206
PRESENTED BY:	Kim Meyer, Planning & Development Director

AGENDA ITEM DESCRIPTION:

This is a continuation of the Agenda Item opened on July 19, 2021. See Attachment 1 for a full set of prior documents related to this item.

Please be advised that the public hearing conducted on this matter was closed prior to passage of the motion to continue the hearing. If Town Council would like to consider additional evidence, the public hearing should be re-opened by motion duly passed.

If the hearing is re-opened:

This memo addresses additional perspectives on issues brought up in July. During that hearing Council expressed concern with the residential density proposed adjacent to existing larger-lot single family homes in Thompson River Ranch Filings 3 & 4.

In re-evaluating the existing context of this proposed Outline Development Plan (ODP), Staff has provided a brief analysis of the area.

- The Ridge at Johnstown is a larger master-planned mixed-use area (410+ acres), of which North Ridge is a part. The Ridge, focused around the interchange, is intended a more commercially-intense development, overall. There are two existing subdivision filings of The Ridge which include 288 single family lots with more traditional lot sizing. A new “South Ridge” Annexation and ODP was recently submitted to the Town for an additional 80-acres of traditional single-family lots, and a transitional higher-density residential area acting as a buffer between those neighborhoods and the commercial and business areas nearer Freedom Parkway (CR 18) and Frontage Road. Staff estimates approximately 225 acres of the 410 acres are dedicated to residential development.

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- Thompson River Ranch is primarily a residential neighborhood, with areas originally intended for “mixed-use” nearest the Frontage Road, which have since been developed as a church site and the more-dense Filing 9 “Carriage Homes.” As there is concern with compatibility related to the TRR areas adjacent to the North Ridge site, Staff completed a brief comparison table to better clarify the issues:

	Thompson River Ranch		North Ridge ODP
	Filing 3 & 4 – SFD	Filing 9 – Carriage SFD	Planning Area E – SFD, SFA or Multi
Gross Acres	39.5	21.2	23.4
Acres of O.S.	4.0 (10.1%)	7.6 (35.8%)	7.3 (min 30%)
Acres – Net of O.S.	35.5	13.6	16.1
Lots/Units	136	128	234
Gross Density*	3.4	6.0	10.0
Net Density (for comparability)	3.8	9.4	14.5
Lot Size Range	5,500 - 9,000 In-line 8,016 - 16,234 Cul-de-sac	2,785 - 5,310 Carriage 3,740 - 6,256 Alley	TBD with Development Plans

Note that most of the PUD-required open space for Thompson River Ranch Filings 3 & 4 is located in other areas of the master-planned community and the Big Thompson floodplain areas. The lots in this area along the southern boundary in this area have homes set between 48 to 57 feet from that boundary line; homes along the eastern and western boundaries range from approximately 51 to 92 feet from those boundaries, largely dependent on the size of the home.

- North Ridge proposed a residential area that is more-dense than the adjacent subdivisions, with the intent being to create a buffer of residential uses between the higher intensity highway commercial areas and the existing Thompson River Ranch neighborhood.
- Johnstown Municipal Code (JMC) Analysis:
 - Section 16-302(d) provides that residential units in a PUD-MU zone should be consistent with the type of units permitted in the SF-2 and MF-1 zoning districts. While there is no minimum lot size required for the PUD-MU district to encourage more creative designs and provide community amenities, the SF-2 zone provides that the minimum lot area per dwelling unit is 4,500 SF (§16-203) and the MF-1 zone provides that the minimum lot area per dwelling unit is 3,000 SF (§16-223).
 - Section 16-306 encourages clustering of dwelling units, as well as bufferyards to minimize impacts to adjacent properties, the size of which shall be determined through the review process.
 - Section 17-133 indicates the maximum density of dwelling units in a PUD shall be 12 units/acres, or less, if the Planning & Zoning Commission permits such, provided that a density less than 12 units per acre shall be based on the proposed land use plan.

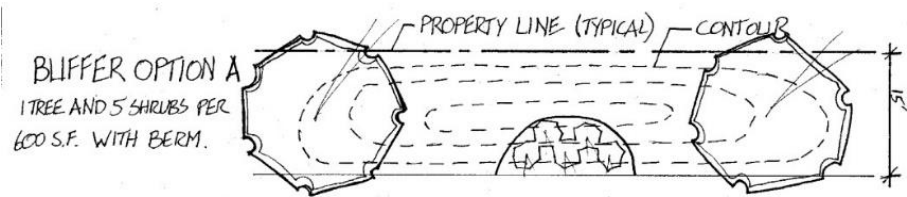
In light of the comments and discussion at the July 19th hearing, and subsequent analysis of the adjacent areas as well as the municipal code and standards, Staff has considered potential revisions to the North Ridge ODP that could further mitigate the impacts of development of the North Ridge area. The intent is to find a balance of compatibility between the existing residential and the proposed buffer of high-density residential.

RECOMMENDED REVISIONS:

Staff proposes revisions to the approval of this ordinance on first reading, that requires a revision to the ODP documents prior to the Second Reading of the Ordinance, that includes the following:

1. ADD: A minimum 15-foot Buffer Yard A is required adjacent to existing residential properties, in compliance with the Town Landscape Standards (Sec. E.2), with 1 tree and 5 shrubs, per 600 SF.

(Note: This is a typical buffer yard between non-residential and residential uses.)



2. ADD: Construction of a 6-foot solid fence or wall is required, adjacent to existing larger-lot residential properties (>6000 SF), where none may exist at the time of construction.
3. REVISE: Maximum residential density in Planning Area E shall be revised to 8.5 DU/Ac. This would result in a maximum unit count of 200 units on 23.4 Acres.
4. ADD: Planning Area E shall permit only single family detached homes within 150-feet of the north and east boundaries. Any attached or multi-family housing types shall be placed outside of this use-transition buffer area.

These proposed revisions have been presented to the Applicant for their consideration.

LEGAL ADVICE:

Ordinance was prepared by the Town Attorney.

FINANCIAL ADVICE:

NA

RECOMMENDED ACTION:

Approve Ordinance 2021-206 Approving the North Ridge P.U.D. Outline Development Plan on First Reading, with changes to the ODP document prior to Second reading.

SUGGESTED MOTIONS:

For Approval

I move that the Town Council approve Ordinance 2021-206 Approving the North Ridge P.U.D. Outline Development Plan on First Reading.

For Approval with Modifications:

I move that the Town Council approve Ordinance 2021-206 Approving the North Ridge P.U.D. Outline Development Plan on First Reading, with the following modifications, and direct Town Staff to oversee such modifications to the North Ridge P.U.D. Outline Development Plan prior to recordation, to include revisions #1-4 as listed in this memo.

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For Approval with Conditions:

I move that the Town Council approve Ordinance 2021-206 Approving the North Ridge P.U.D. Outline Development Plan on First Reading, with the following conditions...

For Denial

I move that the Town Council deny Ordinance 2021-206 with the following findings...

Reviewed and Approved for Presentation,

A handwritten signature in blue ink, appearing to be 'W. J. C.', is written over a horizontal line.

Town Manager



Town of Johnstown

TOWN COUNCIL AGENDA COMMUNICATIONS

AGENDA DATE:	July 19, 2021
SUBJECT:	Ordinance 2021-XXX Approving the North Ridge P.U.D. Outline Development Plan
ACTION PROPOSED:	Hold Public Hearing and Consider Ordinance 2021-XXX on First Reading - Approving the North Ridge P.U.D. Outline Development Plan, which supersedes any existing PUD plans
ATTACHMENTS:	1. Ordinance 2021-XXX 2. Vicinity Map 3. North Ridge Outline Development Plan 4. PZC Agenda Memorandum – Outline Development Plan
PRESENTED BY:	Kim Meyer, Planning & Development Director

AGENDA ITEM DESCRIPTION:

The North Ridge Outline Development Plan (ODP) is connected to, and contingent upon, final adoption of the Ordinances related to the North Ridge Annexation and Zoning. That annexation and establishment of zoning to PUD-MU encompasses 35.32 acres, while the proposed ODP covers additional land for a total of approximately 60 acres. The additional acreage is land annexed into Johnstown, in 2005, as the 402 Exchange Business Park Annexation, and zoned PUD-MU at that time with the intent of commercial and mixed-use development. The ODP area is located along the I-25 frontage road, adjacent to Thompson River Ranch subdivision, county parcels, and the Abundant Life Tabernacle Church. (See Attachment 2).

The Planning & Zoning Commission (PZC) held a public hearing on June 9, 2021, to consider the North Ridge ODP, in conjunction with the proposed annexation and PUD-MU zoning. Public comment was given by two neighbors in the area, with concerns for how the existing ditch will be addressed in development, and requesting a privacy fence along property lines, adjoining the proposed development area. A Thompson River Ranch neighbor is concerned for his mountain views, density, impact on his very low water pressure, and his property value. Concern was also expressed regarding the increase in traffic on CR 18. Staff indicated that the development-level details are noted and will be further addressed at subdivision and development planning. The Applicant spoke of the intent to “culvert” the ditch and that there are existing agreements with the Gard Lateral Ditch Co.; also indicated that likely both parties would likely want perimeter fencing for screening and buffering between these uses.

The proposed ODP clarifies and identifies the proposed mix of uses, densities, and intensities of use, as well as providing a basis for Town staff – through the supplemental materials and reports required including engineering reports, master traffic study, and similar – to ensure that the proposed development plan is feasible for this location.

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The ODP document (See Attachment 3) illustrates:

Planning Area	Acreage	Use	Density/Intensity	Imperv Lot Coverage	Height
A	±14.2 Ac	Commercial	432,986 SF Max	70%	130 ft
B	± 3.2 Ac	Commercial	83,635 SF Max	60%	85 ft
C	± 7.1 Ac	Commercial	154,638 SF Max	50%	85 ft
D	±12.0 Ac	Office/Commercial	261,360 SF Max	50%	50 ft
E	±23.4 Ac	Residential	10 DU/Ac. Max	na	35 ft

There is language within the ODP that also allows some flexibility once more detailed development plans are proposed, which permits transfers of acreages between planning areas of up to 30%, to accommodate opportunities or obstacles encountered with the market or in detailed engineering and site design. Basic development standards are included, with more detailed design guidelines are expected with subsequent development plans which are expected to closely mimic those of The Ridge (formerly The Villages at Johnstown) immediately to the south of this.

Commercial Development standards would provide for a 50-foot building setback, and 20-foot parking setback from the I-25 corridor, and 20-foot setback for buildings and parking from the frontage road right-of-way. A minimum of 20% of commercial lots will be landscaped areas. Few specific uses were included in this ODP – mentioning only “a wide range of commercial development uses, which could include office, retail, private garage condominiums, hotel development or similar uses.” Staff generally supports these development standards, given the size of the lots remaining after the recent frontage road realignment, and the distance of Planning Area A from the main flow of highway traffic, but would seek to narrow and better understand that “wide range” of uses with updated development guidelines with preliminary and final development plans and subdivision.

The Residential area is currently under design and conceptual plans and indications with Staff is that the units will be proposed as for-sale, fee simple lots for small-lot single family, with a comparable design to the courtyard homes located to the north. The minimum 1400 SF lot size would be applicable primarily to a medium-density, townhome-type attached unit, and would necessarily increase as various types of housing types are proposed to accommodate required parking, drives, and setbacks. The residential area will be required to provide a minimum of 30% open space, which may include plazas, walks/trails, and other “hardscape” as well as landscaped areas.

Infrastructure capacity exists and/or will be constructed as development warrants. Town systems can adequately handle this additional demand.

The Johnstown Review Committee reviewed this project and provided redlines and comments, which have been addressed by the Applicant or will be incorporated into future development plans. Referrals of this ODP were sent to Loveland and Larimer County, comments related to future development plans or the annexation only.

The Planning & Zoning Commission Agenda Memorandum attached (See Attachment 4) provides further background and details. The property has been undeveloped agricultural land until recently. The memo also describes notification and a remote Neighborhood Meeting held on April 27, 2021, which no neighbors attended.

Based upon the materials submitted, analysis, and findings, the PZC approved a motion (4-0) to recommend to Town Council approval of this zoning request.

LEGAL ADVICE:

Ordinance was prepared by the Town Attorney.

FINANCIAL ADVICE:

NA

RECOMMENDED ACTION:

Approve Ordinance 2021-XXX Approving the North Ridge P.U.D. Outline Development Plan on First Reading.

SUGGESTED MOTIONS:**For Approval**

I move that the Town Council approve Ordinance 2021-XXX Approving the North Ridge P.U.D. Outline Development Plan on First Reading.

For Approval with Conditions:

I move that the Town Council approve Ordinance 2021-XXX Approving the North Ridge P.U.D. Outline Development Plan on First Reading, with the following conditions...

For Denial

I move that the Town Council deny Ordinance 2021-XXX with the following findings...

Reviewed and Approved for Presentation,



Town Manager

**TOWN OF JOHNSTOWN, COLORADO
ORDINANCE NO. 2021-__**

**APPROVING P.U.D. OUTLINE DEVELOPMENT PLAN FOR
NORTH RIDGE LOCATED IN THE SOUTHEAST QUARTER OF
SECTION 22, TOWNSHIP 5 NORTH, RANGE 68 WEST, COUNTY
OF LARIMER, STATE OF COLORADO, CONSISTING OF
APPROXIMATELY 60 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, Ridge II HoldCo, LLC, a Delaware limited liability company, submitted an application to the Town for approval of a P.U.D. Outline Development Plan for a subdivision known as North Ridge, located in the Southeast Quarter of Section 22, Township 5 North, Range 68 West of the 6th Principal Meridian, Town of Johnstown, County of Larimer, State of Colorado, consisting of approximately 60 acres; and

WHEREAS, on June 9, 2021, the Planning and Zoning Commission held a public hearing and recommended approval of the P.U.D. Outline Development Plan for North Ridge; and

WHEREAS, on July 19, 2021, the Town Council held a public hearing concerning approval of the P.U.D. Outline Development Plan for North 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 for North 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 for North 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 for North Ridge, located in the Southeast Quarter of Section 22, Township 5 North, Range 68 West of the 6th Principal Meridian, Town of Johnstown, County of Larimer, State of Colorado, consisting of approximately 60 acres, attached hereto and incorporated herein by reference as Exhibit A, is hereby approved.

Section 2. Supersede and Replace. The P.U.D. Outline Development Plan for North Ridge adopted herein shall supersede and replace the outline development plan, if any, previously approved with respect to the 402 Exchange Business Park annexation, an annexation approved by the Town on or about December 15, 2005.

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 ____ day of _____, 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

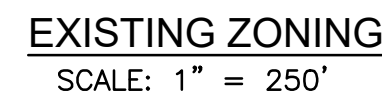
By: _____
Gary Lebsack, Mayor

NORTH RIDGE ANNEXATION VICINITY MAP



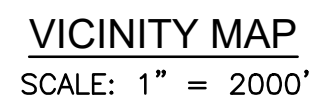
VICINITY MAP

LOCATED ON THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 22, TOWNSHIP 5 NORTH, RANGE 68 WEST OF THE SIXTH
PRINCIPAL MERIDIAN, COUNTY OF LARIMER, AND STATE OF COLORADO



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 THE TIME OF FINAL PLATTING. LOCAL AND COLLECTOR STREETS WILL CONFORM TO THE TOWN OF JOHNSTOWN STREET STANDARDS.
3. ALL DENSITIES AND UNIT COUNTS ARE PROJECTIONS, FINAL DENSITIES TO BE DETERMINED AT TIME OF PLATTING. DENSITY OF ANY GIVEN PHASE WILL NOT EXCEED 10 DU/AC, ACTUAL NUMBER OF UNITS WILL BE DETERMINED AT TIME OF RESIDENTIAL PARCEL PLATTING.
4. EXACT LOCATION OF PARCELS SHOWN ARE APPROXIMATE AND MAY VARY. EXACT LOT SIZES WILL BE DETERMINED WITH EACH PRELIMINARY AND FINAL SUBDIVISION SUBMITTAL.
5. FINAL CONFIGURATION OF PARCELS, OPEN SPACE AREA, AND STREETS MAY VARY FROM THAT SHOWN.
6. 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.
7. 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 PART OF THE FINAL SUBDIVISION PLATTING.
8. LIGHTING, SIGNAGE, AND LANDSCAPING REQUIREMENTS, INCLUDING LIGHTING FOR DEVELOPMENT WITH THIS PUD WILL EITHER FOLLOW THOSE APPLICABLE STANDARDS IN THE TOWN OF JOHNSTOWN MUNICIPAL CODE OR THE DEVELOPER MAY FORMULATE A 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.

IT IS ANTICIPATED THAT NORTH RIDGE WILL DEVELOP SOUTH TO NORTH, COMMENCING ON THE 402, LLC PARCEL WITH ANTICIPATED LOT DELIVERIES IN 2021 AND BUILD-OUT BY 2022 OR EARLY 2023. CURRENT CONCEPT PLANS FOR COMMERCIAL, INCLUDE CONVENIENCE STORE WITH GAS, RETAIL SHOPS, OFFICE CONDOMINIUMS, AND A POTENTIAL HOTEL ALONG THE I-25 CORRIDOR. GARAGE CONDOMINIUMS WERE CONSIDERED IN CONCEPT DRAWINGS, BUT HAVE BEEN REJECTED IN FAVOR OF OTHER COMMERCIAL USES TO BE DETERMINED BY MARKET DEMAND. CURRENT CONCEPT PLANS FOR RESIDENTIAL INCLUDE 23.5 ACRES OF SINGLE FAMILY SMALL FOOT-PRINT (1,100 - 1,700 SQ. FT.) HOMES. INTEREST ON THE RESIDENTIAL COMPONENT IS BY A SINGLE DEVELOPER WHO HAS SUCCESSFULLY DEVELOPED OTHER PROJECTS WITHIN THE TOWN.



THE INTENT OF THIS OUTLINE DEVELOPMENT PLAN (ODP) IS TO PROVIDE THE FRAMEWORK FOR THE NORTH RIDGE JOHNSTOWN DEVELOPMENT. NORTH RIDGE JOHNSTOWN IS A CONTINUATION OF THE RIDGE AT JOHNSTOWN DEVELOPMENT, ALL OF WHICH WILL BRING NEEDED INFRASTRUCTURE, SERVICES, AMENITIES, AND TAX REVENUE TO THE TOWN.

THE ANNEXATION OF THE BATH PARCEL WILL COMPLETE NORTH RIDGE AND COMPLEMENT THE RIDGE DEVELOPMENT BRIDGING THE TWO PROJECTS TOGETHER THROUGH INTEGRATED CONCEPT DESIGN AND UNIFORM DEVELOPMENT STANDARDS. THE BATH PARCEL IS CONTIGUOUS TO AN EXISTING ANNEXED PARCEL IN THE TOWN ALLOWING INFRASTRUCTURE TO BE BROUGHT TO NORTH RIDGE FROM EITHER OR BOTH THE SOUTH AND THE NORTH IN COORDINATION WITH DEVELOPED PROJECTS. THE TOWN WILL BENEFIT FROM REVENUES GENERATED BY NEW BUSINESS, AND INCREASED EXPOSURE AND VISIBILITY ALONG I-25. THE COMMUNITY WILL HAVE ADDITIONAL COMMERCIAL RESOURCES NEEDED FOR A GROWING JOHNSTOWN.

RIDGE II HOLDCO, LLC, A COLORADO LIMITED LIABILITY COMPANY, BEING THE OWNER(S) OF THE PROPERTY LOCATED IN THE TOWN OF JOHNSTOWN, COUNTY OF LARIMER, AND STATE OF COLORADO, DO HEREBY SUBMIT THIS OUTLINE DEVELOPMENT PLAN AND AGREE TO PERFORM UNDER THE TERMS NOTED HEREIN.

RIDGE II HOLDCO, LLC
A DELAWARE LIMITED LIABILITY COMPANY

BY: RIDGE II MANAGECO, LLC
A DELAWARE LIMITED LIABILITY COMPANY
ITS: MANAGER

BY: CALIBER SERVICES, LLC
AN ARIZONA LIMITED LIABILITY COMPANY
ITS: MANAGER

BY: CALIBER COMPANIES, LLC
AN ARIZONA LIMITED LIABILITY COMPANY
ITS: MANAGING MEMBER

BY: CALIBERCOS INC.
A DELAWARE CORPORATION
ITS: MANAGER

BY: _____
NAME: JENNIFER SCHRADER
ITS: PRESIDENT

TOWN COUNCIL

THIS OUTLINE DEVELOPMENT PLAN, TO BE KNOWN AS _____, IS APPROVED AND ACCEPTED BY THE TOWN OF JOHNSTOWN, BY ORDINANCE NUMBER _____, PADDED AND ADOPTED ON FINAL READING AT THE REGULAR MEETING OF THE TOWN COUNCIL OF THE TOWN OF JOHNSTOWN, HELD ON THE _____ DAY OF _____,

BY: _____
GARY LEBSACK, MAYOR

ATTEST: _____
DIANA SEELE, TOWN CLERK

[illegible]

NORTH RIDGE DEVELOPEMNT
JOHNSTOWN

OUTLINE DEVELOPMENT PLAN COVER

FILE : 87-20-003_ODPCOVER
JUB PROJ. # : 87-20-003
DRAWN BY: ALM
DESIGN BY: ALM
CHECKED BY: ###
 ONE INCH AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 4/1/2021

SHEET NUMBER:

ODP-01

OUTLINE DEVELOPMENT PLAN
NORTH RIDGE

LOCATED ON THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 22, TOWNSHIP 5 NORTH, RANGE 68 WEST OF THE SIXTH
PRINCIPAL MERIDIAN, COUNTY OF LARIMER, AND STATE OF COLORADO

LEGEND	
	POTENTIAL FUTURE ACCESSES
	DEVELOPMENT PARCEL BOUNDARY (FOR GRAPHICAL PURPOSES ONLY)
	P/L PROPERTY BOUNDARY
	R/W RIGHT OF WAY
	JOHNSTOWN TOWN LIMITS

- NOTES:
- ADDITIONAL DESIGN REQUIREMENTS FOR COMMERCIAL DEVELOPMENT PER THE DESIGN GUIDELINES.
 - THE PLANNING DIRECTOR MAY APPROVE ADJUSTMENTS TO COMMERCIAL SETBACKS THAT MAY BE NECESSARY DUE TO PARCEL SIZE, CONFIGURATION, OR OTHER CONSTRAINT.

PLANNING AREA BOUNDARIES:

PLANNING AREA ACREAGE AND BOUNDARIES ARE PRELIMINARY AND SUBJECT TO CHANGE WITH DETAILED PLANNING. PLANNING ACREAGE MAY CHANGE UP TO 30% WITHOUT A MAJOR AMENDMENT TO THIS PUD DOCUMENT.

PLANNING AREA INDEX:

PLANNING AREA (PA)	APPROX. ACREAGE	ANTICIPATED USES	LOT COVERAGE
PA-A	±14.2	COMMERCIAL	70%
PA-B	±3.2	COMMERCIAL	60%
PA-C	±7.1	COMMERCIAL	50%
PA-D	±11.4	COMMERCIAL	50%
PA-E	±23.4	RESIDENTIAL	-

DENSITY:

ANTICIPATED RESIDENTIAL DENSITIES ARE SPECIFIED WITHIN EACH PARCEL. THE FINAL DENSITY SHALL BE DETERMINED AT THE TIME OF PLATTING. NO MINIMUM DENSITIES ARE REQUIRED FOR RESIDENTIAL PLANNING AREAS.

LAND USE SUMMARY:

LAND USE	ACRES	PERCENTAGE (NEAREST 1%)
COMMERCIAL	36.5	60
RESIDENTIAL	16.4	30
OPEN SPACE	7.1	10
TOTAL	60.0	100

DEVELOPMENT STANDARDS: COMMERCIAL

MAXIMUM HEIGHT	A: 130' B & C: 85' D: 50' ALL AREAS UP TO 150' W/ CONDITIONAL USE GRANT
LANDSCAPE REQUIREMENT	20% LANDSCAPING
BUILDING SETBACK FROM HIGHWAY	50'
BUILDING SETBACK FROM ARTERIAL	25'
BUILDING SETBACK FROM FRONTAGE ROAD	20'
PARKING SETBACK FROM ROW	20'

DEVELOPMENT STANDARDS: RESIDENTIAL

	SINGLE FAMILY DETACHED
MINIMUM LOT SIZE	1,400 SF
MAXIMUM HEIGHT	35'
FRONT SETBACK TO BUILDING	15' MIN.
FRONT SETBACK TO GARAGE	10' MIN.
FRONT SETBACK TO SIDE LOADED GARAGE	10' MIN.
SIDE YARD SETBACK	5' MIN.
REAR YARD SETBACK (FRONT LOADED)	5' MIN.
REAR YARD SETBACK (ALLEY LOADED)	5' MIN.
SIDE (CORNER) SETBACK	15' MIN.
BUILDING SEPARATION	PER FIRE CODE

- NOTES:
- ADDITIONAL DESIGN REQUIREMENTS FOR RESIDENTIAL DEVELOPMENT PER THE DESIGN GUIDELINES.
 - THE PLANNING DIRECTOR MAY APPROVE ADJUSTMENTS TO RESIDENTIAL SETBACKS THAT MAY BE NECESSARY DUE TO PARCEL SIZE, CONFIGURATION, OR OTHER CONSTRAINT.

OPEN SPACE, PARKS, & WALKS/TRAILS:

OPEN SPACE:

- 30% OF RESIDENTIAL ACREAGE IS REQUIRED TO BE OPEN SPACE.
- PARK SPACE WILL BE COUNTED TOWARDS OPEN SPACE REQUIREMENTS.
- OPEN SPACE INCLUDES STREETSCAPES OUTSIDE OF ROW, HARDSCAPES, PLAZAS, FOUNTAIN AREAS, PONDS, AND AREAS SUCH AS SIDEWALKS WITH BENCH SEATING.
- SIDEWALKS ARE REQUIRED TO BE 10' WIDE AND 6" DEEP REINFORCED CONCRETE ALONG ARTERIAL STREETS. DETACHED AND MEANDERING SIDEWALKS PROPOSED AS FEASIBLE.

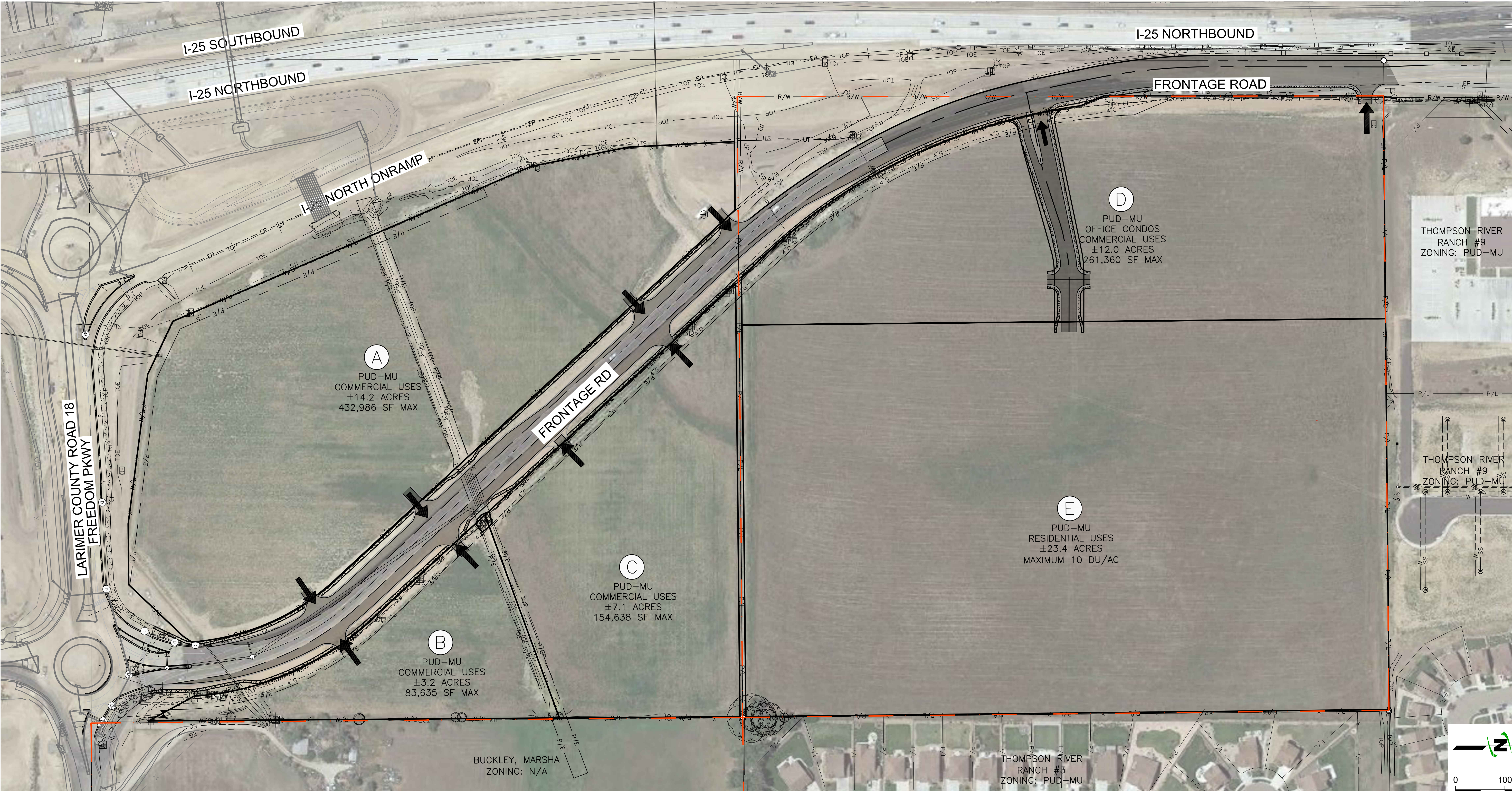
PARKS AND RECREATION:

- 10% OF RESIDENTIAL ACREAGE IS REQUIRED TO BE DESIGNATED AS LAND USE FOR PARKS AND RECREATION.
- PARKS MAY BE PRIVATELY OR PUBLICLY OWNED, TO BE DETERMINED AT THE TIME OF FINAL PLAT.
- ALL PARKS, NO MATTER IF OWNERSHIP IS PUBLIC OR PRIVATELY HELD, WILL BE ACCESSIBLE TO THE GENERAL PUBLIC, REGARDLESS OF RESIDENCY STATUS.

PARCEL DESIGN INTENT:

PARCEL A, B, C, AND D:
THE DESIGN INTENT FOR THE PLANNING AREAS A, B, C, AND D IS TO ALLOW FOR A WIDE RANGE OF COMMERCIAL DEVELOPMENT USES, WHICH COULD INCLUDE VARIOUS OFFICE, RETAIL, PRIVATE GARAGE CONDOMINIUMS, HOTEL DEVELOPMENT OR SIMILAR USES.

PARCEL E:
THE DESIGN INTENT FOR PLANNING AREA E IS TO ALLOW FOR RESIDENTIAL DEVELOPMENT. RESIDENTIAL DEVELOPMENT COULD INCLUDE SINGLE-FAMILY, MULTI-FAMILY USES SUCH AS CONDOMINIUMS OR APARTMENTS, OR MIXED USE DEVELOPMENT.



JUB
J-U-B ENGINEERS, INC.
J-U-B ENGINEERS, INC.
4745 Boardwalk Drive
Building D, Suite 200
Fort Collins, CO 80525
Phone: 970.377.3602
www.jub.com

FINAL EXHIBIT	
REUSE OF DRAWINGS	JUB SHALL RETAIN ALL COMMON LAW, STATUTORY, COPYRIGHT AND OTHER RIGHTS IN THIS EXHIBIT. ANY REUSE WITHOUT WRITTEN CONSENT BY JUB WILL BE AT CLIENT'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO JUB.
REVISION	
NO	DESCRIPTION
BY	DATE

NORTH RIDGE DEVELOPEMNT
JOHNSTOWN
NORTH RIDGE OUTLINE DEVELOPMENT PLAN

FILE : 87-20-003 ODP
JUB PROJ. # : 87-20-003
DRAWN BY: ALM
DESIGN BY: ALM
CHECKED BY: ###
ONE INCH
AT FULL SIZE IF NOT ONE
INCH SCALE ACCORDINGLY
LAST UPDATED: 5/17/2021
SHEET NUMBER:
ODP-02

LOCATED ON THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 22, TOWNSHIP 5 NORTH, RANGE 68 WEST
OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF LARIMER, AND STATE OF COLORADO

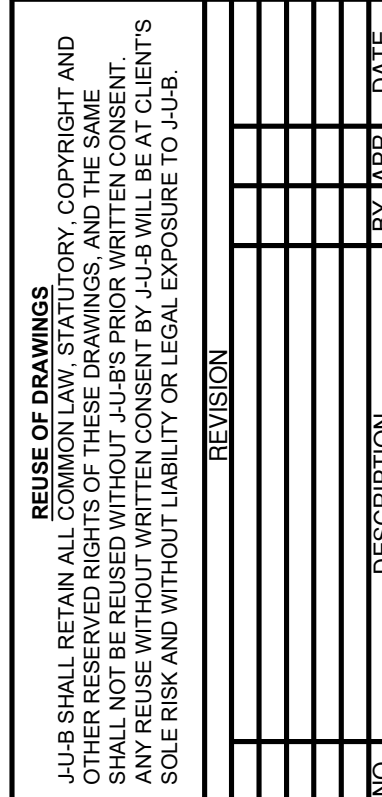
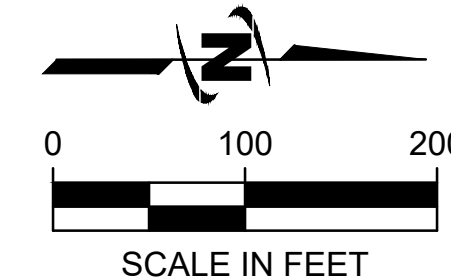
	4900	EXISTING MAJOR CONTOUR
	4902	EXISTING MINOR CONTOUR
		EXISTING STORM PIPE
		Basin Boundary: Onsite
		Basin Boundary: Offsite
		Basin Boundary: Property Line
		Basin ID
		C-MINOR AREA
		C-MAJOR
		Design Point
		Direct Flow Arrow
		Overland Flow Arrow

Basin	Total Area	Composite	Composite	Q2	Q100
	acres	"C2"	"C100"	cfs	cfs
P1-N	9.84	0.64	0.79	13.93	49.36
P-1S	11.77	0.64	0.79	14.93	48.00
P-2S	4.15	0.77	0.87	23.35	75.32
P-2N	7.86	0.77	0.87	14.93	48.00
P-3	12.84	0.76	0.86	23.35	75.32
P-4	23.48	0.64	0.80	31.67	112.01
Total:	69.94				
Combined Basins to Design Point (DP)					
P2	33.62	0.73	0.82	89.50	173.28

P2 is combined basins P1-N, P1-S, P2-N and P2-S.

PROPOSED PONDS	100-YR RELEASE RATE (cfs)	WQCV (acre-ft)	100-YR VOLUME (acre-ft)	TOTAL VOLUME (acre-ft)	APPROX SURFACE AREA (area)
P1-N	9.84	0.64	0.79	13.93	49.36
P-1S	11.77	0.64	0.79	14.93	48.00
P-2S	4.15	0.77	0.87	23.35	75.32
P-2N	7.86	0.77	0.87	14.93	48.00
P-3	12.84	0.76	0.86	23.35	75.32
P-4	23.48	0.64	0.80	31.67	112.01

TYPE B SOIL TYPE.



NORTH RIDGE DEVELOPEMNT
JOHNSTOWN

NORTH RIDGE MASTER GRADING AND DRAINAGE PLAN

FILE : 87-20-003 MASTERGRADING PLAN
JUB PROJ. # : 87-20-003
DRAWN BY: ALM
DESIGN BY: ALM
CHECKED BY: ###
 ONE INCH AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 4/6/2004

SHEET NUMBER:

ODP-03

LOCATED ON THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 22, TOWNSHIP 5 NORTH, RANGE 68 WEST
OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF LARIMER, AND STATE OF COLORADO

ESTIMATED WASTEWATER FLOW:

WASTEWATER CALCULATIONS AND ASSUMPTIONS:

RESIDENTIAL AVERAGE DAILY FLOW (ADF) = 220 GPD/SFE*

*INCLUDES ALLOWANCE FOR 1/1

COMERCIAL AVERAGE FLOW = 1,550 GPD/ACRE

COMMERCIAL PEAKING FACTOR

$$\text{RESIDENTIAL PEAKING FACTOR} = 2.6 * Q_A^{-0.16}$$

Q_A = AVERAGE FLOW IN CFS

Q_A = AVERAGE FLOW IN CFS

ESTIMATED WATER DEMAND:

WATER CALCULATIONS AND ASSUMPTIONS:

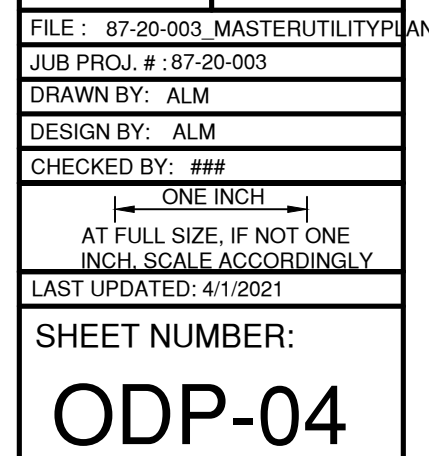
RESIDENTIAL AVERAGE DAY FLOW (ADF) = 150 GPCD (450 GPD/SFE)

COMMERCIAL AVERAGE DAY FLOW (ADF) = 1,700 GPD/ACRE

FIRE FLOW AVAILABILITY

MAXIMUM DAY FLOW (MDF) = 2 x ADF

PEAK HOUR FLOW

$$= 1.5 \times \text{MDF}$$




Town of Johnstown

PLANNING & ZONING COMMISSION AGENDA MEMORANDUM

ITEM:	5
DESCRIPTION:	Public Hearing for North Ridge Outline Development Plan for approximately 60 acres of land
LOCATION:	Portion of Southeast ¼, Section 22, Township 5 North, Range 68 West
APPLICANT:	Ridge II ManageCo, LLC; Caliber Services, LLC; Caliber Companies, LLC; CaliberCos Inc.
STAFF:	Darryll Wolnik, Planner II
HEARING DATE:	June 9, 2021

BACKGROUND & SUMMARY

The Applicant, requests approval of an Outline Development Plan (ODP) that covers approximately 60 acres of land. The property is located in the Southeast ¼ of Section 22, Township 5 North, Range 68 West. More specifically, it is located along the Frontage Road, North of County Road 18 / Freedom Pkwy. An additional agenda item – North Ridge Annexation– considers the annexation and establishment of zoning that will apply.

The subject property is presently zoning FA – Farming in unincorporated Larimer County. It is bordered on all sides by incorporated areas of Johnstown, though there are portions of unincorporated Larimer County slightly beyond adjacent parcels. Zoning in all surrounding parcels is PUD-MU. There is land presently in unincorporated Larimer County just to the Southeast that is zoned FA.

Surrounding land uses are as follows. Thompson River Ranch, a single-family residential development, is adjacent to the North and East. I-25 and the Frontage Rd. run North-South on the West side of this property, with the Mountain View Farms PUD on the other side of I-25. That PUD is currently used for agricultural purposes. To the South is undeveloped land that is in the review process as part of The Ridge development. Properties to the Southeast, beyond The Ridge and Thompson River Ranch, are used for agricultural and large-lot residential purposes.

The Community That Cares

www.TownofJohnstown.com

P: 970.587.4664 | 450 S. Parish Ave, Johnstown CO | F: 970.587.0141

HISTORY

Historically, this property has been used for farming. There was a farmhouse and active farm on the property until 2018-2019, when the frontage road was re-routed. The farmhouse was demolished at that time to make way for the re-routed frontage road, which passed directly over the site of the former home. At some point, CDOT took part of the property for said roadway improvements and realignment, resulting in the current parcel.

Based on aerial imagery, it appears agricultural operations ceased between 2016 and 2018, and the fields were left unutilized.

ATTACHMENTS

- 1 - Vicinity Map
- 2 - Application
- 3 - ODP

NOTICE

Notice for the Planning & Zoning Commission hearing was published in the local paper of widest circulation, the Johnstown Breeze, on Thursday, July 13, 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 annexation and zoning.

On Monday, June 7, 2021, Town Council passed Resolution 2021-18, finding the proposed annexation in substantial compliance with Colorado Revised Statutes and the Colorado Constitution. This resolution set the public hearing date for the proposed annexation as Wednesday, July 7, 2021. This ODP will be considered at that time as well.

Notice for the November 2nd Town Council hearing was published in the local newspaper of widest circulation, the Johnstown Breeze, beginning on Thursday, June 10, 2021. This notice provides the date, time, and location of the Town Council hearing, as well as a description of the project. This notice, along with a copy of Resolution 2021-18, is published in the Johnstown Breeze for four (4) consecutive weeks. Notices will be mailed to all property owners within 500 feet of the property in question, including a map of the proposed Annexation and ODP.

NEIGHBORHOOD MEETING

An online neighborhood meeting was held on Tuesday, September 27, 2021. Notice for said meeting was mailed to all property owners within 500 feet of the proposed annexation advertising the meeting time and place. Town Staff and the Applicants team were present and no resident attended.

The Community That Cares

www.TownofJohnstown.com

P: 970.587.4664 | 450 S. Parish Ave, Johnstown CO | F: 970.587.0141

ANALYSIS

Johnstown Comprehensive Plan Alignment

P.2-5: The intersection of County Road 18 and I-25 is projected as a “Gateway Center”, meaning this is not only a major entryway in Town, but also a center of development. In addition, this area is “Commercial Mixed Use” and is at the crossroads of a major arterial, a minor arterial, and I-25. As such, the density and intensity of uses in this area is consistent with the land use map.

Goal CF-1: New development achieves the community’s goals and is consistent with the Town’s vision – Contiguous, compact pattern.

This proposal would create areas for medium-density housing. Additionally, it makes use of the “keyhole” property to its best and highest use. This land would otherwise be left undeveloped and vacant between the Frontage Road and I-25.

Goal CF-2: Beautiful Town gateways and entries at major intersections – gateways.

The proposed annexation and ODP sits at the intersection of County Road 18 and I-25, one of The Town’s most important and visible gateways. Development as proposed at this intersection would increase visibility and draw people into Johnstown.

Goal CC-1: Walkable, mixed-use economic centers – Hierarchy of mixed-use centers.

Proposed ODP shows a mix of medium-density single-family housing and commercial uses.

Zoning & Development Standards

The current zoning for the property is FA – Farming in Larimer County. There are no conditional uses or uses by special review for the property.

The proposed ODP would allow for a mix of uses across the site, and is split into five planning areas. Planning Area A is located in the “keyhole” property, surrounded by I-25 ROW to the West, County Road 18 to the North, and the Frontage Rd. to the East and South. This planning area is 14.2 acres and allows for commercial uses. Lot coverage for this area is allowed up to 70%, due to its proximity to I-25, County Road 18, and the Frontage Rd., all of which are some type of arterial roadway. Planning Area A may have buildings of up to 130’ in height, with the potential for up to 150’ with a conditional use grant.

Planning Area B is a triangle-shaped parcel to the East of Planning Area A, bounded by County Road 18 and the Frontage Rd. It is 3.2 acres in size and allows for commercial uses. Uses may occupy up to 60% of the lot, and buildings may be up to 85’ in high as-of-right, and up to 150’ with a conditional use grant. Planning Area C is just to the south of Planning Area B, and is 7.1 acres in size. It has the same building height guidelines, but may only have 50% lot coverage. This is because of its adjacency to residential

uses, and the need to reduce the intensity of use the closer you get to single-family residential to the South and East.

At 12 acres, Planning Area D is Southwest of Planning Area C, East-adjacent to the Frontage Rd. Commercial uses, specifically office condos, will be allowed in this area. Because of its proximity to both existing and proposed single-family residential to the East, buildings may only be up to 50' in height, though the ability to go as high as 150' is available through a conditional use grant.

Planning Areas A thru D must all adhere to the same landscape and setback standards. While these will be further refined in eventual design guidelines, basic guidelines are provided within the ODP. Buildings must be 50' from I-25, 25' from County Road 18, and 20' from the Frontage Rd. Parking lots shall be at least 20' from the ROW line. All lots must provide at least 20% landscape area. While lot coverage allowances may seem significant, these landscape requirements, along with provision of necessary parking, will effectively limit the size of buildings and the resulting lot coverage. It is possible landscape guidelines could be met and Planning Area A could have 70% lot coverage, but this would require use of parking structures, which would be in line with the projected density and intensity of uses in this area.

Planning Area E is located on the Southeast portion of this proposed development. Directly adjacent to Thompson River Ranch, this 23.4-acre area shall be residential uses at a maximum of 10 dwelling units/acre. The provided guidelines are a minimum representation, and may be supplemented through expanded design guidelines. Minimum lot sizes shall be 1,400 square feet, with a maximum height of 35'. Setbacks on the front are 15' to the home and 10' to the garage; side setbacks are 5', and rear setbacks are 5'.

The ODP also addresses the ability to transfer area and densities between planning areas, up to 30%, with maximum DU/Ac assigned to residential areas, as stated above.

Infrastructure

There is currently no Town water service to the property. Applicant proposes looping the existing water line in Thompson River Ranch through this property. It would then tie into the proposed water lines in the Ridge 3 development to the south.

Sanitary sewer for the site would be handled by the Low Point Waste Water Treatment Plant (WWTP). Connections for sanitary sewer will be made at two potential locations. One connection would be to the line in Thompson River Ranch, while the other would be on the Johnson's Corner interceptor along County Road 18. The exact routing is still under consideration, but construction of infrastructure and conveyance of wastewater is absolutely possible.

Major transportation infrastructure is already in place for this annexation and Outline Development Plan. The Frontage Road is slated as a minor arterial road in the Johnstown Master Transportation Plan. The required ROW has previously been dedicated, so there is no concern in that regard. Applicant will need to work with The Town and CDOT regarding access onto the Frontage Road. The Town will expect appropriate roadway improvements be completed at time of development.

Staff Concerns

Staff has no concerns which would preclude the proposed Outline Development Plan from being approved. However, staff has concerns that applicant should bear in mind when moving into development planning.

The ODP shows a significant number of conceptual access points. Some of these access points are too close to one another, while others may be too close to the roundabout at County Road 18. CDOT still controls the Frontage Road, and has ultimate say in whether or not to allow an access point. Staff would encourage the applicant to begin planning with CDOT for these intersections as soon as possible. In addition, there is a significant hill near the midpoint of the Frontage Road as it runs within this ODP. Applicant will have significant challenges as it relates to safe sight distances and clearances because of this hill.

Connectivity is another issue that the applicant should be prepared to deal with. Current conceptual renderings show road connection between Planning Area E and Thompson River Ranch Filing 9. This connection is very important to the overall connectivity of the area. Staff would suggest applicant find other ways to ensure Planning Areas B thru E are interconnected not just via car, but also for multimodal transportation, IE bicycle, walking. Care should also be given to how Planning Area A integrates in this regard, as its disconnected nature has the potential to create a sort of outlier. Appropriate pedestrian connections are imperative, as this could save car trips if residents from Thompson River Ranch or the future Ridge development to the south can walk or bike safely and efficiently.

RECOMMENDED PLANNING AND ZONING COMMISSION FINDINGS AND MOTIONS

Item #4 Zoning: North Ridge ODP

It is recommended that Planning and Zoning Commission send a positive recommendation to Town Council that the North Ridge ODP be approved based upon the following findings:

1. The proposed ODP is consistent with the Town of Johnstown Comprehensive Plan.
2. The proposed ODP and accompanying uses are the best use for the area, namely commercial uses at the major intersections.

Motion

Based on the application received, associated submittal materials, and the preceding analysis, the Planning & Zoning Commission finds that the request for PUD-MU zoning for the North Ridge 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 request for PUD-MU zoning for the North Ridge ODP based upon the 2 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-MU zoning for the North Ridge ODP based upon the following..."

Planner:



Darryll Wolnik

Planner II

Reviewed by:



Kim Meyer

Planning & Development Director

File Name: S:\PLANNING\2020 Land Use Projects\ANX20-004 North Ridge Annexation\PZC North Ridge ODP Staff Report 06 09 21.docx

**TOWN OF JOHNSTOWN, COLORADO
ORDINANCE NO. 2021-206**

**APPROVING P.U.D. OUTLINE DEVELOPMENT PLAN FOR
NORTH RIDGE LOCATED IN THE SOUTHEAST QUARTER OF
SECTION 22, TOWNSHIP 5 NORTH, RANGE 68 WEST, COUNTY
OF LARIMER, STATE OF COLORADO, CONSISTING OF
APPROXIMATELY 60 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, Ridge II HoldCo, LLC, a Delaware limited liability company, submitted an application to the Town for approval of a P.U.D. Outline Development Plan for a subdivision known as North Ridge, located in the Southeast Quarter of Section 22, Township 5 North, Range 68 West of the 6th Principal Meridian, Town of Johnstown, County of Larimer, State of Colorado, consisting of approximately 60 acres; and

WHEREAS, on June 9, 2021, the Planning and Zoning Commission held a public hearing and recommended approval of the P.U.D. Outline Development Plan for North Ridge; and

WHEREAS, on July 19, 2021, and, as continued, on August 16, 2021, the Town Council held a public hearing concerning approval of the P.U.D. Outline Development Plan for North 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 for North 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 for North Ridge subject to modifications, if any, provided by Town Council to Town staff during the public hearing.

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 for North Ridge, located in the Southeast Quarter of Section 22, Township 5 North, Range 68 West of the 6th Principal Meridian, Town of Johnstown, County of Larimer, State of Colorado, consisting of approximately 60 acres, attached hereto and incorporated herein by reference as Exhibit A, as amended, if at all, is hereby approved subject to the following condition:

1. The P.U.D. Outline Development Plan for North Ridge shall not be recorded until it is in the form finally approved by Town staff based on the direction of Town Council provided to Town staff during the public hearing.

Section 2. Supersede and Replace. The P.U.D. Outline Development Plan for North Ridge adopted herein shall supersede and replace the outline development plan, if any, previously approved with respect to the 402 Exchange Business Park annexation, an annexation approved by the Town on or about December 15, 2005.

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 ____ day of _____, 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



Town of Johnstown

TOWN COUNCIL AGENDA COMMUNICATIONS

AGENDA DATE: August 16, 2021

SUBJECT: Public Hearing – First Reading Ordinance 2021-207 Amending Article IV of Chapter 7 of the Municipal Code Concerning Trash Collection

ACTION PROPOSED: Consider First Reading of Ordinance 2021-207

ATTACHMENTS: 1. Ordinance 2021-207
2. Current Municipal Code Section

PRESENTED BY: Matt LeCerf, Town Manager

AGENDA ITEM DESCRIPTION:

In May 2021, the Town issued an RFP for trash services due to the pending expiration of the current contract with Waste Management which will end September 1, 2021. The RFP and proposed contract which was awarded to Waste Connections on July 7, 2021 provides for Waste Connection to be the single source trash provider for all single family and duplex residents in the community.

Some of the benefits of this single source service include:

- Competitive pricing for our community to reduce individual costs.
- Combination of solid waste and recycling service for residents.
- Reduced impact on our Town's transportation infrastructure.

The current Town regulations provide for residents to opt out of the Town's services for solid waste collection. The impetus for this flexibility is unclear, but it appears to mitigate the value the residents may receive and the value the Town may receive by reducing costs on infrastructure maintenance. Accordingly, presented for you this evening is a proposed modification to Article IV of Chapter 7 of the Johnstown Municipal Code Concerning Trash Collection. The proposed revisions to the ordinance would require residents and those multi-unit structures at the Town's discretion to subscribe to the single source trash service provided by the Town. In general, those multi-unit buildings would be in applications where residents have garages or a method to effectively screen their trash and recycling receptacles from sight. Those

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multi-units that have facilities that can accommodate dumpsters for example would not be included into the single source service.

The Town currently has 104 customers in the community that have opted out of the single source service and this represents approximately 2% of the total residential customer base. The Town has not yet signed the contract for the solid waste service, but needs to do this in short order to ensure service for the residential base starting in September.

Other changes have been made to update the ordinance and are included in the documents attached. An original of the current form for Article IV of Chapter 7 is included to note the differences in form.

LEGAL ADVICE:

The ordinance was drafted by the Town Attorney in consultation with Staff.

FINANCIAL ADVICE:

Funds have been obligated for the work in FY2021.

RECOMMENDED ACTION: Approve Ordinance 2021-207 upon first reading.

SUGGESTED MOTIONS:

For Approval: I move to approve Ordinance No. 2021-207, an ordinance Amending Article IV of Chapter 7 of the Municipal Code Concerning Trash Collection upon first reading.

For Denial: I move to deny Ordinance No. 2021-207, an ordinance Amending Article IV of Chapter 7 of the Municipal Code Concerning Trash Collection upon first reading.

Reviewed and Approved for Presentation,



Town Manager

TOWN OF JOHNSTOWN, COLORADO

ORDINANCE NO. 2021-207

AN ORDINANCE AMENDING 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, among other updates, provide that, with limited exception, the Town is the exclusive provider of residential waste collection services and that the Town will be offering recycling 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 shall be deleted and replaced in full with the following:

ARTICLE IV – Waste Collection

Sec. 7-61. Town residential refuse collection services.

- (a) Except as otherwise provided in this Article, the Town shall provide, by contract with a third party, residential refuse collection services for all residents in the Town.
- (b) 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.

- (c) Residents of the Town residing in single-family detached homes and duplexes shall be required to utilize the Town-provided refuse collection services. The Town, in its discretion, by and through the Town Manager, may require other residential customers in the Town to utilize the Town-provided refuse collection services and may permit residential customers not otherwise required and non-residential customers to utilize the Town-provided refuse collection services.

Sec. 7-62. Town residential recycling collection services.

- (a) Except as otherwise provided in this Article, the Town shall provide, by contract with a third party, residential recycling collection services for residents in the Town. The residential recycling collection services shall be available to all customers utilizing the Town-provided refuse collection services.
- (b) 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.
- (c) Residents of the Town 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 said service.

Sec. 7-63. Premises excluded from refuse and recycling collection services.

Except as otherwise required or permitted by the Town Manager, the Town shall not provide residential refuse or recycling collection services to the following premises:

- (a) Multifamily residences containing three or more units; and
- (b) Non-residential customers, including commercial and industrial establishments.

Sec. 7-64. Specifications for containers.

- (a) All refuse and recycling materials shall be placed in containers provided 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.
- (b) The containers 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.
- (c) On the day of collection, as established by the Town, the customer shall place the container in a readily accessible location adjacent to the residential or non-residential unit for handling by the Town's third-party service provider.
- (d) The containers shall not be overloaded by weight or volume.
- (e) In addition to the foregoing, the Town's customers shall 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.

Sec. 7-65. Persons served by water taps to receive service and pay the costs and billing.

- (a) All customers, residential and non-residential, 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) The assessments for refuse and recycling collection services shall be determined by the individual water tap billings, except in the instance where more than one (1) single family is living in the unit served by one (1) water tap; then and in that event, 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 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 Home Rule Charter of the Town of Johnstown, Colorado. 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: _____
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

CURRENT CODE**ARTICLE IV Waste Collection****Sec. 7-61. Collection; duty of Town to contract with third parties.**

- (a) The Town shall provide, by contract with third parties, for the collection and removal of garbage, ashes, trash and other waste material of every character collected or accumulated within the Town, except tree limbs (unless cut in three [3] to four [4] foot lengths and bundled), and other items of unusual size, hot ashes, explosive materials, radioactive materials and other similar types of hazardous material within the corporate limits of the Town.
- (b) If any person or business desires to cancel the services of the Town as provided by the third party, then and in that event the person or business shall notify the Town Clerk, in writing, within ten (10) days before the first day of the next month of his, her or its desire to cancel said service. Said person or business using a private party for his or her trash removal shall still be bound by all other parts of the ordinances of the Town concerning or pertaining to trash removal.

(Prior code 13-20)

Sec. 7-62. Persons served by water taps to receive service and pay the costs and billing.

- (a) All persons and businesses receiving collection and removal for garbage, ashes, trash and other waste materials shall be billed and shall pay said charges monthly with their water bill in the amount set forth by resolution of the Town Council in the Town Fee Schedule.
- (b) The assessments for trash collection shall be determined by the individual water tap billings, except in the instance where more than one (1) single family is living in the unit served by one (1) water tap; then and in that event, an additional charge shall be made for each single-family unit.
- (c) Each trailer or mobile unit served with water facilities by the Town shall be classified an individual single-family unit, except a trailer or mobile home park operation, as a whole, may deal directly with the third party on a commercial basis for the trash service. Notification of this arrangement must be made to the Town Clerk per Section 7-61(b).

(Prior code 13-21; Ord. No. 2020-191, §15, 12-21-2020)

Sec. 7-63. Specifications for containers.

- (a) All ashes, trash, garbage and other waste materials shall be placed in suitable and approved receptacles or containers. Said receptacles and containers shall be furnished by each resident or business establishment at the expense of each resident or business establishment.
- (b) Waste materials shall not include refrigerators, washers, dryers and other large or bulky items.
- (c) The receptacles or containers to be provided by each resident or business establishment shall be placed by said resident, occupant or business establishment in a readily accessible location for handling by the contractor of the Town, and each receptacle or container shall be limited to not more than thirty (30) gallons in volume capacity and not more than seventy (70) pounds in weight per container. Each business

establishment shall be further limited to no more than three (3) thirty-gallon (30) containers with weight not to exceed seventy (70) pounds per container per week.

(Prior code 13-22)

Sec. 7-64. Lien and collection of unpaid bills; cessation of service.

- (a) The assessment provided in Section 7-62 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 Clerk may certify the assessments to the County Treasurer who shall collect the assessments, together with a ten percent (10%) penalty for the cost of collection as provided by law.
- (b) In addition thereto, the Town may proceed to collect any unpaid assessments in any other manner allowed by law, including the cessation of the collection and removal of garbage, ashes, trash and other waste material service.

(Prior code 13-24)

Secs. 7-65—7-80. Reserved.



Town of Johnstown

TOWN COUNCIL AGENDA COMMUNICATIONS

AGENDA DATE: August 16, 2021
SUBJECT: Resolution 2021-26: Colorado Main Street Program Grant
ACTION PROPOSED: Approve Resolution 2021-26
ATTACHMENTS: Resolution 2021-26: Authorizing the Main Street Project in Johnstown
PRESENTED BY: Sarah Crosthwaite, Economic Development Manager

AGENDA ITEM DESCRIPTION:

Enclosed for review and consideration is Resolution 2021-26 which would establish the Town's support to pursue the Main Street Open for Business Façade Improvements and Energy Efficiency Grant Program through Colorado Main Street Program. Funds for this grant program were allocated by SB21-252 to provide an incentive program for local business owners to improve the energy efficiency and/or aesthetics of downtown commercial buildings. The Town of Johnstown is eligible to apply for the funds with a submittal date of August 23, 2021. If awarded, the Town will be responsible in administering the funds to eligible businesses located within the downtown corridor. The Town has already begun preliminary work to identify buildings in the corridor that can benefit from façade and energy efficiency improvements along with architectural and construction costs which ensures our readiness to execute this program should the funds be awarded.

The grant application being prepared by the Town proposes a grant request of \$1,000,000 from the program which will require the Town to provide a 20% match equal to \$200,000, if awarded the grant. This investment would enable considerable improvements to the downtown and contribute to the enhancement of placemaking.

LEGAL ADVICE:

N/A

FINANCIAL ADVICE:

A 20% (\$200,000) cash match will be required by the Town.

RECOMMENDED ACTION:

Adopt Resolution 2021-26 as presented.

SUGGESTED MOTIONS:

For Approval

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I move to adopt Resolution 2021-26, A Resolution Authorizing the Main Street Project in Johnstown.

For Denial

I move to deny adopting Resolution 2021-26.

Reviewed and Approved for Presentation,



Town Manager

**TOWN OF JOHNSTOWN, COLORADO
RESOLUTION NO. 2021-26**

Authorizing the Main Street Project in Johnstown

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 grant program through the Colorado Main Street program is the Main Street Open for Business (MSOB) Facade Improvements and Energy Efficiency Program for non-chain commercial building owners in the Main Street Johnstown District; and

WHEREAS, the Town has administered grants up to a total of \$1 million dollars for each municipality with Economic Development/Main Street managing the grants.

WHEREAS, A 20% cash match is required of applicants.

WHEREAS, The MSOB grant opens for submittals by applicants on August 23, 2021; and

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

The Town Council of the Town of Johnstown strongly supports the application and shall appropriate matching funds for a grant.

If the grant is awarded, the Town Council of the Town of Johnstown strongly supports the completion of the project.

The Town Council of the Town of Johnstown authorizes the expenditure of funds necessary to meet the terms and obligations of any Grant awarded.

If the grant is awarded, the Town Council of the Town of Johnstown hereby authorizes the Town Manager to sign the grant agreement with DOLA.

If the grant is awarded, the Town shall administer the grant.

PASSED, SIGNED, APPROVED, AND ADOPTED THIS ____ day of August, 2021.

ATTEST:

TOWN OF JOHNSTOWN, COLORADO

By: _____
Diana Seele, Town Clerk

By: _____
Gary Lebsack, Mayor



Town of Johnstown

TOWN COUNCIL AGENDA COMMUNICATIONS

AGENDA DATE: August 16, 2021

SUBJECT: Award Design Build services for the North 2nd Street Widening at Hillsborough Ditch

ACTION PROPOSED: Consider Awarding the Design Build Contract to Connell Resources, Inc.

ATTACHMENTS: 1. Connell Budget for Cost
2. DBIA Contract

PRESENTED BY: Marco Carani, Public Works Director

AGENDA ITEM DESCRIPTION:

Enclosed for your review and consideration is a request to hire a Contractor for the widening of the North 2nd St. Bridge over the Hillsborough Ditch.

The Town owns and maintains the bridge located on North 2nd between Columbine and Canal St. This bridge is built on metal girders that are showing signs of deterioration. The main reason for this replacement is the current alignment of the structure which creates a bottle neck that is dangerous for vehicle traffic and pedestrians. The bridge width measures 22ft edge of asphalt to edge of asphalt with the section of roadway to the east being 30ft wide and the section to the west being 40ft wide. The project will not be able to match the street alignment flowline to flowline on the south side, but will be able to widen the bridge to facilitate a better transition from east to west.

Staff reached out to the following Engineering firms; Galloway & Company, Inc., J-U-B Engineers, Inc. and RH&S, Inc. J-U-B Engineers, Inc. declined to bid on the project due to limited staffing resources, RH&S, Inc. provided a design proposal cost of \$332,631.57 with an estimated construction cost of \$623,700.00, and Galloway provided a design proposal cost of \$140,600 for design. After receiving design proposals, Staff contacted Connell Resources, Inc. to evaluate the bridge and to provide a construction cost to do a design-build contract with Galloway for the replacement of the bridge in order to expedite the project timeline. Connell Resources, Inc. provided a construction cost of \$700,033.75 to perform the construction with total design build contract with Galloway as the design engineer in the amount of \$840,633.75. The Town budgeted one million dollars for this project for the fiscal year 2021. With the coordination efforts to create a partnership between Connell Resources, Inc and Galloway & Company, Inc. on a design-build contract, Staff was able to bring the project cost in for \$159,366.25 under budget.

The project construction is scheduled to start November of 2021 in order to perform construction outside the season of operation for the Hillsborough Ditch. Scope of work involves design and replacement of the existing structure and adjustment of the alignment of North 2nd Street which includes the installation of 60ft of box culverts and an inlet on the north west side of bridge to

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capture storm water and take it west to the existing storm drain. The project will also be installing ADA compatible sidewalks and ramps and include replacement of approximately 50ft of asphalt on either side of bridge to provide a smooth road transition. North 2nd will be closed during construction and Staff will communicate closures with the School District and surrounding residents. Detours will be in place to help traffic around the construction site.

LEGAL ADVICE:

A Design Build contract was purchased from the Design Build Institute of America (DBIA) per the recommendation of the Town Attorney based on prior use by the Town. The contract is attached for reference.

FINANCIAL ADVICE:

\$1,000,000 was budgeted in FY 2021. Funds are available to permit this project to move forward

RECOMMENDED ACTION: Approval of the Design Build Contract to Galloway and Connell Construction

SUGGESTED MOTIONS:

For Approval: Staff recommends the approval of the design build contract for the North 2nd Street Widening at Hillsborough Ditch to Connell Resources, Inc. with Galloway & Company, Inc., as their design sub-contractor and authorize the Town Manager to approve additional funds for the project in an amount not to exceed the \$840,633.75 + a 10% contingency budgeted for the project.

For Denial:

Staff recommends that we deny the award as presented and solicit formal bids again.

Reviewed and Approved for Presentation:



Town Manager

Connell Resources, Inc.
7785 Highland Meadows Pkwy, #100
Fort Collins, CO 80528
Phone: (970) 223-3151
Fax: (970) 223-3191

CONNELL

Item #11.

Estimator: Bill Anderson

BUDGET FOR COST

Date: 8/3/2021

Submitted To: Town Of Johnstown	Budget Title: North 2nd Street Over Hillsborough Ditch Bridge Replacement
Address: 450 S Parish Ave Johnstown, CO 80534	Budget Number:
Contact: Marco Carani	Project Location:
Phone: 970-587-4664	Project City, State: Johnstown, CO
Fax: 970-587-0141	Engineer/Architect:

We have prepared for your information the following items for budget evaluation purposes for the referenced project. This budget includes conceptual quantities, resource costs, scope-of-work and schedules and therefore may not completely represent all items of work or cost ultimately necessary for completion of the project. This budget was prepared using reasonable skill and judgment, but is not an offer to perform the work described.

Item #	Item Description	Estimated Quantity	Unit	Unit Price	Total Price
A. General Conditions					
GC.01	Mobilization / Site Management	1.00	LS	\$54,500.00	\$54,500.00
GC.02	Construction Surveying Allowance	1.00	LS	\$11,300.00	\$11,300.00
GC.03	Geotechnical Testing Allowance	1.00	LS	\$11,300.00	\$11,300.00
GC.03	Project Design Allowance - Galloway	1.00	LS	\$158,900.00	\$158,900.00
GC.03	Hillsborough Ditch Permits/Fees Allowance	1.00	LS	\$22,600.00	\$22,600.00
GC.04	Pothole Existing Utilities	32.00	EACH	\$255.00	\$8,160.00
GC.05	Project Contingency	830,000.00	DLR	\$0.06	\$49,800.00
GC.06	Bond	1.00	LS	\$6,080.00	\$6,080.00
GC.07	Ditch Diversion/Dewatering	2.00	WK	\$6,040.00	\$12,080.00
Total Price for above A. General Conditions Items:					\$334,720.00
B. Removals					
RMV.01	Sawcut Asphalt 6"	140.00	LF	\$1.40	\$196.00
RMV.02	Remove Asphalt With Hoe	835.00	SY	\$11.20	\$9,352.00
RMV.03	Remove Concrete Flatwork 6"	2,020.00	SF	\$2.05	\$4,141.00
RMV.04	Remove Curb And Gutter	142.00	LF	\$11.50	\$1,633.00
RMV.05	Remove Bridge	1.00	EACH	\$14,300.00	\$14,300.00
Total Price for above B. Removals Items:					\$29,622.00
C. Erosion Control					
EC.01	Gravel Inlet Protection	2.00	EACH	\$400.00	\$800.00
EC.02	Concrete Washout	1.00	EACH	\$1,425.00	\$1,425.00
EC.03	Erosion Log (9" Diameter)	120.00	LF	\$5.50	\$660.00
EC.04	Street Sweeping	16.00	HR	\$170.00	\$2,720.00
EC.05	Seed And Mulch (Temporary)	1.00	ACRE	\$1,130.00	\$1,130.00
Total Price for above C. Erosion Control Items:					\$6,735.00
D. Earthwork					
EW.01	Unclassified Excavation W/ 400 Hoe	300.00	CY	\$28.00	\$8,400.00
EW.02	Muck Excavation / Replace 2 Ft Under Box Culvert	135.00	CY	\$135.00	\$18,225.00
EW.03	Structure Excavation Wing Walls	4.00	EACH	\$925.00	\$3,700.00
EW.04	Structure Backfill Class 1- Box Culvert	360.00	CY	\$67.00	\$24,120.00
EW.05	Structure Backfill Class 2 - Wing Walls	100.00	CY	\$28.10	\$2,810.00
EW.06	Subgrade Preparation (+/- 0.1 Ft) Asphalt Pavement	875.00	SY	\$6.00	\$5,250.00
EW.07	Fine Grade Curb And Gutter	315.00	LF	\$14.00	\$4,410.00
EW.08	Fine Grade Concrete Pan	945.00	SF	\$3.00	\$2,835.00
EW.09	Fine Grade Concrete Sidewalks	1,145.00	SF	\$2.50	\$2,862.50
EW.10	Finish Grading	1.00	LS	\$4,650.00	\$4,650.00
Total Price for above D. Earthwork Items:					\$77,262.50
F. Storm Drain					
SD.01	Precast Box Culvert 20' X 5'	60.00	LF	\$2,800.00	\$168,000.00

Item #	Item Description	Estimated Quantity	Unit	Unit Price	Total Price
SD.02	18" RCP Storm Drain	60.00	LF	\$100.00	\$6,000.00
SD.03	Inlet Type 13 Combo	2.00	EACH	\$5,200.00	\$10,400.00
SD.04	Colorado Sweet Gold Headgate Allowance	1.00	LS	\$15,400.00	\$15,400.00
Total Price for above F. Storm Drain Items:					\$199,800.00
J. Concrete Flatwork					
CF.01	Concrete Pan (8" Thick)	945.00	SF	\$9.60	\$9,072.00
CF.02	Concrete Curb And Gutter 18" Vertical	265.00	LF	\$25.00	\$6,625.00
CF.03	Concrete Curb And Gutter Mountable	50.00	LF	\$23.00	\$1,150.00
CF.04	Concrete Sidewalk (6" Thick) Attached	1,145.00	SF	\$7.05	\$8,072.25
CF.04	Handicap Ramps W Truncated Domes	8.00	EACH	\$1,000.00	\$8,000.00
Total Price for above J. Concrete Flatwork Items:					\$32,919.25
K. Asphalt Paving					
AC.01	Asphalt Paving Streets 5" Asphalt / 8" Class 5 Agg Base	875.00	SY	\$66.80	\$58,450.00
AC.02	Pavement Marking - Thermoplastic Crosswalks	3.00	EACH	\$3,160.00	\$9,480.00
AC.03	Pavement Marking - Road Centerline	1.00	LS	\$565.00	\$565.00
Total Price for above K. Asphalt Paving Items:					\$68,495.00
L. Traffic Control					
TC.01	Traffic Control - Traffic Plan	1.00	EACH	\$60.00	\$60.00
TC.02	Traffic Control - Traffic Control Management	2.00	DY	\$600.00	\$1,200.00
TC.03	Traffic Control - Traffic Control Flaggers	40.00	HR	\$32.50	\$1,300.00
TC.04	Traffic Control - Traffic Control Inspections	60.00	DY	\$102.00	\$6,120.00
TC.05	Traffic Control - Traffic Control Road Closure/Detour Route Devices	60.00	DY	\$110.00	\$6,600.00
TC.05	Traffic Control - Stop Signs	2.00	EACH	\$250.00	\$500.00
Total Price for above L. Traffic Control Items:					\$15,780.00
M. Concrete Structures					
02.200	CBC CIP Headwalls And Wing Walls	30.00	CY	\$1,630.00	\$48,900.00
02.205	Guard/Pedestrian Rail - Allowance	80.00	LF	\$330.00	\$26,400.00
Total Price for above M. Concrete Structures Items:					\$75,300.00
Total Bid Price:					\$840,633.75

- Notes:**
- Budget Pricing is based upon attached exhibits, Sheets 1 through 4, prepared by Connell Resources. No Geotechnical Engineering Report has been provided.
 - The following are excluded from this proposal: Warrantee period in excess of one year; Permits: including but not limited to, city building, development construction, construction dewatering, wastewater discharge, storm water discharge (NPDES), air quality, etc.; Fees, including but not limited to, for development, inspection, utility connection, meters, etc.; prairie dog removal, relocation, or extermination; landscaping.
 - Work is expected to begin once the irrigation ditch stops running water, approximately October 15, and a 60 day duration is anticipated with a full road closure.
 - The project will be constructed to CDOT standards per the attached exhibits. Connell Resources is not a professional engineer, but has been involved in multiple design build projects. Design is based on construction standards and common construction practices.
 - Relocation of unknown underground utilities is not included.
 - Pricing is based on standard box culvert installation. Waterproofing is not included. Review comments by the Hillsborough Ditch changing the design will be priced if they are different from our current assumptions.

Johnstown North 2nd Street Widening

COST PROPOSAL: July 2, 2021

Galloway



		Subconsultants			
		Galloway	CUF (Utility Locate, SUE)	EEC (Geotech)	FEE
		T&M (NTE)	T&M (NTE)	T&M (NTE)	T&M (NTE)
1 - Coordination & Meetings					
1.1	Kickoff Meeting	\$ 1,900			\$ 1,900
1.2	Progress Meetings (12 at 1 hr/ea)	\$ 3,600			\$ 3,600
1.3	Ditch Company Crossing Agreement Legal Descriptions & Exhibits	\$ 2,100			\$ 2,100
1.4	Coordination and Meetings (Utility Companies, Property Owners & Ditch Company (10 at 2 hr/ea)	\$ 5,300			\$ 5,300
Subtotal 1		\$ 12,900	\$ -	\$ -	\$ 12,900
2 - Easements/Survey, Utilities, & Geotechnical Investigations					
2.1	Gather & Review Data/Report/etc.	\$ 7,500			\$ 7,500
2.2	Gather Easement & Utility Info. & Prepare List of U/G & A/G utilities & facilities	\$ 3,200			\$ 3,200
2.3	Prepare Supplemental Agreement Docs (legal descriptions & exhibits) & Design Survey	\$ 3,300			\$ 3,300
2.4	Utility/SUE Investigation (Incl. Research, Potholing (10 EA), & Traffic Control)	\$ 2,100	\$ 7,000		\$ 9,100
2.5	Geotechnical Investigation	\$ 900		\$ 4,000	\$ 4,900
Subtotal 2		\$ 17,000	\$ 7,000	\$ 4,000	\$ 28,000
3 - Preliminary Design (60%)					
3.1	Plans (Incl. Traffic Design)	\$ 18,500			\$ 18,500
3.2	Cost Estimate with Bid Alternatives	\$ 3,900			\$ 3,900
3.3	Hydraulic Analyses & Basis of Design Report	\$ 12,700			\$ 12,700
3.4	Project Specs (DRAFT)	\$ 9,300			\$ 9,300
Subtotal 3		\$ 44,400	\$ -	\$ -	\$ 44,400
4 - Final Design (100%)					
4.1	Plan (DRAFT FINAL) (Incl. Construction Phasing, Address Preliminary Design Comments)	\$ 10,700			\$ 10,700
4.2	Cost Estimate (DRAFT FINAL)	\$ 1,500			\$ 1,500
4.3	Hydraulic Analyses & Basis of Design Report	\$ 5,200			\$ 5,200
4.4	Project Specs (DRAFT FINAL)	\$ 4,400			\$ 4,400
4.5	Final Bid Package Incl. 100%/FINAL Plans, Specs, & Bid Schedule)	\$ 8,500			\$ 8,500
4.6	Permit Applications (Prepare and Submit, Assume Ditch Company & 1 Other)	\$ 3,400			\$ 3,400
Subtotal 4		\$ 33,700	\$ -	\$ -	\$ 33,700
5 - Construction Services					
5.1	Pre-Bid Meeting	\$ 2,500			\$ 2,500
5.2	Pre-Construction Meeting	\$ 2,500			\$ 2,500
5.3	Construction Surveying Support	\$ 1,700			\$ 1,700
5.4	Construction Oversight	\$ 8,000			\$ 8,000
5.5	As-built Drawings	\$ 6,900			\$ 6,900
Subtotal 5		\$ 21,600	\$ -	\$ -	\$ 21,600
Fee Subtotal by Company		\$ 129,600	\$ 7,000	\$ 4,000	\$ 140,600
TOTAL FEE:					\$ 140,600

Standard Form of Agreement Between Owner and Design- Builder – Cost Plus Fee with an Option for a Guaranteed Maximum Price

Document No. 530

Second Edition, 2010

© Design-Build Institute of America
Washington, D.C.





Design-Build Institute of America - Contract Documents

LICENSE AGREEMENT

By using the DBIA Contract Documents, you agree to and are bound by the terms of this License Agreement.

- 1. License.** The Design-Build Institute of America ("DBIA") provides DBIA Contract Documents and licenses their use worldwide. You acknowledge that DBIA Contract Documents are protected by the copyright laws of the United States. You have a limited nonexclusive license to: (a) Use DBIA Contract Documents on any number of machines owned, leased or rented by your company or organization; (b) Use DBIA Contract Documents in printed form for bona fide contract purposes; and (c) Copy DBIA Contract Documents into any machine-readable or printed form for backup or modification purposes in support of your permitted use.
- 2. User Responsibility.** You assume sole responsibility for the selection of specific documents or portions thereof to achieve your intended results, and for the installation, use, and results obtained from the DBIA Contract Documents. You acknowledge that you understand that the text of the DBIA Contract Documents has important legal consequences and that consultation with an attorney is recommended with respect to use or modification of the text. You will not represent that any of the contract documents you generate from DBIA Contract Documents are DBIA documents unless (a) the document text is used without alteration or (b) all additions and changes to, and deletions from, the text are clearly shown.
- 3. Copies.** You may not use, copy, modify, or transfer DBIA Contract Documents, or any copy, modification or merged portion, in whole or in part, except as expressly provided for in this license. Reproduction of DBIA Contract Documents in printed or machine-readable format for resale or educational purposes is expressly prohibited. You will reproduce and include DBIA's copyright notice on any printed or machine-readable copy, modification, or portion merged into another document or program.
- 4. Transfers.** You may not transfer possession of any copy, modification or merged portion of DBIA Contract Documents to another party, except that a party with whom you are contracting may receive and use such transferred material solely for purposes of its contract with you. You may not sublicense, assign, or transfer this license except as expressly provided in this Agreement, and any attempt to do so is void.
- 5. Term.** The license is effective for one year from the date of purchase. DBIA may elect to terminate it earlier, by written notice to you, if you fail to comply with any term or condition of this Agreement.
- 6. Limited Warranty.** DBIA warrants the electronic files or other media by which DBIA Contract Documents are furnished to be free from defects in materials and workmanship under normal use during the Term. There is no other warranty of any kind, expressed or implied, including, but not limited to the implied warranties of merchantability and fitness for a particular purpose. Some states do not allow the exclusion of implied warranties, so the above exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state. DBIA does not warrant that the DBIA Contract Documents will meet your requirements or that the operation of DBIA Contract Documents will be uninterrupted or error free.
- 7. Limitations of Remedies.** DBIA's entire liability and your exclusive remedy shall be: the replacement of any document not meeting DBIA's "Limited Warranty" which is returned to DBIA with a copy of your receipt, or at DBIA's election, your money will be refunded. In no event will DBIA be liable to you for any damages, including any lost profits, lost savings or other incidental or consequential damages arising out of the use or inability to use DBIA Contract Documents even if DBIA has been advised of the possibility of such damages, or for any claim by any other party. Some states do not allow the limitation or exclusion of liability for incidental or consequential damages, so the above limitation or exclusion may not apply to you.
- 8. Acknowledgement.** You acknowledge that you have read this agreement, understand it and agree to be bound by its terms and conditions and that it will be governed by the laws of the District of Columbia. You further agree that it is the complete and exclusive statement of your agreement with DBIA which supersedes any proposal or prior agreement, oral or written, and any other communications between the parties relating to the subject matter of this agreement.

INSTRUCTIONS

For DBIA Document No. 530 Standard Form of Agreement Between Owner and Design-Builder - Cost Plus Fee with an Option for a Guaranteed Maximum Price (2010 Edition)

Checklist

Use this Checklist to ensure that the Agreement is fully completed and all exhibits are attached.

x _____	Page 1	Owner's name, address and form of business
x _____	Page 1	Design-Builder's name, address and form of business
x _____	Page 1	Project name and address
x _____	Section 2.1.3	Identify other exhibits to the Agreement
_____	Section 4.2	Note the optional provisions that are provided
_____	Section 4.3.2	Complete blanks for additional sum for use of Work Product
_____	Section 5.2.1	Complete blanks for calendar days and note the optional language that is provided
_____	Section 5.2.2	Insert any interim milestones (optional)
_____	Section 5.4	Complete blanks for liquidated damages and note the optional provisions that are provided
_____	Section 5.5	If the parties select the option provided they have to insert an amount
_____	Section 5.6	Complete blanks for early completion bonus and note the optional provision that is provided
_____	Section 5.7	Note the optional provisions that are provided
_____	Section 6.1.2	Insert basis for pricing preliminary services (optional)
_____	Section 6.2.1	Choose basis for Fee and complete blanks
_____	Section 6.2.2	Insert financial arrangements for adjustments and note optional provisions
_____	Section 6.3.3	Complete blanks for markup; insert or attach personnel names, etc.
_____	Section 6.3.4	Note the optional provision that is provided
_____	Section 6.4.4	Note the optional provision that is provided
_____	Section 6.6.1.1	Complete blanks for GMP, and note the optional provision that is provided
_____	Section 6.6.1.2	Complete blanks for Design-Builder's Contingency
_____	Section 6.6.3.1	Choose method for sharing savings; complete blanks
_____	Section 6.7.1	Note optional provision
_____	Section 7.1.1	Complete blanks for day of month
_____	Section 7.2.1	Complete blanks for retention percentage and note optional provision
_____	Section 7.2.2	Note the optional provision that is provided
_____	Section 7.4	Complete blanks for interest rate
_____	Section 8.1.3	Choose overhead/profit method for termination for convenience
_____	Section 8.2.1	Complete blanks for percentages
_____	Section 8.2.2	Complete blanks for percentages
_____	Section 9.1.1	Insert Owner's Senior Representative's name, etc. (optional)
_____	Section 9.1.2	Insert Owner's Representative's name, etc. (optional)
_____	Section 9.2.1	Insert Design-Builder's Senior Representative's name, etc. (optional)
_____	Section 9.2.2	Insert Design-Builder's Representative's name, etc. (optional)
_____	Section 10.1	Attach Insurance Exhibit
_____	Section 10.2	Insert amount and conditions of bonds or other security and note the options that are provided
_____	Section 11.1	Insert any other provisions (optional)
_____	Last Page	Owner's and Design-Builder's execution of the Agreement

General Instructions

No.	Subject	Instruction
1.	Standard Forms	Standard form contracts have long served an important function in the United States and international construction markets. The common purpose of these forms is to provide an economical and convenient way for parties to contract for design and construction services. As standard forms gain acceptance and are used with increased frequency, parties are able to enter into contracts with greater certainty as to their rights and responsibilities.
2.	DBIA Standard Form Contract Documents	Since its formation in 1993, the Design-Build Institute of America ("DBIA") has regularly evaluated the needs of owners, design-builders, and other parties to the design-build process in preparation for developing its own contract forms. Consistent with DBIA's mission of promulgating best design-build practices, DBIA believes that the design-build contract should reflect a balanced approach to risk that considers the legitimate interests of all parties to the design-build process. DBIA's Standard Form Contract Documents reflect a modern risk allocation approach, allocating each risk to the party best equipped to manage and minimize that risk, with the goal of promoting best design-build practices.
3.	Use of Non-DBIA Documents	To avoid inconsistencies among documents used for the same project, DBIA's Standard Form Contract Documents should not be used in conjunction with non-DBIA documents unless the non-DBIA documents are appropriately modified on the advice of legal counsel. Moreover, care should also be taken when using different editions of the DBIA Standard Form Documents on the same project to ensure consistency.
4.	Legal Consequences	DBIA Standard Form Contract Documents are legally binding contracts with important legal consequences. Contracting parties are advised and encouraged to seek legal counsel in completing or modifying these Documents.
5.	Reproduction	DBIA hereby grants to purchasers a limited license to reproduce its Documents consistent with the License Agreement accompanying these Documents. At least two original versions of the Agreement should be signed by the parties. Any other reproduction of DBIA Documents is strictly prohibited.
6.	Modifications	Effective contracting is accomplished when the parties give specific thought to their contracting goals and then tailor the contract to meet the unique needs of the project and the design-build team. For that reason, these Documents may require modification for various purposes including, for example, to comply with local codes and laws, or to add special terms. DBIA's latest revisions to its Documents provide the parties an opportunity to customize their contractual relationship by selecting various optional contract clauses that may better reflect the unique needs and risks associated with the project. Any modifications to these Documents should be initialed by the parties. At no time should a document be re-typed in its entirety. Re-creating the document violates copyright laws and destroys one of the advantages of standard forms-familiarity with the terms.
7.	Execution	It is good practice to execute two original copies of the Agreement. Only persons authorized to sign for the contracting parties may execute the Agreement.

Specific Instructions

Section	Title	Instruction
General	Purpose of This Agreement	DBIA Document No. 530 ("Agreement") should be used when the parties intend that Owner pay Design-Builder the Cost of the Work plus a Fee, with or without a Guaranteed Maximum Price ("GMP"). If there is uncertainty about Owner's Project Criteria, or the Project Criteria remain to be developed by Owner and Design-Builder together, a cost-plus/GMP contracting approach is desirable. If there is certainty as to Owner's Project Criteria, a lump sum fixed price for the completion of all design and construction services may be suitable, especially when the Owner procures Design-Builder's services by competitive means. In such case, DBIA Document No. 525 should be used.
General	Purpose of These Instructions	These Instructions are not part of this Agreement, but are provided to aid the parties in their understanding of the Agreement and in completing the Agreement.
General	Related Documents	This Agreement shall be used in conjunction with the General Conditions of Contract. Other related Contract Documents are listed in Article 2 of this Agreement.
General	Date	On Page 1, enter the date when both parties reach a final understanding. It is possible, due to logistical reasons, that the dates when the parties execute the Agreement may be different. Once both parties execute the Agreement, the effective date of the Agreement will be the date recorded on Page 1. This date does not, however, determine Contract Time, which is measured according to the terms of Article 5.
General	Parties: Owner and Design-Builder	On Page 1, enter the legal name and full address of Owner and Design-Builder, as well as the legal form of each entity, e.g., corporation, partnership, limited partnership, limited liability company, or other.
2.1.2	GMP Exhibit, GMP Proposal	If a GMP is established upon execution of this Agreement, the GMP Exhibit must be attached pursuant to Section 6.6.1.1. If a GMP is established after execution of this Agreement, the GMP Proposal must be attached pursuant to Section 6.6.2. Both the GMP Exhibit and GMP Proposal will include those Basis of Design Documents Design-Builder uses as the basis for its GMP.
2.1.5	Construction Documents	After execution of the Agreement, and consistent with the requirements of Section 2.4 of the General Conditions of Contract, Design-Builder will prepare Construction Documents, subject to Owner's review and approval.
3.2	Order of Precedence	The Contract Documents are listed in Section 2.1 in the order of their precedence. The GMP Exhibit and GMP Proposal are based on the Basis of Design Documents, which are comprised of various documents. The parties should strongly consider establishing the priority of the various documents comprising the GMP Exhibit or GMP Proposal to avoid disputes should discrepancies arise among the documents. Moreover, Section 2.1.3 recognizes that there may be other exhibits attached to this Agreement. If this is the case, the parties should discuss whether these exhibits should be part of the Basis of Design Documents. If these exhibits are not made part of the Basis of Design Documents, these exhibits will not take priority over the Basis of Design Documents in the event of a conflict.
3.3	Definitions	Terms, words and phrases used in the Agreement shall have the same meanings used in the General Conditions of Contract.
3.4	Design Specifications	The Owner is cautioned that if it includes design specifications in its Project Criteria there is case law holding that the Design-Builder is entitled to rely on such information, and to the extent such information is not accurate, the Design-Builder will be entitled to an adjustment in the Contract Price and/or Contract Time. Accordingly, the Owner to avoid such potential liability should consider using performance specifications.

Section	Title	Instruction
4.1	Work Product	This Agreement provides that the Design-Builder shall retain ownership of the Work Product it produces, but obligates Design-Builder to grant a limited license to Owner to use the Work Product according to the terms and circumstances described in Sections 4.2, 4.3, 4.4 and 4.5.
4.2	Owner's Limited License Upon Payment in Full	Design-Builder shall grant Owner, at Owner's sole risk, a limited license to use the Work Product at the completion of the Work in connection with Owner's occupation of the Project. This Section also provides the parties with the option of transferring ownership of some or all of the Work Product to the Owner upon payment in full for all Work performed. Generally, where the Owner desires ownership of Work Product, it is sufficient to transfer ownership of unique architectural and design elements.
4.3	Owner's Limited License Upon Owner's Termination for Convenience or Design-Builder's Election to Terminate	Owner should not use the Termination for Convenience Clause to obtain Design-Builder's valuable design concepts, and then seek lower bids from other design-builders. Therefore, where Owner terminates this Agreement for its convenience, and then decides to complete the Project with its own or thirdparty forces, Design-Builder shall grant Owner the rights set forth in Section 4.2, provided Owner pays Design-Builder all amounts due Design-Builder as required by the Contract Documents, including paying Design-Builder an additional sum per Section 4.3.2 for the use of the Work Product. In the event Design-Builder elects to terminate this Agreement for cause, for reasons set forth in Section 11.4 of the General Conditions of Contract, these same conditions apply to Owner's use of the Work Product.
4.3.2	Additional Compensation	To minimize disputes, the parties should negotiate prior to the execution of the Agreement the amount Owner shall pay Design-Builder for the use of Design-Builder's Work Product in the event Owner terminates this Agreement for its convenience or Design-Builder elects to terminate this Agreement for cause. Enter this amount.
4.4	Owner's Limited License Upon Design-Builder's Default	If Design-Builder is properly terminated for default, Owner is granted a limited license to use the Work Product, to complete the Project, and Owner shall thereafter have the same rights and obligations as set forth in Section 4.2.
4.5	Owner's Indemnification for Use of Work Product	Owner's use or alteration of the Work Product shall be at its sole risk, and Owner must agree to defend, indemnify and hold harmless Design-Builder and anyone working by or through Design-Builder, including Design Consultants of any tier.
5.1	Date of Commencement	Design-Builder's obligation to commence work is triggered by its receipt of a Notice to Proceed unless the parties mutually agree otherwise.
5.2.1	Substantial Completion of the Entire Work	Enter the calendar days duration by which Substantial Completion has to be achieved. The parties in this Section have the option of modifying the definition of Substantial Completion set forth in the General Conditions of Contract if they want to use a Temporary Certificate of Occupancy as the benchmark. If this option is selected, Substantial Completion will be deemed to be achieved no later than the date a Temporary Certificate of Occupancy is issued if applicable to the Project.

Section	Title	Instruction
5.2.2	Interim Milestones	It may be that some portions of the Work must be completed in phases or within a prescribed period of time to accommodate Owner's needs. The parties may, at their option, identify these portions of the Work to be completed prior to Substantial Completion of the entire Work. Enter the calendar days, starting from the Date of Commencement, for achieving Substantial Completion of these identified portions of the Work. If these portions of the Work are required to be substantially completed by certain milestone dates, enter those dates. As presently drafted, no remedy is provided to the Owner if an interim milestone is not met. If the Owner has special requirements as it relates to interim milestones, the Owner may want to consider a remedy for the Design-Builder's failure to meet an interim milestone, as well as providing a bonus to the Design-Builder for satisfying such interim milestone.
5.4	Liquidated Damages	Owner should make a good faith evaluation of the amount that is reasonably necessary to compensate it for delay. Owner should not establish liquidated damages to penalize Design-Builder. Moreover, in the event a GMP is not established upon execution of the Agreement, it appears prudent for the parties to refrain from establishing liquidated damages until such time as the GMP is established. Section 5.4 establishes a grace period between the Scheduled Substantial Completion Date and the assessment of liquidated damages in order to prevent disputes as to which party bears responsibility for only a few days of delay. The parties should enter the calendar days that may pass following the Scheduled Substantial Completion Date before liquidated damages will be assessed. The parties are also provided the option of establishing liquidated damages if the Design-Builder fails to achieve Final Completion within a specified number of days after Substantial Completion. If this option is selected, the parties have to negotiate the number of days, as well as the liquidated damages amount. The parties in negotiating liquidated damages should keep in mind that the amount of liquidated damages for failing to achieve Final Completion should be a considerably scaled down amount and should reflect the financial harm to the Owner. In no case should the total amount of liquidated damages for the Project exceed an amount that is reasonably necessary to compensate Owner for Project delay. The parties also have the option here of eliminating liquidated damages altogether, in which case the Owner can recover actual damages for Project delay at an amount that is capped by the parties. The Owner is cautioned that it still cannot recover consequential damages, as they are waived under Section 10.5.1 of the General Conditions of Contract.
5.5	Liquidated Damages Cap	The parties can agree to cap liquidated damages for delay at a negotiated amount.

Section	Title	Instruction
5.6	Early Completion Bonus	If the Project economics justify liquidated damages, then it is appropriate to couple these liquidated damages with an early completion bonus. The parties should enter the number of calendar days prior to the Scheduled Substantial Completion Date that will set the Bonus Date. Also, enter the amount of the bonus to be paid per day that will allow Owner to share with Design-Builder the economic benefits of early completion. Moreover, in the event a GMP is not established upon execution of the Agreement, it appears prudent for the parties to refrain from establishing an early completion bonus until such time as the GMP is established. The parties also have the option in Section 5.6 of capping the early completion bonus at a negotiated amount.
5.7	Compensation for Force Majeure Events	The parties are provided the opportunity of providing the Design-Builder the right to receive compensation for Force Majeure Events. By selecting this option, the parties agree to modify Section 8.2.2 of the General Conditions of Contract, in which case the parties have to negotiate how many cumulative days of Force Majeure delays must occur before the Design-Builder is entitled to either a negotiated amount per day for delay or the direct costs it has incurred as a result of such delay.
6.1.2	Optional Pricing	This Agreement allows the parties the flexibility to establish within the Contract Price a different payment basis for certain preliminary portions of the Work which may be necessary to permit Design-Builder to furnish Owner with a GMP. Alternatively, the parties may use DBIA Document No. 520 to perform certain preliminary design services prior to setting the GMP. Enter a description of any such services, the basis for determining the price, and the price to be paid.
6.2.1	Design-Builder's Fee	Enter the amount of Design-Builder's Fee as a sum certain or as a percentage of the Cost of the Work. Design-Builder's Fee shall be commensurate with the services it provides and the risk it assumes in providing single point responsibility to Owner.
6.2.2	Adjustments to Design-Builder's Fee	For additive Change Orders, the parties have to negotiate the Fee the Design-Builder will receive. For deductive Change Orders, the parties have the option by checking the appropriate box to signify whether there will be no additional reduction or whether there will be an additional reduction based on a negotiated percentage.
6.3.3	Wages for Design-Builder's Employees at Principal or Branch Offices	DBIA endorses reimbursing salaries and associated benefits of Design-Builder's Project personnel, such as accountants, stationed at offices other than the field office, when to do so is more efficient and cost effective. Enter the percentage markup to be applied for Project-related overhead associated with such personnel. Insert, or attach as an exhibit, a list of such personnel and their job functions.
6.3.4	Employee Benefits	It may be simpler for the parties to agree on a multiplier (rather than actual costs) to compensate the Design-Builder for employee benefits. Accordingly, the parties may want to insert the multiplier to be applied to the wages and salaries of such reimbursable employees.

Section	Title	Instruction
6.3.7	Costs for Defective/Non-Conforming Work	The Cost of the Work shall include the costs to repair or correct defective or non-conforming Work (including warranty or corrective work performed after Substantial Completion) unless caused by Design-Builder's negligence. DBIA believes that Design-Builder should not be penalized for inadvertent mistakes which are inevitable when designing and constructing a Project. To do so would encourage ultra-conservatism in every task, the ultimate cost of which would be greater than a proactive approach to performing the Work.
6.3.23	Warranty Escrow	At this section, the parties are provided the opportunity to establish prior to Final Completion an escrow account in a negotiated amount to be used to reimburse the Design-Builder for its costs incurred in performing warranty Work. If funds remain in the escrow account after the expiration of the warranty period, the funds are returned to the Owner subject to Design-Builder's share of any savings. Note that even if the escrow account is exhausted, if funds remain under the GMP, the Owner is still obligated to reimburse the Design-Builder for its warranty Work.
6.4.4	Allowance Value	This section recognizes that the parties may agree that certain items of Work should be treated as an Allowance Item and priced based on Allowance Values. The Allowance Value for which the Design-Builder will be entitled to receive compensation includes direct cost of labor, materials, equipment, transportation, taxes and insurance associated with the Allowance Item. All other costs associated with the Allowance Item, such as design fees, general conditions costs and fee, are deemed to be included in the Contract Price. However, by checking the box, the parties agree that in the event the actual cost of the Allowance Item is greater than or less than the Allowance Value by a negotiated percentage, then Design-Builder's right to Fee and markup shall be determined pursuant to Section 6.2.2.
6.6	The Guaranteed Maximum Price	This Agreement provides the parties flexibility in establishing the Contract Price. Parties can establish a GMP before or after entering into this Agreement, or elect to proceed on the basis of costs plus a fee, without a GMP. If a GMP method is elected, the GMP should not be established until the Basis of Design Documents are sufficiently defined to make the GMP realistic and meaningful. Setting it too early does not permit reasonable opportunity for scope definition and evaluation of Project risk. On the other hand, setting it too late may not achieve Owner's objective of having an early price guarantee to enable it to make decisions relative to the Project.

Section	Title	Instruction
6.6.1.1	GMP at Agreement Execution	Enter the GMP, if appropriate. Attach as an exhibit to this Agreement the Basis of Design Documents used to establish the GMP. These documents comprise the GMP Exhibit which shall become a Contract Document pursuant to Section 2.1.1 of the Agreement. The Design-Builder does not guarantee any specific line item provided as part of the GMP. By selecting the alternate option, the Design-Builder agrees to guarantee the line item in its GMP for general conditions costs only. The Design-Builder agrees that it is responsible for paying general conditions costs in excess of this line item. The Design-Builder does not guarantee any other line items in the GMP.
6.6.1.2	GMP Contingency	Enter the amount of Design-Builder's Contingency. The Contingency is for the exclusive use of the Design-Builder and covers all unanticipated costs incurred that are not the basis of a Change Order. This section sets forth by way of example only the type of costs that would be funded out of the Contingency. Other costs, such as but not limited to any deductibles the Design-Builder is obligated to pay, would be subject to reimbursement. The Design-Builder is also required to provide the Owner with a monthly status report accounting for the Contingency, including all reasonably foreseen uses and potential uses of the Contingency for the upcoming three months. While not provided for in the Contingency provision, DBIA recognizes that there may be situations where the Owner will want to recapture the Contingency prior to Final Completion. For example, the Owner may want to use amounts in the Contingency to fund changes to the Project. The Owner's desire has to be balanced against the Design-Builder's need to use the Contingency to fund unanticipated costs for which it is liable. Accordingly, balancing these competing concerns is usually accomplished by releasing some of the Contingency to the Owner after the Design-Builder has bought out the Subcontractors, providing that the Design-Builder is not obligated to release Contingency amounts in excess of amounts identified for reasonably foreseen uses or potential uses of the Contingency.

Section	Title	Instruction
6.6.2.1	GMP Proposal After Execution of This Agreement	At the request of Owner, Design-Builder shall submit its GMP Proposal, which shall include the items listed in Sections 6.6.2.1.1 to 6.5.2.1.9. If the parties agree to additions or deletions from this list, modify this Section 6.6.2.1 appropriately. The Agreement provides the parties with flexibility as to when the GMP Proposal will be submitted after execution of the Agreement. Prior to execution of the Agreement the parties should discuss when Owner desires Design-Builder to submit its GMP Proposal.
6.6.2.1.4	Schedule	Given that expedited delivery is one of the primary factors driving many owners to select the design-build method, DBIA strongly believes that the parties should discuss and understand what each party must do to support the Project schedule. The entire Work, both design and construction, should be scheduled. The schedule should indicate the dates for the start and completion of the various stages of the Work, including the date when Owner information and approvals are required, and any Owner created constraints. The Agreement also provides flexibility to establish the Scheduled Substantial Completion Date prior to submission of the GMP Proposal.
6.6.2.3	Acceptance of GMP Proposal	If Owner accepts the GMP Proposal, the parties should amend this Agreement to add the final GMP Proposal as a Contract Document pursuant to Section 2.1.2.
6.6.2.4	Failure to Accept the GMP Proposal	This Agreement provides three options for Owner in the event it fails to accept the GMP Proposal and two choices for Design-Builder if Owner fails to exercise any of the three options. These options are specifically designed to prevent one party from receiving a windfall in the event the parties cannot agree on the GMP and the Agreement is terminated. The parties should take note that if Owner exercises its option to terminate for convenience, or Design-Builder suspends performance, Design-Builder will not be entitled to payment for uncompleted Work provided by Section 8.2. However, additional payment for Owner's use of Work Product will be due Design-Builder pursuant to Section 4.3, if Owner proceeds to complete the Project using Design-Builder's Work Product.
6.6.3	Savings	One of the benefits of a GMP approach is the possibility that with good management by Design-Builder and timely support from Owner the actual Cost of the Work and Fee may be less than the GMP. This creates a savings pool that should result in a benefit to both Design-Builder and Owner. Sharing these savings creates an incentive for Design-Builder to save costs. Some factors to consider in determining how the Savings are shared include the timing for the establishment of the GMP and the amount of Design-Builder's Fee established under Section 6.2.1.
6.6.3.1	Savings Calculations	This section provides that if the actual Cost of the Work and Design-Builder's Fee is less than the GMP, as such GMP may have been adjusted, the savings, if any, shall be shared. The Agreement offers two choices for distributing Savings. Choose a method and enter the appropriate figures.

Section	Title	Instruction
6.7	Performance Incentives	In addition for the potential of the Design-Builder to share in Savings as set forth in Section 6.6.3, there may be other performance incentives that will influence Project success. Such incentives may include award fees tied to the Design-Builder achieving certain standards relative to client satisfaction, safety, and personnel retention. The parties are encouraged to discuss the use of such incentives during negotiation of this Agreement. Any agreement on the use of incentives should be set forth in an exhibit attached to this Agreement.
7.1.1	Progress Payments	Enter the day of the month when Design-Builder shall submit its Application for Payment.
7.2.1	Retainage	Enter the percentage Owner will retain from Progress Payments to Design-Builder until fifty percent (50%) of the Work is completed. Owner should recognize that it creates undue hardship to hold retainage on Subcontractors that have completed their work early in the Project. Owner should accordingly consider releasing retainage on Subcontractors that complete work early in the Project, providing that these Subcontractors have satisfactorily performed their portion of the Work. The parties are provided the option of modifying the retainage provision by checking the box. This option excludes from retainage the Design-Builder's General Conditions costs and amounts paid to Design-Builder's Design Consultant. The rationale for selecting this option is that the Design-Builder is obligated to pay its General Conditions costs in full each month and that under the design-bid-build delivery method, the Owner typically does not retain sums from its Designer.
7.2.2	Release of Retainage	This section requires the Owner to release retainage to the Design-Builder. If the Design-Builder and Owner have established a warranty reserve in accordance with Section 6.3.2.4, the parties shall establish an escrow account at this time.
7.4	Interest	The parties should enter the rate at which interest will accrue on Design-Builder's payments if unpaid five (5) days after due. Late payment creates a hardship for Design-Builder, its Design Consultants and Subcontractors.
7.5	Record Keeping	The Owner is provided access to Design-Builder's accounting information as it relates to Costs of the Work. However, if the parties have agreed to multipliers or markups, the time to challenge and negotiate those percentages is at the time the parties execute the Agreement and not during the Project or after it has been completed. Accordingly, the Owner can at any time audit these percentages only to confirm that such percentage has been properly charged and not to challenge the composition of such percentage.

Section	Title	Instruction
8.1.3	Termination for Convenience: Overhead and Profit	The parties should choose prior to execution of the Agreement the method that will be used to determine overhead and profit paid to Design-Builder in the event Owner terminates Design-Builder for its convenience. The parties may choose to set percentage rates for overhead and profit prior to execution of the Agreement, or may choose to determine reasonable sums to be paid for overhead and profit at the time of the termination. If the parties choose to set overhead and profit rates prior to execution of the Agreement, the percentages should be entered in Section 8.1.3.
8.2	Termination for Convenience: Additional Payments	Although it is important for Owner to have a process for terminating this Agreement for convenience, the process must consider the interests of Design-Builder. If Owner terminates this Agreement for its own convenience, compensating Design-Builder for its costs will not be adequate because Design-Builder will have committed its resources for a small amount of revenue. Therefore, in addition to the overhead and profit paid in Section 8.1, Owner shall pay Design-Builder an additional sum, calculated as a percentage of the remaining balance of the Contract Price or, if a GMP has not been established, the remaining balance of the most recent estimated Contract Price. Enter the percentages Owner shall pay Design-Builder if Owner terminates this Agreement for its own convenience prior to or after the start of construction.
8.3	Termination for Convenience: Owner's Use of Work Product	Owner should not use the Termination for Convenience clause to obtain Design-Builder's valuable design concepts and then seek lower bids from another design-builder. If Owner terminates this Agreement for its own convenience, and chooses to proceed with the Project using Design-Builder's Work Product, Owner should pay an additional sum for the use of Design-Builder's Work Product pursuant to Section 4.3.
Article 9	Representatives of the Parties	Enter the name, title, address and telephone number of Owner's Senior Representative and Owner's Representative at Sections 9.1.1 and 9.1.2, respectively. Enter the name, title, address and telephone number of Design-Builder's Senior Representative and Design-Builder's Representative at Sections 9.2.1 and 9.2.2, respectively. The parties can elect to establish these Representatives during the performance of the Project rather than at the time of execution of this Agreement. If Representatives are identified after execution of the Agreement, an appropriate amendment should be made to the Agreement at the time these individuals are designated.
10.1	Insurance	Attach an Insurance Exhibit setting forth in detail the insurance coverages required for the Project. Parties are advised to familiarize themselves with the terms of Article 5 of the General Conditions of Contract, Insurance and Bonds, and to consult their insurance advisor.
10.2	Bonds	Enter the type and amount of bonds or other performance security required for the Project. Where bonding is not required by statute, Owner may want to evaluate the project risks versus the bonding costs in deciding what type of performance security to require.

Section	Title	Instruction
11.1	Other Provisions	Insert any other provisions. For example, the parties may elect to have disputes resolved through litigation rather than arbitration in which case the optional language in this Section should be included.

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Standard Form of Agreement Between Owner and Design-Builder - Cost Plus Fee with an Option for a Guaranteed Maximum Price

*This document has important legal consequences. Consultation with
an attorney is recommended with respect to its completion or modification.*

This **AGREEMENT** is made as of the Sixteenth day of August in the year of 2021, by and between the following parties, for services in connection with the Project identified below:

OWNER:

(Name and address)

**Town of Johnstown
450 S Parish Ave
Johnstown, CO 80534**

DESIGN-BUILDER:

(Name and address)

**Connell Resources, Inc. 7785 Highland Meadows Pkwy, #100
Fort Collins, CO 80528**

PROJECT:

(Include Project name and location as it will appear in the Contract Documents)

North 2nd Street Widening at Hillsborough Ditch

In consideration of the mutual covenants and obligations contained herein, Owner and Design-Builder agree as set forth herein.

Article 1

Scope of Work

1.1 Design-Builder shall perform all design and construction services, and provide all material, equipment, tools and labor, necessary to complete the Work described in and reasonably inferable from the Contract Documents.

Article 2

Contract Documents

2.1 The Contract Documents are comprised of the following:

2.1.1 All written modifications, amendments, minor changes, and Change Orders to this Agreement issued in accordance with DBIA Document No. 535, *Standard Form of General Conditions of Contract Between Owner and Design-Builder* (2010 Edition) ("General Conditions of Contract");

2.1.2 The GMP Exhibit referenced in Section 6.6.1.1 herein or, if applicable, the GMP Proposal accepted by Owner in accordance with Section 6.6.2 herein;

2.1.3 This Agreement, including all exhibits (Budget for Cost - Connell,) but excluding, if applicable, the GMP Exhibit;

2.1.4 The General Conditions of Contract; and

2.1.5 Construction Documents prepared and approved in accordance with Section 2.4 of the General Conditions of Contract.

Article 3

Interpretation and Intent

3.1 Design-Builder and Owner, prior to execution of the Agreement (and again, if applicable, at the time of acceptance of the GMP Proposal by Owner in accordance with Section 6.6.2 hereof), shall carefully review all the Contract Documents, including the various documents comprising the Basis of Design Documents, for any conflicts or ambiguities. Design-Builder and Owner will discuss and resolve any identified conflicts or ambiguities prior to execution of the Agreement or, if applicable, prior to Owner's acceptance of the GMP Proposal.

3.2 The Contract Documents are intended to permit the parties to complete the Work and all obligations required by the Contract Documents within the Contract Time(s) for the Contract Price. The Contract Documents are intended to be complementary and interpreted in harmony so as to avoid conflict, with words and phrases interpreted in a manner consistent with construction and design industry standards. In the event inconsistencies, conflicts, or ambiguities between or among the Contract Documents are discovered after execution of the Agreement, or if applicable, after Owner's acceptance of the GMP Proposal, Design-Builder and Owner shall attempt to resolve any ambiguity, conflict or inconsistency informally, recognizing that the Contract Documents shall take precedence in the order in which they are listed in Section 2.1 hereof. (Note, the parties are strongly encouraged to establish in the GMP Exhibit or GMP Proposal (as applicable) the priority of the various documents comprising such exhibit or proposal.)

3.3 Terms, words and phrases used in the Contract Documents, including this Agreement, shall have the meanings given them in the General Conditions of Contract.

3.4 If Owner's Project Criteria contain design specifications: (a) Design-Builder shall be entitled to reasonably rely on the accuracy of the information represented in such design specifications and their compatibility with other information set forth in Owner's Project Criteria, including any performance specifications; and (b) Design-Builder shall be entitled to an adjustment in the Contract Price and/or Contract Time(s) to the extent Design-Builder's cost and/or time of performance have been adversely impacted by such inaccurate design specification.

3.5 The Contract Documents form the entire agreement between Owner and Design-Builder and by incorporation herein are as fully binding on the parties as if repeated herein. No oral representations or other agreements have been made by the parties except as specifically stated in the Contract Documents.

Article 4

Ownership of Work Product

4.1 Work Product. All drawings, specifications and other documents and electronic data, including such documents identified in the General Conditions of Contract, furnished by Design-Builder to Owner under this Agreement ("Work Product") are deemed to be instruments of service and Design-Builder shall retain the ownership and property interests therein, including but not limited to any intellectual property rights, copyrights and/or patents, subject to the provisions set forth in Sections 4.2 through 4.5 below.

4.2 Owner's Limited License upon Project Completion and Payment in Full to Design-Builder. Upon Owner's payment in full for all Work performed under the Contract Documents, Design-Builder shall grant Owner a limited license to use the Work Product in connection with Owner's occupancy of the Project, conditioned on Owner's express understanding that its alteration of the Work Product without the involvement of Design-Builder is at Owner's sole risk and without liability or legal exposure to Design-Builder or anyone working by or through Design-Builder, including Design Consultants of any tier (collectively the "Indemnified Parties"), and on the Owner's obligation to provide the indemnity set forth in Section 4.5 below.

4.3 Owner's Limited License upon Owner's Termination for Convenience or Design-Builder's Election to Terminate. If Owner terminates this Agreement for its convenience as set forth in Article 8 hereof, or if Design-Builder elects to terminate this Agreement in accordance with Section 11.4 of the General Conditions of Contract, Design-Builder shall, upon Owner's payment in full of the amounts due Design-Builder under the Contract Documents, grant Owner a limited license to use the Work Product to complete the Project and subsequently occupy the Project, and Owner shall thereafter have the same rights as set forth in Section 4.2 above, conditioned on the following:

4.3.1 Use of the Work Product is at Owner's sole risk without liability or legal exposure to any Indemnified Party, and on the Owner's obligation to provide the indemnity set forth in Section 4.5 below, and

4.3.2 Owner agrees to pay Design-Builder the additional sum of Zero _____ Dollars (\$0 _____) as compensation for the right to use the Work Product to complete the Project and subsequently use the Work Product in accordance with Section 4.2 if Owner resumes the Project through its employees, agents, or third parties.

4.4 Owner's Limited License upon Design-Builder's Default. If this Agreement is terminated due to Design-Builder's default pursuant to Section 11.2 of the General Conditions of Contract, then Design-Builder grants Owner a limited license to use the Work Product to complete the Project and subsequently occupy the Project, and Owner shall thereafter have the same rights and obligations as set forth in Section

4.2 above. Notwithstanding the preceding sentence, if it is ultimately determined that Design-Builder was not in default, Owner shall be deemed to have terminated the Agreement for convenience, and Design-Builder shall be entitled to the rights and remedies set forth in Section 4.3 above.

4.5 Owner's Indemnification for Use of Work Product. If Owner is required to indemnify any Indemnified Parties based on the use or alteration of the Work Product under any of the circumstances identified in this Article 4, Owner shall defend, indemnify and hold harmless such Indemnified Parties from and against any and all claims, damages, liabilities, losses and expenses, including attorneys' fees, arising out of or resulting from the use or alteration of the Work Product.

Article 5

Contract Time

5.1 Date of Commencement. The Work shall commence within five (5) days of Design-Builder's receipt of Owner's Notice to Proceed ("Date of Commencement") unless the parties mutually agree otherwise in writing.

5.2 Substantial Completion and Final Completion.

5.2.1 Substantial Completion of the entire Work shall be achieved no later than the thirty first day of December, 2021 (12/31/21) ("Scheduled Substantial Completion Date").

"Substantial Completion is the date on which the Work, or an agreed upon portion of the Work, is sufficiently complete in accordance with the Contract Documents so that Owner can occupy and use the Project or a portion thereof for its intended purposes, provided, however, that Substantial Completion shall be deemed to have been achieved no later than the date of issuance of a Temporary Certificate of Occupancy issued by the local building official."

5.2.2 Interim milestones and/or Substantial Completion of identified portions of the Work ("Scheduled Interim Milestone Dates") shall be achieved as follows: *(Insert any interim milestones for portions of the Work with different scheduled dates for Substantial Completion)*

Final Completion including final paving due to weather limitations shall be completed prior to the first day of April, 2022

5.2.3 Final Completion of the Work or identified portions of the Work shall be achieved as expeditiously as reasonably practicable. Final Completion is the date when all Work is complete pursuant to the definition of Final Completion set forth in Section 1.2.7 of the General Conditions of Contract.

5.2.4 All of the dates set forth in this Article 5 (collectively the "Contract Time(s)") shall be subject to adjustment in accordance with the General Conditions of Contract.

5.3 Time is of the Essence. Owner and Design-Builder mutually agree that time is of the essence with respect to the dates and times set forth in the Contract Documents.

5.4 Liquidated Damages. Design-Builder understands that if Substantial Completion is not attained by the Scheduled Substantial Completion Date, Owner will suffer damages which are difficult to determine and accurately specify. Design-Builder agrees that if Substantial Completion is not attained by seven (7) days after the Scheduled Substantial Completion Date (the "LD Date"), Design-Builder shall pay Owner One Thousand Six Hundred Dollars (\$1600.00) as liquidated damages for each day that Substantial

Completion extends beyond the LD Date. (If a GMP is not established upon execution of this Agreement, the parties should consider setting liquidated damages after GMP negotiations.)

[The parties may want to consider the following supplemental language within Section 5.4 if they want to assess liquidated damages for failing to meet Final Completion. In this case, the first sentence in Section 5.2.3 should be deleted and replaced with the following language.]

☐ Design-Builder understands that if Final Completion is not achieved within 120_____ days of the Substantial Completion Date, Owner will suffer damages which are difficult to determine and accurately specify. Design-Builder agrees that if Final Completion is not achieved within One hundred and twenty _____(120_____) days of Substantial Completion, Design-Builder shall pay to Owner One thousand six hundred _____Dollars (\$1600.00_____), as liquidated damages for each calendar day that Final Completion is delayed beyond the above-referenced number of days.

[In lieu of the liquidated damages specified in Section 5.4 or the alternate provided herein, the Parties may decide that the Agreement will provide for actual damages in the event of Project delay, with Owner being cautioned that there is a waiver of consequential damages under Section 10.5.1 of the General Conditions of Contract. In this case, delete Sections 5.4 and 5.5 and insert the following.]

☐ **5.4**

5.5 Any liquidated damages assessed pursuant to this Agreement shall be in lieu of all liability for any and all extra costs, losses, expenses, claims, penalties and any other damages, whether special or consequential, and of whatsoever nature, incurred by Owner which are occasioned by any delay in achieving the Contract Time(s).

Article 6

Contract Price

6.1 Contract Price.

6.1.1 Owner shall pay Design-Builder in accordance with Article 6 of the General Conditions of Contract a contract price ("Contract Price") equal to Design-Builder's Fee (as defined in Section 6.2 hereof) plus the Cost of the Work (as defined in Section 6.3 hereof), subject to any GMP established in Section 6.6 hereof and any adjustments made in accordance with the General Conditions of Contract.

6.1.2 For the specific Work set forth below, Owner agrees to pay Design-Builder, as part of the Contract Price, on the following basis: *(This is an optional section intended to provide the parties with flexibility to identify and price limited preliminary services, such as a lump sum or cost-plus arrangement for preliminary design, programming, or services necessary to enable Design-Builder to furnish Owner with a GMP before execution of this Agreement.)*

Unless otherwise agreed, payments for Work performed prior to execution of the GMP Amendment ("Design Phase") shall be made monthly based on the percentage of the Work completed. For the Design-Builder's performance of Work during the Design Phase, the Owner shall pay Design-Builder

Payments for the design phase are due and payable within thirty (30) days of presentation of the Design-Builder's invoice.

6.2 Design-Builder's Fee.

6.2.1 Design-Builder's Fee shall be:

[Choose one of the following:]

☐ Eight Hundred Forty Thousand Six Hundred Thirty-Three Dollars and Seventy-Five Cents (\$840,633.75), as adjusted in accordance with Section 6.2.2 below.

6.2.2 Design-Builder's Fee will be adjusted as follows for any changes in the Work:

6.2.2.1 For additive Change Orders, including additive Change Orders arising from both additive and deductive items, it is agreed that Design-Builder shall receive a Fee of five percent (5%) of the additional Costs of the Work incurred for that Change Order.

6.2.2.2 For deductive Change Orders, including deductive Change Orders arising from both additive and deductive items, the deductive amounts shall include:

[Check one box only]

☐ No additional reduction to account for Design-Builder's Fee or any other markup.

6.3 Cost of the Work. The term Cost of the Work shall mean costs reasonably and actually incurred by Design-Builder in the proper performance of the Work. The Cost of the Work shall include only the following:

6.3.1 Wages of direct employees of Design-Builder performing the Work at the Site or, with Owner's agreement, at locations off the Site; provided, however, that the costs for those employees of Design-Builder performing design services shall be calculated on the basis of prevailing market rates for design professionals performing such services or, if applicable, those rates set forth in an exhibit to this Agreement.

6.3.2 Wages or salaries of Design-Builder's supervisory and administrative personnel engaged in the performance of the Work and who are located at the Site or working off-Site to assist in the production or transportation of material and equipment necessary for the Work.

6.3.3 Wages or salaries of Design-Builder's personnel stationed at Design-Builder's principal or branch offices, but only to the extent said personnel are identified in Exhibit A – Budget for Cost and performing the function set forth in said Exhibit.

6.3.4 Costs incurred by Design-Builder for employee benefits, premiums, taxes, insurance, contributions and assessments required by law, collective bargaining agreements, or which are customarily paid by Design-Builder, to the extent such costs are based on wages and salaries paid to employees of Design-Builder covered under Sections 6.3.1 through 6.3.3 hereof.

6.3.5 The reasonable portion of the cost of travel, accommodations and meals for Design-Builder's personnel necessarily and directly incurred in connection with the performance of the Work.

6.3.6 Payments properly made by Design-Builder to Subcontractors and Design Consultants for performance of portions of the Work, including any insurance and bond premiums incurred by Subcontractors and Design Consultants.

6.3.7 Costs incurred by Design-Builder in repairing or correcting defective, damaged or nonconforming Work (including any warranty or corrective Work performed after Substantial Completion), provided that such Work was beyond the reasonable control of Design-Builder, or caused by the ordinary mistakes or inadvertence, and not the negligence, of Design-Builder or those working by or through Design-Builder. If the costs associated with such Work are recoverable from insurance, Subcontractors or Design Consultants, Design-Builder shall exercise its best efforts to obtain recovery from the appropriate source and provide a credit to Owner if recovery is obtained.

6.3.8 Costs, including transportation, inspection, testing, storage and handling, of materials, equipment and supplies incorporated or reasonably used in completing the Work.

6.3.9 Costs (less salvage value) of materials, supplies, temporary facilities, machinery, equipment and hand tools not customarily owned by the workers that are not fully consumed in the performance of the Work and which remain the property of Design-Builder, including the costs of transporting, inspecting, testing, handling, installing, maintaining, dismantling and removing such items.

6.3.10 Costs of removal of debris and waste from the Site.

6.3.11 The reasonable costs and expenses incurred in establishing, operating and demobilizing the Site office, including the cost of facsimile transmissions, long-distance telephone calls, postage and express delivery charges, telephone service, photocopying and reasonable petty cash expenses.

6.3.12 Rental charges and the costs of transportation, installation, minor repairs and replacements, dismantling and removal of temporary facilities, machinery, equipment and hand tools not customarily owned by the workers, which are provided by Design-Builder at the Site, whether rented from Design-Builder or others, and incurred in the performance of the Work.

6.3.13 Premiums for insurance and bonds required by this Agreement or the performance of the Work.

6.3.14 All fuel and utility costs incurred in the performance of the Work.

6.3.15 Sales, use or similar taxes, tariffs or duties incurred in the performance of the Work.

6.3.16 Legal costs, court costs and costs of mediation and arbitration reasonably arising from Design-Builder's performance of the Work, provided such costs do not arise from disputes between Owner and Design-Builder.

6.3.17 Costs for permits, royalties, licenses, tests and inspections incurred by Design-Builder as a requirement of the Contract Documents.

6.3.18 The cost of defending suits or claims for infringement of patent rights arising from the use of a particular design, process, or product required by Owner, paying legal judgments against Design-Builder resulting from such suits or claims, and paying settlements made with Owner's consent.

6.3.19 Deposits which are lost, except to the extent caused by Design-Builder's negligence.

6.3.20 Costs incurred in preventing damage, injury or loss in case of an emergency affecting the safety of persons and property.

6.3.21 Accounting and data processing costs related to the Work.

6.3.22 Other costs reasonably and properly incurred in the performance of the Work to the extent approved in writing by Owner.

6.4 Allowance Items and Allowance Values.

6.4.1 Any and all Allowance Items, as well as their corresponding Allowance Values, are set forth in the GMP Exhibit or GMP Proposal and are included within the GMP.

6.4.2 Design-Builder and Owner have worked together to review the Allowance Items and Allowance Values based on design information then available to determine that the Allowance Values constitute reasonable estimates for the Allowance Items. Design-Builder and Owner will continue working closely together during the preparation of the design to develop Construction Documents consistent with the Allowance Values. Nothing herein is intended in any way to constitute a guarantee by Design-Builder that the Allowance Item in question can be performed for the Allowance Value.

6.4.3 No work shall be performed on any Allowance Item without Design-Builder first obtaining in writing advanced authorization to proceed from Owner. Owner agrees that if Design-Builder is not provided written authorization to proceed on an Allowance Item by the date set forth in the Project schedule, due to no fault of Design-Builder, Design-Builder may be entitled to an adjustment of the Contract Time(s) and Contract Price.

6.4.4 The Allowance Value for an Allowance Item includes the direct cost of labor, materials, equipment, transportation, taxes and insurance associated with the applicable Allowance Item. All other costs, including design fees, Design-Builder's overall project management and general conditions costs, overhead and fee, are deemed to be included in the original Contract Price, and are not subject to adjustment, regardless of the actual amount of the Allowance Item.

6.5 Non-Reimbursable Costs.

6.5.1 The following shall not be deemed as costs of the Work:

6.5.1.1 Compensation for Design-Builder's personnel stationed at Design-Builder's principal or branch offices, except as provided for in Sections 6.3.1, 6.3.2 and 6.3.3 hereof.

6.5.1.2 Overhead and general expenses, except as provided for in Section 6.3 hereof, or which may be recoverable for changes to the Work.

6.5.1.3 The cost of Design-Builder's capital used in the performance of the Work.

6.5.1.4 If the parties have agreed on a GMP, costs that would cause the GMP, as adjusted in accordance with the Contract Documents, to be exceeded.

[The parties shall comply with the following Section 6.6 based upon whether the GMP is agreed upon before the execution of this Agreement or will be developed and agreed upon after execution of this Agreement. If the parties do not use a GMP, this Section 6.6 shall be deemed inapplicable and compensation to Design-Builder shall be based on those fees and costs identified in the balance of this Article 6.]

6.6 The Guaranteed Maximum Price ("GMP").

6.6.1 GMP Established Upon Execution of this Agreement.

6.6.1.1 Design-Builder guarantees that it shall not exceed the GMP of One Million Dollars (\$1,000,000.00). Documents used as a basis for the GMP shall be identified in an exhibit to this Agreement ("GMP Exhibit"). Design-Builder does not guarantee any specific line item provided as part of the GMP, and has the sole discretion to apply payment due to overruns in one line item to savings due to underruns in any other line item. Design-Builder

agrees, however, that it will be responsible for paying all costs of completing the Work which exceed the GMP, as adjusted in accordance with the Contract Documents. *(While the GMP Exhibit will be developed in advance or concurrently with the execution of this Agreement, it is recommended that such exhibit include the items set forth in Section 6.6.2.1 below, to ensure that the basis for the GMP is well-understood).*

6.6.1.2 The GMP includes a Contingency in the amount of One Hundred Fifty-Nine Thousand Three Hundred Sixty-Six Dollars and Twenty-Five Cents (\$159,366.25) which is available for Design-Builder's exclusive use for unanticipated costs it has incurred that are not the basis for a Change Order under the Contract Documents. By way of example, and not as a limitation, such costs may include: (a) trade buy-out differentials; (b) overtime or acceleration; (c) escalation of materials; (d) correction of defective, damaged or nonconforming Work, design errors or omissions, however caused; (e) Subcontractor defaults; or (f) those events under Section 8.2.2 of the General Conditions of Contract that result in an extension of the Contract Time but do not result in an increase in the Contract Price. The Contingency is not available to Owner for any reason, including, but not limited to changes in scope or any other item which would enable Design-Builder to increase the GMP under the Contract Documents. Design-Builder shall provide Owner notice of all anticipated charges against the Contingency, and shall provide Owner as part of the monthly status report required by Section 2.1.2 of the General Conditions of Contract an accounting of the Contingency, including all reasonably foreseen uses or potential uses of the Contingency in the upcoming three (3) months. Design-Builder agrees that with respect to any expenditure from the Contingency relating to a Subcontractor default or an event for which insurance or bond may provide reimbursement, Design-Builder will in good faith exercise reasonable steps to obtain performance from the Subcontractor and/or recovery from any surety or insurance company. Design-Builder agrees that if Design-Builder is subsequently reimbursed for said costs, then said recovery will be credited back to the Contingency.

6.6.2 GMP Established after Execution of this Agreement.

6.6.2.1 GMP Proposal. If requested by Owner, Design-Builder shall submit a GMP Proposal to Owner which shall include the following, unless the parties mutually agree otherwise:

6.6.2.1.1 A proposed GMP, which shall be the sum of:

- i. Design-Builder's Fee as defined in Section 6.2.1 hereof;
- ii. The estimated Cost of the Work as defined in Section 6.3 hereof, inclusive of any Design-Builder's Contingency as defined in Section 6.6.1.2 hereof; and
- iii. If applicable, any prices established under Section 6.1.2 hereof.

6.6.2.1.2 The Basis of Design Documents, which may include, by way of example, Owner's Project Criteria, which are set forth in detail and are attached to the GMP Proposal;

6.6.2.1.3 A list of the assumptions and clarifications made by Design-Builder in the preparation of the GMP Proposal, which list is intended to supplement the information contained in the drawings and specifications and is specifically included as part of the Basis of Design Documents;

6.6.2.1.4 The Scheduled Substantial Completion Date upon which the proposed GMP is based, to the extent said date has not already been established under

Section 5.2.1 hereof, and a schedule upon which the Scheduled Substantial Completion Date is based;

6.6.2.1.5 If applicable, a list of Allowance Items, Allowance Values, and a statement of their basis;

6.6.2.1.6 If applicable, a schedule of alternate prices;

6.6.2.1.7 If applicable, a schedule of unit prices;

6.6.2.1.8 If applicable, a statement of Additional Services which may be performed but which are not included in the GMP and which, if performed, shall be the basis for an increase in the GMP and/or Contract Time(s); and

6.6.2.1.9 The time limit for acceptance of the GMP Proposal.

6.6.2.2 Review and Adjustment to GMP Proposal. After submission of the GMP Proposal, Design-Builder and Owner shall meet to discuss and review the GMP Proposal. If Owner has any comments regarding the GMP Proposal, or finds any inconsistencies or inaccuracies in the information presented, it shall promptly give written notice to Design-Builder of such comments or findings. If appropriate, Design-Builder shall, upon receipt of Owner's notice, make appropriate adjustments to the GMP Proposal.

6.6.2.3 Acceptance of GMP Proposal. If Owner accepts the GMP Proposal, as may be amended by Design-Builder, the GMP and its basis shall be set forth in an amendment to this Agreement.

6.6.2.4 Failure to Accept the GMP Proposal. If Owner rejects the GMP Proposal, or fails to notify Design-Builder in writing on or before the date specified in the GMP Proposal that it accepts the GMP Proposal, the GMP Proposal shall be deemed withdrawn and of no effect. In such event, Owner and Design-Builder shall meet and confer as to how the Project will proceed, with Owner having the following options:

6.6.2.4.1 Owner may suggest modifications to the GMP Proposal, whereupon, if such modifications are accepted in writing by Design-Builder, the GMP Proposal shall be deemed accepted and the parties shall proceed in accordance with Section 6.6.2.3 above;

6.6.2.4.2 Owner may authorize Design-Builder to continue to proceed with the Work on the basis of reimbursement as provided in Section 6.1 hereof without a GMP, in which case all references in this Agreement to the GMP shall not be applicable; or

6.6.2.4.3 Owner may terminate this Agreement for convenience in accordance with Article 8 hereof; provided, however, in this event, Design-Builder shall not be entitled to the payment provided for in Section 8.2 hereof.

If Owner fails to exercise any of the above options, Design-Builder shall have the right to (i) continue with the Work as if Owner had elected to proceed in accordance with Item 6.6.2.4.2 above, and be paid by Owner accordingly, unless and until Owner notifies it in writing to stop the Work, or (ii) suspend performance of Work in accordance with Section 11.3.1 of the General Conditions of Contract, provided, however, that in such event Design-Builder shall not be entitled to the payment provided for in Section 8.2 hereof.

6.6.3 Savings.

6.6.3.1 If the sum of the actual Cost of the Work and Design-Builder's Fee (and, if applicable, any prices established under Section 6.1.2 hereof) is less than the GMP, as such GMP may have been adjusted over the course of the Project, the difference ("Savings") shall be shared as follows: Not Applicable

6.6.3.2 Savings shall be calculated and paid as part of Final Payment under Section 7.3 hereof, with the understanding that to the extent Design-Builder incurs costs after Final Completion which would have been payable to Design-Builder as a Cost of the Work, the parties shall recalculate the Savings in light of the costs so incurred, and Design-Builder shall be paid by Owner accordingly.

Article 7

Procedure for Payment

7.1 Progress Payments.

7.1.1 Design-Builder shall submit to Owner on the fifth _____ (5th _____) day of each month, beginning with the first month after the Date of Commencement, Design-Builder's Application for Payment in accordance with Article 6 of the General Conditions of Contract.

7.1.2 Owner shall make payment within thirty (30) days after Owner's receipt of each properly submitted and accurate Application for Payment in accordance with Article 6 of the General Conditions of Contract, but in each case less the total of payments previously made, and less amounts properly withheld under Section 6.3 of the General Conditions of Contract.

7.1.3 If Design-Builder's Fee under Section 6.2.1 hereof is a fixed amount, the amount of Design-Builder's Fee to be included in Design-Builder's monthly Application for Payment and paid by Owner shall be proportional to the percentage of the Work completed, less payments previously made on account of Design-Builder's Fee.

7.2 Retainage on Progress Payments.

7.2.1 Owner will retain _____ five _____ percent (5 _____ %) of each Application for Payment provided, however, that when fifty percent (50%) of the Work has been satisfactorily completed by Design-Builder and Design-Builder is otherwise in compliance with its contractual obligations, Owner will not retain any additional retention amounts from Design-Builder's subsequent Applications for Payment. Owner will also reasonably consider reducing retainage for Subcontractors completing their work early in the Project.

7.2.2 Within fifteen (15) days after Final Completion of the entire Work or, if applicable, any portion of the Work, pursuant to Section 6.6 of the General Conditions of Contract, Owner shall release to Design-Builder all retained amounts relating, as applicable, to the entire Work or completed portion of the Work, less an amount equal to: (a) the reasonable value of all remaining or incomplete items of Work as noted in the Certificate of Substantial Completion; and (b) all other amounts Owner is entitled to withhold pursuant to Section 6.3 of the General Conditions of Contract.

7.3 Final Payment. Design-Builder shall submit its Final Application for Payment to Owner in accordance with Section 6.7 of the General Conditions of Contract. Owner shall make payment on Design-Builder's properly submitted and accurate Final Application for Payment (less any amount the parties may have agreed to set aside for warranty work) within ten (10) days after Owner's receipt of the Final

Application for Payment, provided that Design-Builder has satisfied the requirements for final payment set forth in Section 6.7.2 of the General Conditions of Contract.

7.4 Interest. Payments due and unpaid by Owner to Design-Builder, whether progress payments or final payment, shall bear interest commencing fifteen (15) days after payment is due at the rate of five _____ percent (_____ 5 _____ %) per month until paid.

7.5 Record Keeping and Finance Controls. Design-Builder acknowledges that this Agreement is to be administered on an "open book" arrangement relative to Costs of the Work. Design-Builder shall keep full and detailed accounts and exercise such controls as may be necessary for proper financial management, using accounting and control systems in accordance with generally accepted accounting principles and as may be provided in the Contract Documents. During the performance of the Work and for a period of three (3) years after Final Payment, Owner and Owner's accountants shall be afforded access to, and the right to audit from time-to-time, upon reasonable notice, Design-Builder's records, books, correspondence, receipts, subcontracts, purchase orders, vouchers, memoranda and other data relating to the Work, all of which Design-Builder shall preserve for a period of three (3) years after Final Payment. Such inspection shall take place at Design-Builder's offices during normal business hours unless another location and time is agreed to by the parties. Any multipliers or markups agreed to by the Owner and Design-Builder as part of this Agreement are only subject to audit to confirm that such multiplier or markup has been charged in accordance with this Agreement, with the composition of such multiplier or markup not being subject to audit.

Article 8

Termination for Convenience

8.1 Upon ten (10) days' written notice to Design-Builder, Owner may, for its convenience and without cause, elect to terminate this Agreement. In such event, Owner shall pay Design-Builder for the following:

8.1.1 All Work executed and for proven loss, cost or expense in connection with the Work;

8.1.2 The reasonable costs and expenses attributable to such termination, including demobilization costs and amounts due in settlement of terminated contracts with Subcontractors and Design Consultants; and

8.1.3

☐ The fair and reasonable sums for overhead and profit on the sum of items 8.1.1 and 8.1.2 above.

8.2 If Owner terminates this Agreement pursuant to Section 8.1 above and proceeds to design and construct the Project through its employees, agents or third parties, Owner's rights to use the Work Product shall be as set forth in Section 4.3 hereof. Such rights may not be transferred or assigned to others without Design-Builder's express written consent and such third parties' agreement to the terms of Article 4.

[The following Article 9 should only be used if Owner and Design-Builder agree to establish their respective representatives at the time the Agreement is executed rather than during the performance of the Project.]

Article 9

Representatives of the Parties

9.1 Owner's Representatives.

9.1.1 Owner designates the individual listed below as its Senior Representative ("Owner Senior Representative"), which individual has the authority and responsibility for avoiding and resolving disputes under Section 10.2.3 of the General Conditions of Contract: *(Identify individual's name, title, address and telephone numbers)*

**Matt LeCerf, Town Manager
450 S Parish Ave
Johnstown, CO 80534**

9.1.2 Owner designates the individual listed below as its Owner's Representative, which individual has the authority and responsibility set forth in Section 3.4 of the General Conditions of Contract: *(Identify individual's name, title, address and telephone numbers)*

**Ellen Hilbig, Deputy Public Works Director
450 S Parish Ave
Johnstown, CO 80534**

9.2 Design-Builder's Representatives.

9.2.1 Design-Builder designates the individual listed below as its Senior Representative ("Design-Builder's Senior Representative"), which individual has the authority and responsibility for avoiding and resolving disputes under Section 10.2.3 of the General Conditions of Contract: *(Identify individual's name, title, address and telephone numbers)*

**John Warren, President
7785 Highland Meadows Pky. #100
Fort Collins, CO 80528**

9.2.2 Design-Builder designates the individual listed below as its Design-Builder's Representative, which individual has the authority and responsibility set forth in Section 2.1.1 of the General Conditions of Contract: *(Identify individual's name, title, address and telephone numbers)*

**Bill Anderson, Vice President of Estimating
7785 Highland Meadows Pky. #100
Fort Collins, CO 80528**

Article 10

Bonds and Insurance

10.1 Insurance. Design-Builder and Owner shall procure the insurance coverages set forth in the Insurance Exhibit attached hereto and in accordance with Article 5 of the General Conditions of Contract.

10.2 Bonds and Other Performance Security. Design-Builder shall provide the following performance bond and labor and material payment bond for the full amount of the GPM:

Performance Bond.

[Check one box only. If no box is checked, then no bond is required.]

☒ x Required

☐ Not Required

Payment Bond.

[Check one box only. If no box is checked, then no bond is required.]

☐ x Required ☐ Not Required

Other Performance Security.

[Check one box only. If no box is checked, then no other performance security is required. If the "Required" box is checked, identify below the specific performance security that is being required and all salient commercial terms associated with that security.]

☐ Required ☒ x Not Required

In executing this Agreement, Owner and Design-Builder each individually represents that it has the necessary financial resources to fulfill its obligations under this Agreement, and each has the necessary corporate approvals to execute this Agreement, and perform the services described herein.

OWNER:**DESIGN-BUILDER:**

Town of Johnstown
(Name of Owner)

Connell Resources, Inc.
(Name of Design-Builder)

(Signature)

(Signature)

Matt LeCerf
(Printed Name)

John Warren
(Printed Name)

Town Manager
(Title)

President
(Title)

Date: _____

Date: _____

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(202) 682-0110
dbia@dbia.org



Town of Johnstown

TOWN COUNCIL AGENDA COMMUNICATIONS

AGENDA DATE: July 19, 2021

SUBJECT: Award design services for Water Treatment Plant

ACTION PROPOSED: Consider Awarding the Water Treatment Plant Design to Burns & McDonnell Engineering

ATTACHMENTS:

1. Carollo Proposal
2. Aqua Proposal
3. JVA Proposal
4. Burns & McDonnell Proposal
5. Burns & McDonnell Updated Proposal
6. RFP
7. Contract/Scope of Services

PRESENTED BY: Marco Carani, Public Works Director

AGENDA ITEM DESCRIPTION:

Enclosed for your review and consideration is a request to hire a design Engineer for the expansion of our Water Treatment Plant.

The Town currently operates the Water Treatment Plant located behind the Johnstown Cemetery. Water Treatment Plant was Built in 1966 as a mixed media filtration plant. It has gone through a few upgrades over the years. The biggest up grade was back in 2006. Town upgraded the pretreatment side of the plant and built the new DAF building which removed the old clarifiers and replaced them with a Dissolve Air Flotation system (DAF).

Due to rapid growth in the Town of Johnstown the Water Treatment plant has been experiencing higher daily flows leaving the plant. During the winter months we average 3 MGD of treated water. Starting in May of every year through mid-October our plant is operating at 4.7 MGD with peak hour demand showing 9 to 11 MGD. Our current plant is permitted for 5 MGD and has the capability to produce 6 MGD. As we look at future growth in the Town of Johnstown the need to expand this plant from a 5 MGD plant to 12 MGD needs to get started immediately. Staff sent out RFP's through bidnetdirect and received four proposals from qualified engineering firms, Carollo, JVA, Aqua and Burns & McDonnell.

The submittals were reviewed independently by the Public Works Director, Deputy Director of Public Works, Ramey Environmental Compliance., and the Town Manager. From the four applicants, the proposals were narrowed down to two (2) firm who we invited for formal interviews to discuss their proposals; explaining their experience, their approach to the project, and how they can best meet the needs of the Town. The RFP requested three different options.

The Community That Cares

www.TownofJohnstown.com

P: 970.587.4664 | 450 S. Parish Ave, Johnstown CO | F: 970.587.0141

Option 1.

The expansion of the existing filter building to house an additional set of filters to achieve a 10 to 12.4 MGD filtration Construction of an adjacent building to house new filters. Filter media must match existing.

Option 2.

Construction of 3 to 4 racks of 3 MGD or greater for 10 to 12.4 MGD treatment of pressurized membranes housed in a separate building constructed similar to a pole barn.

Option 3.

Other viable alternatives that the consultant may want to propose that helps to meet the Town's water demands that can be modular in nature to allow for future expansion of the Water Treatment Plant.

During our work session held on April 12, 2021. Staff along with Burns and McDonnell discussed options that the Town Council wanted to see moving forward for the residents of Johnstown as far as water quality and the improvements to manage the Town's drinking water taste & odor issues. Council Direction for the short term was to install a Granular Activated Carbon (GAC) system. An Ultra Sonic Buoy for Town lake and improvements to our Powdered Activated Carbon system at Lone Tree reservoir. Long term solution Council request was to install an OZONE/Biologically Active Filtration (BAF) Water Treatment Plant. This would address the needs of the Town for many years.

Burns and McDonnell has been working with Staff to put together a plan on how this type of Plant would work with our current conditions. We have built a strong relationship with this company and feel moving forward with them would be in the best interest of the Town. Their proposal that was submitted was for a Membrane/ Granular Activated Carbon Plant. (GAC). Cost for this design was \$814,022. After discussion with Town Council on 6-14-2021 work session it was confirm to proceed forward with the OZONE/BAF Water Treatment Plant.

Burns and McDonnell gave the Town a design quote for \$2,059,442 for the Ozone /BAF. Staff considered bidding out the entire project again with this new direction, but is requesting we proceed with Burns and McDonnell for reasons that we have been working with then on this project and they have provided direction and a commitment to provide the Town of Johnstown with a project that will support the Towns needs for many years. Staff also feels delaying this any longer could limit our future water needs and slow down growth. Staff believe their expertise and ability to meet the expectations of the Town outweighed the need to bid out this project again.

The total contract amount for the services is \$2,059,442.00 A budget amendment is not currently requested because based on the project schedule, we do not anticipate the project scope being fully completed this year. However, Council should consider the fact that this project cost is above what was initially anticipated. The original budget amount was \$450,000 to expand the current plant as is with the same filtration process. The total difference between the budgeted amount and the amount requested is \$1,609,442.00. This amount will be requested in the FY 2022 budget.

In addition to the design, pilot testing required by CDPHE needs to be conducted. Rental of Ozone testing equipment, Biologically Active Filter (BAF) test equipment and installation and

monitoring. This also entails bench scale jar testing, data collection at the WTP to assess optimal chemical dosing options. The goal is to simulate peak taste and odor conditions. Additional cost to be paid by the Town during the design phase is \$831,280.00. This cost will be requested in the Fiscal Year 2022 budget. Burns and McDonnell have asked CDPHE if they could use other pilot programs that have done in the last year to use for the Town. We are waiting for CDPHE response. Break down of pilot test are attached in this packet.

LEGAL ADVICE:

The contract has been reviewed by the Town Attorney.

FINANCIAL ADVICE:

\$450,000 was budgeted in FY 2021. Funds are available to permit this project to move forward and if additional funds are necessary this fiscal year, they could be appropriated later in the calendar year.

RECOMMENDED ACTION:

SUGGESTED MOTIONS:

For Approval:

Staff Recommends to approve and award the Water treatment Plant Expansion Design to Burns and McDonnell in the amount not to exceed. \$2,059,442.00. \$450,000 to be spent as budgeted in FY 2021 and staff will be bringing the remainder of cost to Council in 2022 in the amount of \$1,609,442.00 as well as the pilot program in the amount of \$861,280.00.

For Denial:

Staff recommends that we deny the award as presented and solicit formal bids again

Reviewed and Approved for Presentation:



Town Manager

REQUEST FOR PROPOSAL



**450 South Parish Avenue
Johnstown CO, 80534
970-587-4664**

REQUEST FOR PROPOSALS for PROFESSIONAL ENGINEERING SERVICES for EXPANSION DESIGN Of the TOWN OF JOHNSTOWN WATER TREATMENT PLANT EXPANSION FROM 5 MGD to 10

Issued on: December 30, 2020

Pre-Submittal Meeting: January 14, 2021 8 a.m. with Facility Tour

RFP Submittal/Due Date: February 5, 2021 at 1:00 p.m.

Tentative Town Council Approval: March 15, 2021

**COMPLETE PROPOSAL CAN BE FOUND ON
<https://johnstown.colorado.gov>**

GENERAL INFORMATION

The Town of Johnstown (herein referred to as the Town) is requesting proposals from qualified consultants for design services for the expansion of the Johnstown Water Treatment Plant from 5-MGD to 10 MGD (the Project) as described herein.

- A. The plant is located at 23205 WCR 13, Johnstown CO. 80534. The water plant was constructed and placed on-line in 1966. The facility which has been operated and maintained by the Town since its inception, was constructed as a mixed media plant with two clarifiers. In 2005, the two clarifiers were taken off line and a Dissolved Air Flotation (DAF) was installed. This pretreatment process will support a 10 MGD plant.
- B. This Request for Proposals (RFP) describes the project in general, the required scope of services, the selection process, and the minimum information that must be included with the proposal. Failure to submit information in accordance with the requirements and procedures listed herein may be cause for disqualification at the discretion of the Town.
- C. The information contained in this RFP is the Town's best understanding of the current needs and approach on how to address them, but the Town is open to creative and beneficial modifications to the scope of work described herein based on the consultant's professional expertise in these subject areas. If the consultant believes there is a better way to achieve the Town's goals, then that should be reflected in their proposal. The Town is open to a different delivery method I.e., CMAR/CMGC or Design/Build.
- D. Questions and Clarifications
 - 1. Any questions concerning this Request for Proposals should be directed to the person listed below. No interpretation or clarification of the meaning of the instructions or scope of services will be made orally except for general information that does not require a clarification. Every request for such interpretation should be in writing, submitted by e-mail and addressed to the individual shown below. To be given consideration, questions must be received at least seven (7) days prior (January 29) to the date fixed for the submission of proposals. All clarifications and any supplemental instructions will be posted on the Town of Johnstown website at the following address <https://johnstown.colorado.gov>. Firms should periodically check the website for updates and addenda to this Request for Proposal.
 - 2. Address requests to:
Marco Carani
Director of Public Works

Town of Johnstown
 450 S. Parish Avenue
 P.O. Box 609
 Johnstown, CO 80534
 Email: mcarani@townofjohnstown.com

I. PRE-SUBMITTAL CONFERENCE/MEETING

Due to COVID restrictions, all parties who plan to attend an onsite Pre-Submittal meeting must RSVP contact information and the number of representatives from the firm planning to attend by 1:00 pm January 7, 2021 to mcarani@townofjohnstown.com to confirm an onsite meeting. Masks must be worn and temperatures will be taken prior to entry into the facility. Individuals not complying or having a temperature over 100.4 degrees will be asked to leave.

A. An optional pre-submittal conference will be held on January 14, 2021 beginning at 8:00 a.m. at Johnstown Town Hall, 450 S. Parish, Johnstown CO 80534, followed by a site visit at the Water Treatment Plant. At this meeting, Town staff will discuss the scope of work, general contract issues and respond to questions from the attendees. While not required, firms interested in this Project should plan to attend the Pre-Submittal Conference. Town staff or Operations staff will not be available for meetings and will only respond to individual questions/inquiries received in writing regarding the project scope outside of this conference not later than seven (7) days (January 29, 2021) before the RFP due date. All questions raised and answers given outside of the pre-submittal conference/meeting, if any, will be documented and issued as an addendum to the RFP.

II. SCOPE OF SERVICES

A. Current plant is a Mixed Media Plant constructed in 1966. A plant improvement was constructed in 2005 to install a Dissolved Air Flotation unit for pretreatment. Current plant has 2 mixed media filters rated at 3.1 MGD for a total of 6.2 MGD. The pretreatment process has the capacity of 10 MGD.

Option 1.

The expansion of the existing filter building to house an additional set of filters to achieve a 10 to 12.4 MGD filtration. Construction of an adjacent building to house new filters. Filter media must match existing.

Option 2.

Construction of 3 to 4 racks of 3 MGD or greater for 10 to 12.4 MGD treatment of pressurized membranes housed in a separate building constructed similar to a pole barn.

Option 3.

Other viable alternatives that the consultant may want to propose that helps to meet the Town's water demands that can be modular in nature to allow for future expansion of the Water Treatment Plant.

To upgrade the plant from its existing condition to a 10 to 12.4 MGD, the items listed below would also need to be addressed along with other recommendations by the selected design engineer.

- Expand the existing Clearwell to meet needs.
- Construction of building to house Filter media cells or membranes racks.
- Access doors to allow media replacement or for future membrane installation.
- All internal and external plumbing, pumps and electrical which is required to operate the system.
- An HVAC unit for heating and cooling.
- Coordination with the Towns current SCADA contractor for monitoring of the new system.
- Design of additional raw water line from Towns raw water pump station to plant to be able to deliver an additional 5MGD
- Any and all safety devices needed to ensure safety to staff and the public for both operations, maintenance, access, and consumption of the treated water.

III. SUBMITTAL REQUIREMENTS/PROPOSAL FORMAT

- A. Due to COVID restrictions one email sent to mcarani@townofjohnstown.com is due by February 5, 2021 at 1:00 p.m. The email can either be through the Town's WeTransfer document transfer solution found at johnstownco.wetransfer.com OR can be an email that includes a link to a cloud-based application (FTP, Dropbox, Google Drive, etc.) that has been made available to the Town's representative. The Project name and Consultant's name should be shown on the subject line/message of the email. The Town will respond with an email that the submittal has been received as part of the February 5, 2021 submittal deadline.
- B. Three (3) hard copies, appropriately bound of the Proposal and one (1) electronic copy (pdf) on a flash drive must be received by close of business **on February 12, 2021 at the address shown below.** The Town cannot be responsible for the lack of receipt of proposals by the date and time specified. Mailed copies outside of the sealed envelope, addressed to and delivered to:

Town of Johnstown
 Marco Carani
 Director of Public Works.

450 S. Parish Avenue
P.O. Box 609
Johnstown, CO 80534

- C. Submittals will NOT be accepted or considered after the deadline.
- D. The Proposal must demonstrate specific expertise in the elements of work described herein. Proposals should be bound with the name of the Firm or firms and name of the Project visible on the outside cover. To allow the selection committee sufficient time to properly review all documents in their entirety, each proposal will be limited to 40 pages. The Title Page, Table of Contents, Letter of Transmittal, Section Dividers, and Resumes will not count against the page limits. The Proposal shall contain the following:
 - 1. SECTION 1 - IDENTIFICATION OF PROPOSER: The Proposal shall include the names, offices, addresses, email addresses and phone numbers for Consultant and subconsultant staff that are proposed to be involved in the design, The Proposal shall identify in which office(s) production will occur.
 - 2. SECTION 2 - PROJECT OVERVIEW AND APPROACH: The Proposal shall demonstrate the Consultant's understanding of the Project and include a statement acknowledging the Scope of Services. The Proposal shall also include a detailed description of the proposed approach to the Project. The description shall include details to implement the tasks described in the Scope of Services. The Consultant is encouraged to provide comments and enhancements to the scope provided in the RFP. The Proposal shall include a discussion regarding the Project's technical issues and the Consultant's approach to handling these issues. The Consultant shall also explain how technical memos, workshops, and/or design review meetings will be used, working with the framework of the Scope of Services, to achieve consensus in design details. Emphasis should be placed on how the Consultant's technical approach will promote the Project's success.
 - 3. SECTION 3 - MANAGEMENT APPROACH: The Proposal shall include a discussion regarding the Consultant's management approach, including coordination and monitoring of project schedule, cost, risk, scope, communications, quality, resources, and other management issues that the Consultant feels should be addressed. Emphasis should be placed on how the Consultant's management approach will promote the Project's success. The Consultant approach to quality control in the preparation of construction documents shall be clearly described in this section as well.

4. SECTION 4 - STAFF QUALIFICATIONS: The Proposal shall include a team member organizational chart and a listing and biography of key individuals proposed to be assigned to the project. Each individual's proposed position/responsibility shall be indicated. Special emphasis shall be provided on the individual's backgrounds, qualifications, certifications, experience on related and/or similar projects, and the location from where their work will be performed. The Proposal shall clearly indicate who will be in responsible charge of the project. At least three client references, including name, description of past working relationship, and current contact information, shall be listed for each key individual who is proposed in the organizational chart. The Proposal shall identify staff who will be assigned to the project for construction support, which will be negotiated later. Consultant/Subconsultant affiliation, and professional engineering licenses, including discipline and state of licensure, shall be designated for each individual. Full resumes, sorted first by firm, then by last name, shall be included as an appendix to the Proposal. Resumes shall be limited to two (2) pages each.
5. SECTION 5 - RELATED PROJECT EXPERIENCE: The Proposal shall include profiles of five (5) similar projects that the firm(s) and proposed team members have completed design in the last ten (10) years including project name, date, description and capacity of project, location, design and construction cost, and client reference including phone number. The firm's role in the project should also be described (preliminary design, design construction management, etc., and prime Consultant, subconsultant, etc.). For each project, indicate which proposed team members worked on the project and describe the role/work they performed and their levels of involvement.
6. SECTION 6 -PROJECT SCHEDULE: The Consultant shall prepare a schedule, showing all major project tasks, milestones, and deliverables required to complete all work.

IV. PROPOSED CONTRACT FEES

- A. **Submit one copy of your cost proposal with your uploaded proposal Proposals that do not provide costs may be considered non-responsive and subject to disqualification.** Proposed contract fees shall contain a schedule of the estimated man-hours required and broken down by type of personnel to be used for the proposed services. Breakdowns are to be shown separately for each item listed under "Scope of Work". Overhead factors and other multipliers shall be identified.

- B. The consultant shall be responsible for all required resources to include but not limited to computers, surveys, outside consultants, etc.
- C. The services described in the scope of work shall be compensated on a time and-expense basis.

V. EVALUATION PROCEDURE

- A. The Town of Johnstown will review and evaluate proposals based on the following factors:

1. Qualifications of Firm and Personnel
 - a. Firm's and personnel's experience on similar water treatment facilities projects with water treatment system processes, design, facility upgrades and retrofits to improve performance, permitting, system analysis, public information, construction management services during construction, start-up, and operations and maintenance to be provided.
 - b. Joint ventures or associations related to the services requested, as applicable.
 - c. Organizational chart with qualifications, experience, and responsibilities of the key project personnel (*i.e.*, Project Manager, Project Engineer, Process Engineer, Construction Manager, and QA/QC team) and sub-consultants/contractors.
 - d. Experience and successful project delivery history of the Project Manager responsible for delivery of project scope on similar projects.
2. Project Approach and Understanding
 - a. Suggested approach and understanding of the project.
 - b. Innovative suggestions and identifying challenges
 - c. Approach to communication with Town Staff and the public to facilitate successful delivery of the project within the proposed schedule.
 - d. Firm's description of their experience with and knowledge of all jurisdictional regulations that will be applicable to this project.
 - e. Internal QA/QC process on this project.
3. Capacity and Capability of Firm
 - a. Ability to meet technical design required by the scope. Please note, an emphasis will be placed on the firm's

demonstrated ability to meet schedule and budget requirements.

- b. Proposed schedule to perform the work with sufficient detail to understand the timing of the project deliverables.
 - c. Present and projected workloads
 - d. Potential to effectively replace key personnel, if necessary.
 - e. Management Control Program-Approach, cost control system used to track expenses and labor, method for project status reporting, and schedule control methodology
 - f. Past record of performance on contracts for delivery of work relevant to the project scope, including such factors as technical design, constructability, control of costs, quality of work, ability to meet schedules.
- 4. The cost for the work to be performed
 - a. Points will be awarded based on the cost for Basic Design Engineering and Bidding Services described in Section I of Attachment A.
- 5. Overall Quality of Proposal
 - a. The organization, structure and quality of the proposal will be factored into the award process
- D. Selection Process:
 - 1. Proposals will be evaluated based on the written response to selection criteria listed and the cost proposals provided. After receipt and review of proposals, the Town may elect to conduct interviews for some or all firms.
 - 2. It is anticipated that a contract for the prescribed services will be entered into with the consultant that in the opinion of the Town offers the most favorable combination of qualifications, approach, and pricing. Please note that the selection is a quality-based selection and the lowest cost proposal is not guaranteed to be the selected firm.
- E. Award of Contract
 - 1. The Town will recommend an award of this project to Town Council to consider and approve. Tentatively, we anticipate this to be awarded on Monday, **March 15, 2021**. The Town reserves the right to reject any and all proposals submitted, to waive any informalities in the proposals submitted, and to award a contract only when it appears to be in the best interest of the Town.

VI. SPECIAL CONDITIONS

- A. This RFP does not commit the Town to procure or award a contract for work or to compensate Proposers for proposal preparation expenses. All costs to prepare a response to this RFP shall be borne by the proposer.
- B. All information submitted in response to this RFP shall become the property of the Town, and as such, may be subject to public review as public record.
- C. The Town reserves the right to cancel, modify, supplement, add to, delete from or change any part or aspect of this project if it is believed to be in the best interest of the Town.
- D. The Town reserves the right to request additional data, information or clarification pertinent to this solicitation after the submittal date, provided that such information is germane to evaluation of the firm's qualifications from any or all members of submitting consultants. However, the Town shall not be required to request missing information from the submittal which may cause them to be considered non-responsive.
- E. The Town shall provide the release of all public information concerning the project, including selection announcements and contract awards. Those desiring to release information to the public must receive prior written approval through the Town.
- F. Members of the consultant teams, their agents, lobbyists, attorneys and others shall not contact members of the Town Council, any employee of the Town other than the contact person or any member of the Selection Committee regarding this project or process. Any such contact shall be grounds for automatic disqualification of the consultant team submittal.
- G. The Town, at its sole discretion, reserves the right to reject any and all submittals, waive any and all irregularities, and disregard any and all nonconforming or counter submittals.
- H. The Town may accept or reject any or all information submitted as part of the RFP.
- I. All proposals will be held in confidence until the scheduled agenda for the planned award of the project.

VII. EQUAL EMPLOYMENT OPPORTUNITY

- A. The Town of Johnstown is an equal employment opportunity employee. The City endeavors to do business with firms sharing the Town's commitment to equal opportunity and will not do business with any firm that discriminates on the basis of race, religion, color, ancestry, age, gender, sexual orientation, disability, medical condition or place of birth.

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

AGREEMENT BETWEEN OWNER AND ENGINEER FOR PROFESSIONAL SERVICES

Prepared by



Issued and Published Jointly by



This Agreement has been prepared for use with EJCDC® C-700, Standard General Conditions of the Construction Contract, 2013 Edition. Their provisions are interrelated, and a change in one may necessitate a change in the other. For guidance on the completion and use of this Agreement, see EJCDC® E-001, Commentary on the EJCDC Engineering Services Agreements, 2013 Edition.

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AGREEMENT BETWEEN OWNER AND ENGINEER FOR PROFESSIONAL SERVICES

THIS IS AN AGREEMENT effective as of August 17, 2021 ("Effective Date") between
Town of Johnstown, a Colorado home rule municipal corporation ("Owner") and
Burns & McDonnell Engineering Company, Inc., a Missouri Corporation ("Engineer").

Owner's Project, of which Engineer's services under this Agreement are a part, is generally identified as follows:

Johnstown Water Treatment Plant Design

Other terms used in this Agreement are defined in Article 7.

Engineer's services under this Agreement are generally identified as follows:

Customary and basic planning, permitting assistance, design engineering to the Town of Johnstown Water Treatment Plant to increase the design capacity to 12.5 MGD ("Project"). This Agreement relates to the permitting assistance, engineering design related services related to the Project. Construction Phase Engineering Services will be negotiated during the final design phase of the project and be subject to an amendment to this Agreement or to a subsequent written agreement. The scope of this Agreement is more fully defined in Exhibit A.

Owner and Engineer further agree as follows:

ARTICLE 1 – SERVICES OF ENGINEER

1.01 *Scope*

- A. Engineer shall provide, or cause to be provided, the services set forth herein and in Exhibit A.
- B. Engineer shall perform its services in accordance with the Standard of Care for professional engineering. Engineer's scope of services shall be performed in accordance with the applicable regulations issued by the Colorado Department of Public Health and Environment ("CDPHE") regarding the design and permitting of drinking water facilities; specifically including Design Criteria for Potable Water Systems.

ARTICLE 2 – OWNER'S RESPONSIBILITIES

2.01 *General*

- A. Owner shall have the responsibilities set forth herein and in Exhibit B.
- B. Owner shall pay Engineer as set forth in Article 4 and Exhibit C.
- C. Owner shall be responsible for all requirements and instructions that it furnishes to Engineer pursuant to this Agreement, and for the accuracy and completeness of all programs,

reports, data, and other information furnished by Owner to Engineer pursuant to this Agreement. Engineer may use and rely upon such requirements, programs, instructions, reports, data, and information in performing or furnishing services under this Agreement, subject to any express limitations or reservations applicable to the furnished items.

- D. Owner shall endeavor to provide prompt written notice to Engineer whenever Owner observes or otherwise becomes aware of:
 - 1. any development that affects the scope or time of performance of Engineer's services.
 - 2. the presence at the Site of any Constituent of Concern that is not already known or discovered as described in Paragraph 6.10; or
 - 3. any relevant, material defect or nonconformance in: (a) Engineer's services, (b) the Work, (c) the performance of any Constructor to the extent such performance impacts the Engineer's obligations hereunder, or (d) Owner's performance of its responsibilities under this Agreement.

ARTICLE 3 – SCHEDULE FOR RENDERING SERVICES

3.01 Commencement

- A. Engineer is authorized to begin rendering services as of the Effective Date.

3.02 Time for Completion

- A. Engineer recognizes that time is material and shall complete its obligations set forth in this Agreement pursuant to the schedule set forth in Exhibit A, absent agreed-upon extensions of time.
- B. If, through no fault of Engineer, such periods of time or dates are changed, or the orderly and continuous progress of Engineer's services is impaired, or Engineer's services are delayed or suspended, then the time for completion of Engineer's services, and the rates and amounts of Engineer's compensation, shall be adjusted equitably if such delay results in additional cost to Engineer.
- C. If Owner authorizes changes in the project budget, scope, extent, or character of the Project or Engineer's services, then the time for completion of Engineer's services, and the rates and amounts of Engineer's compensation, shall be adjusted equitably, but shall only be increased if such change expands the scope, extent or character of the Project or Engineer's services.
- D. Owner shall make decisions and carry out its other responsibilities in a timely manner so as not to delay the Engineer's performance of its services.

ARTICLE 4 – INVOICES AND PAYMENTS

4.01 *Invoices*

- A. *Preparation and Submittal of Invoices:* Engineer shall prepare invoices in accordance with its standard invoicing practices and the terms of Exhibit C. Engineer shall submit its invoices to Owner on a monthly basis. Invoices are due and payable within 30 days of receipt.

4.02 *Payments*

- A. *Application to Interest and Principal:* Payment will be credited first to any interest owed to Engineer and then to principal.
- B. *Failure to Pay:* If Owner fails to make any payment due Engineer for services and expenses within 30 days after receipt of Engineer's invoice, then:
 1. amounts due Engineer will be increased at the rate of 1.0% per month (or the maximum rate of interest permitted by law, if less) from said thirtieth day; and
 2. Engineer may, after giving seven days written notice to Owner, suspend services under this Agreement until Owner has paid in full all amounts due for services, expenses, and other related charges, except that Engineer shall not suspend services for the Owner's failure to pay the portion of an invoice that is disputed. Owner waives any and all claims against Engineer for any such suspension.
- C. *Disputed Invoices:* If Owner disputes an invoice, either as to amount or entitlement, then Owner shall promptly advise Engineer in writing of the specific basis for doing so, may withhold only that portion so disputed, and must pay the undisputed portion subject to the terms of Paragraph 4.01.
- D. *Sales or Use Taxes:* If after the Effective Date any governmental entity takes a legislative action that imposes additional sales or use taxes on Engineer's services or compensation under this Agreement, then Engineer may invoice such additional sales or use taxes for reimbursement by Owner. Owner shall reimburse Engineer for the cost of such invoiced additional sales or use taxes; such reimbursement shall be in addition to the compensation to which Engineer is entitled under the terms of Exhibit C.

ARTICLE 5 – OPINIONS OF COST

5.01 *Opinions of Probable Construction Cost*

- A. Engineer's opinions (if any) of probable Construction Cost are to be made on the basis of Engineer's experience, qualifications, and general familiarity with the construction industry. However, because Engineer has no control over the cost of labor, materials, equipment, or services furnished by others, or over contractors' methods of determining prices, or over competitive bidding or market conditions, Engineer cannot and does not guarantee that proposals, bids, or actual Construction Cost will not vary from opinions of probable Construction Cost prepared by Engineer. If Owner requires greater assurance as to probable Construction Cost, then Owner agrees to obtain an independent cost estimate.

5.02 *Opinions of Total Project Costs*

- A. The services, if any, of Engineer with respect to Total Project Costs shall be limited to assisting the Owner in tabulating the various categories that comprise Total Project Costs. Engineer assumes no responsibility for the accuracy of any opinions of Total Project Costs.

ARTICLE 6 – GENERAL CONSIDERATIONS

6.01 *Standards of Performance*

- A. *Standard of Care:* The standard of care for all professional engineering and related services performed or furnished by Engineer under this Agreement will be the care and skill ordinarily used by members of the subject profession practicing under similar circumstances at the same time and in the same locality.
- B. The foregoing representation of the standard of care shall not apply in connection with, and the Engineer shall have no responsibility for, any consequences from: (1) the Owner's failure to perform a responsibility under this Agreement, or (2) any of the following circumstances:
 - 1. The discovery, identification, presence, handling, disposal, or removal of, or exposure of a person to hazardous materials pre-existing that were not reasonably foreseeable or known at the Project, including but not limited to asbestos or asbestos products, lead-based paint, PCB, or other hazardous materials; or
 - 2. A modification to, or use of, any drawings, specifications or other documents furnished by the Owner, which modification or use is not contemplated by this Agreement.
- C. *Technical Accuracy:* Owner shall not be responsible for discovering deficiencies in the technical accuracy of Engineer's services. Engineer shall correct deficiencies in technical accuracy without additional compensation unless such corrective action is directly attributable to deficiencies in Owner-furnished information.
- D. *Consultants:* Engineer may retain such Consultants as Engineer deems necessary to assist in the performance or furnishing of the services, subject to reasonable, timely, and substantive objections by Owner. In its Proposal, Engineer designated Consultants to work on the Project, whose services are included in Basic Services described in Part 1 of Exhibit A and whose fees are included in Section C2.01 of Exhibit C, and Owner hereby agrees to retention of those designated Consultants. Prior to the retention of additional Consultants, Engineer shall provide written notice to Owner and allow Owner a reasonable period of time to object to the retention of, and expense related to, the additional Consultants.
- E. *Reliance on Others:* Subject to the standard of care set forth in Paragraph 6.01.A, Engineer and its Consultants may use or rely upon design elements and information ordinarily or customarily furnished by others, including, but not limited to, specialty contractors, manufacturers, suppliers, and the publishers of technical standards.
- F. *Compliance with Laws and Regulations, and Policies and Procedures:*
 - 1. Engineer and Owner shall comply with applicable Laws and Regulations in effect at the time the services are rendered.

2. Engineer shall comply with any and all policies, procedures, and instructions of Owner that are applicable to Engineer's performance of services under this Agreement and that Owner provides to Engineer in writing, subject to the standard of care set forth in Paragraph 6.01.A, and to the extent compliance is not inconsistent with professional practice requirements.
3. This Agreement is based on Laws and Regulations and Owner-provided written policies and procedures as of the Effective Date. The following may be the basis for modifications to Owner's responsibilities or to Engineer's scope of services, times of performance, or compensation:
 - a. changes after the Effective Date to Laws and Regulations.
 - b. the receipt by Engineer after the Effective Date of Owner-provided written policies and procedures.
 - c. changes after the Effective Date to Owner-provided written policies or procedures.
- G. Engineer shall not be required to sign any document, no matter by whom requested, that would result in the Engineer having to certify, guarantee, or warrant the existence of conditions whose existence the Engineer cannot ascertain. Owner agrees not to make resolution of any dispute with the Engineer or payment of any amount due to the Engineer in any way contingent upon the Engineer signing any such document.
- H. If the EJCDC forms are used for the Construction Contract, the general conditions for any construction contract documents prepared hereunder are to be EJCDC® C-700 "Standard General Conditions of the Construction Contract" (2013 Edition), prepared by the Engineers Joint Contract Documents Committee, as modified, upon agreement of the Contractor and as modified by Owner or Contractor, if at all. Any change to the Standard General Conditions of the Construction Contract which impact the Engineer must be reviewed and approved by the Engineer in writing.
- I. Engineer shall not at any time supervise, direct, control, or have authority over any Constructor's work, nor shall Engineer have authority over or be responsible for the means, methods, techniques, sequences, or procedures of construction selected or used by any Constructor, or the safety precautions and programs incident thereto, for security or safety at the Site, nor for any failure of a Constructor to comply with Laws and Regulations applicable to that Constructor's furnishing and performing of its work. Engineer shall not be responsible for the acts or omissions of any Constructor.
- J. Engineer neither guarantees the performance of any Constructor nor assumes responsibility for any Constructor's, failure to furnish and perform the Work in accordance with the Construction Contract Documents or any schedule for completion of the Work, except that Engineer shall be obligated, if retained in an amendment to this Agreement, to act as Owner's representative related to the Project and provide services mutually agreed to by the Parties, which may include but are not limited to, providing certain notifications regarding Constructor's work to Owner.

- K. Engineer shall not be responsible for any decision made regarding the Construction Contract Documents, or any application, interpretation, clarification, or modification of the Construction Contract Documents, other than those made by Engineer or its Consultants.
- L. Engineer is not required to provide and does not have any responsibility for surety bonding or insurance-related advice, recommendations, counseling, or research, or enforcement of construction insurance or surety bonding requirements.
- M. Engineer's services do not include providing legal advice or representation.
- N. Engineer's services do not include (1) serving as a "municipal advisor" for purposes of the registration requirements of Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act (2010) or the municipal advisor registration rules issued by the Securities and Exchange Commission, or (2) advising Owner, or any municipal entity or other person or entity, regarding municipal financial products or the issuance of municipal securities, including advice with respect to the structure, timing, terms, or other similar matters concerning such products or issuances.
- O. In addition to exercising the standard of care set forth in 6.01A, while at the Site, Engineer, its Consultants, and their employees and representatives shall comply with the applicable requirements of Contractor's and Owner's safety programs of which Engineer has been informed in writing.

6.02 *Use of Documents*

- A. All Documents are instruments of service, and Engineer shall retain an ownership and property interest therein (including the copyright and the right of reuse at the discretion of the Engineer) whether or not the Project is completed.
- B. If Engineer is required to prepare or furnish Drawings or Specifications under this Agreement, Engineer shall deliver to Owner at least one original printed record version of such Drawings and Specifications, signed and sealed according to applicable Laws and Regulations.
- C. Owner may make and retain copies of Documents for information and reference in connection with the use of the Documents on the Project. Engineer grants Owner a limited license to use the Documents on the Project, extensions of the Project, and for related uses of the Owner on related to or associated with this Project, subject to receipt by Engineer of full payment due and owing for all services relating to preparation of the Documents, and subject to the following limitations: (1) Owner acknowledges that such Documents are not intended or represented to be suitable for use on the Project unless completed by Engineer, or for use or reuse by Owner or others on extensions of the Project, on any other project, or for any other use or purpose, without written verification or adaptation by Engineer; (2) any such use or reuse, or any modification of the Documents, without written verification, completion, or adaptation by Engineer, as appropriate for the specific purpose intended, will be at Owner's sole risk and without liability or legal exposure to Engineer or to its officers, directors, members, partners, agents, employees, and Consultants; (3) only to the extent permitted by law, as set forth in paragraph 8.09.A below, Owner shall indemnify and hold harmless Engineer and its officers, directors, members, partners, agents, employees, and Consultants from all claims, damages, losses, and expenses,

including attorneys' fees, arising out of or resulting from any use, reuse, or modification of the Documents without Engineer's written authorization and its verification, completion, or adaptation by Engineer; and (4) such limited license to Owner shall not create any rights in third parties.

- D. If Engineer at Owner's request verifies the suitability of the Documents, completes them, or adapts them for extensions of the Project or for any other purpose, then Owner shall compensate Engineer at rates or in an amount to be agreed upon by Owner and Engineer.
- E. Notwithstanding anything contained herein, the Parties recognize and agree that Owner is retaining Engineer pursuant to this Agreement to complete the Engineering Design Plans. Once completed, as long as Owner has made payments according to this Agreement, the Engineering Design Plans, along with any documents, drawings, specifications, and the like included therewith, shall be the Owner's property and Owner shall have the right to use the Engineering Design Plans as Owner desires and shall not be obligated to notify or obtain approval from Engineer for such use.

6.03 *Electronic Transmittals*

- A. Owner and Engineer may transmit, and shall accept, Project-related correspondence, Documents, text, data, drawings, information, and graphics, in electronic media or digital format, either directly, or through access to a secure Project website, in accordance with a mutually agreeable protocol.
- B. If this Agreement does not establish protocols for electronic or digital transmittals, then Owner and Engineer may 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 computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

6.04 *Insurance*

- A. Engineer shall procure and maintain insurance as set forth in Exhibit G. Engineer shall cause Owner to be listed as an additional insured on the required applicable general liability insurance policy carried by Engineer. Engineer shall use commercially reasonable efforts to contractually require that Consultants procure and maintain insurance in appropriate limits and that Consultants list Owner as an additional insured on the required general liability insurance policy. Engineer shall not be required to carry insurance under this Agreement for the construction phase of the Project.
- B. Owner shall procure and maintain insurance. For purposes of this Agreement only, which does not cover the construction phase, and not for purposes of any subsequent agreement or work that may relate to the construction phase, Owner waives all claims against the Engineer that may be connected to construction phase administrative, engineering, or professional services except for those services that are expressly required of Engineer in Exhibit A.

- C. Owner shall require Contractor to purchase and maintain policies of insurance covering workers' compensation, general liability, motor vehicle damage and injuries, and other insurance necessary to protect Owner's and Engineer's interests in the Project and require Contractor to include Engineer as an additional insured on Contractor's policies of insurance for general liability and motor vehicle damage and injuries, as well as any excess/umbrella policies and waive rights of subrogation against Engineer for such policies as well.
- D. Owner and Engineer shall each deliver to the other certificates of insurance evidencing the coverages indicated in Exhibit G. Such certificates shall be furnished prior to commencement of Engineer's services and at renewals thereafter during the life of the Agreement.
- E. All policies of property insurance relating to the Project, including but not limited to any builder's risk policy, shall provide for waiver of subrogation rights, and 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 insured thereunder or against Engineer or its Consultants. Owner and Engineer waive all rights against each other, Contractor, the Consultants, and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, to recover for losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by any builder's risk policy and any other property insurance relating to the Project. Owner and Engineer shall take appropriate measures in other Project-related contracts to secure waivers of rights consistent with those set forth in this paragraph.
- F. All policies of insurance shall contain a provision or endorsement that the coverage afforded will not be canceled, and that renewal will not be refused, until at least 10 days prior written notice has been given to the primary insured. Upon receipt of such notice, the receiving party shall promptly forward a copy of the notice to the other party to this Agreement.
- G. At any time, subsequent to the execution of this Agreement, Owner may request that Engineer or its Consultants, at Owner's sole expense, provide additional insurance coverage, If so requested by Owner, and if commercially available, Engineer shall obtain and shall require its Consultants to obtain such additional insurance coverage, for such periods of time as requested by Owner, and Exhibit G will be supplemented to incorporate these requirements.

6.05 *Suspension and Termination*

A. *Suspension:*

- 1. *By Owner:* In its sole discretion, Owner may suspend the Project for up to 90 days upon seven days written notice to Engineer.
- 2. *By Engineer:* Engineer may, after giving seven days written notice to Owner, suspend services under this Agreement if Owner has failed to pay Engineer for invoiced services and expenses, as set forth in Paragraph 4.02.B, or in response to the presence of Constituents of Concern at the Site, as set forth in Paragraph 6.10.D.

- B. *Termination:* The obligation to provide further services under this Agreement may be terminated:

1. For cause,
 - a. by either party upon 30 days written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof through no fault of the terminating party.
 - b. by Engineer:
 - 1) upon seven days written notice if Owner demands that Engineer furnish or perform services contrary to Engineer's responsibilities as a licensed professional; or
 - 2) upon seven days written notice if the Engineer's services for the Project are delayed or suspended for more than 90 days for reasons beyond Engineer's control, or as the result of the presence at the Site of undisclosed or previously unknown Constituents of Concern, as set forth in Paragraph 6.10.
 - 3) Engineer shall have no liability to Owner on account of such termination.
 - c. Notwithstanding the foregoing, this Agreement will not terminate under Paragraph 6.06.B.1.a if the party receiving such notice begins, within seven days of receipt of such notice, to correct its substantial failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt thereof; provided, however, that if and to the extent such substantial failure cannot be reasonably cured within such 30 day period, and if such party has diligently attempted to cure the same and thereafter continues diligently to cure the same, then the cure period provided for herein shall extend up to, but in no case more than, 60 days after the date of receipt of the notice.
2. For convenience, by Owner effective upon Engineer's receipt of written notice from Owner.
- C. *Effective Date of Termination:* The terminating party under Paragraph 6.06.B may, in its discretion, set the effective date of termination at a time up to 30 days later than otherwise provided to allow Engineer to demobilize personnel and equipment from the Site, to complete tasks whose value would otherwise be lost, to prepare notes as to the status of completed and uncompleted tasks, and to assemble Project materials in orderly files.
- D. *Payments Upon Termination:*
 1. In the event of any termination under Paragraph 6.06, Engineer will be entitled to invoice Owner and to receive full payment for all services performed or furnished in accordance with this Agreement and all Reimbursable Expenses incurred through the effective date of termination. Upon making such payment, Owner shall have the limited right to the use of Documents, at Owner's sole risk, subject to the provisions of Paragraph 6.03.
 2. In the event of termination by Owner for convenience or by Engineer for cause, Engineer shall be entitled, in addition to invoicing for those items identified in Paragraph 6.06.D.1, to invoice Owner and receive payment of a reasonable amount for services and expenses directly attributable to termination, both before and after the effective date of

termination, such as reassignment of personnel, costs of terminating contracts with Engineer's Consultants, and other related close-out costs, using methods and rates for Additional Services as set forth in Exhibit C. Prior to invoicing, Engineer shall forward to Owner the proposed "reasonable amount" and Owner shall have ten days to review and, in its discretion, object to such amount, in which case the parties shall endeavor to agree upon the "reasonable amount" for such delineated services and expenses.

6.06 *Controlling Law*

This Agreement is to be governed by the Laws and Regulations of the State of Colorado. Venue for any action shall be in the County of Weld, State of Colorado.

6.07 *Successors, Assigns, and Beneficiaries*

- A. Neither Owner nor Engineer may assign, sublet, or transfer any rights under or interest (including, but without limitation, money that is due or may become due) in this Agreement without the written consent of the other party, except to the extent that any assignment, subletting, or transfer is mandated by law. 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 this Agreement. Nothing in this Paragraph prevents Engineer from subcontracting any portion of its services to consultants as provided in the Contract Documents.
- B. Contractor may engage temporary staffing agencies or obtain assistance from its affiliates and subsidiaries including, without limitation, Burns & McDonnell Canada Ltd., Burns & McDonnell International Inc., and Burns & McDonnell India Pvt. Ltd. ("Labor Sources") to fulfill Contractor's performance obligations under this Agreement. The parties agree that contracts, purchase orders, or similar agreements between Contractor and any Labor Sources are not subcontracts as that term is used in this Agreement, and personnel from such Labor Sources shall be billed according to the applicable rate sheet for the Scope of Work as if such personnel is a direct hire employee. Personnel from Labor Sources shall be considered agents of Contractor and able to act on behalf of Contractor within the scope of the authority granted such personnel according to job function and billing classification.
- C. Unless expressly provided otherwise in this Agreement:
 - 1. Nothing in this Agreement shall be construed to create, impose, or give rise to any duty owed by Owner or Engineer to any Contractor, Constructor, Subcontractor, lender or other third-party individual or entity, or to any surety or indemnity for or employee of any of them.
 - 2. All duties and responsibilities undertaken pursuant to this Agreement will be for the sole and exclusive benefit of Owner and Engineer and not for the benefit of any other party.
 - 3. At the time of negotiation of the Construction Contract Documents, upon written request of Engineer, Owner agrees to request that the substance of the provisions of this Paragraph 6.08.B appear in the Construction Contract Documents.

6.08 *Dispute Resolution*

- A. Owner and Engineer agree to negotiate all disputes between them in good faith for a period of 30 days from the date of notice prior to invoking the procedures of Exhibit H or other provisions of this Agreement or exercising their rights at law. Such negotiations shall include the designated representatives of each party identified in this Agreement and required by Paragraph 8.03.A.
- B. If the parties fail to resolve a dispute through negotiation under Paragraph 6.09.A, then either or both may invoke the procedures of Exhibit H. If Exhibit H is not included, or if no dispute resolution method is specified in Exhibit H, then the parties must first submit the dispute to mediation before a mediator jointly chosen in a location mutually agreed upon. If mediation is not successful, the parties may exercise their rights at law.

6.09 *Environmental Condition of Site*

- A. Owner represents to Engineer that as of the Effective Date to the best of Owner's knowledge no Constituents of Concern exist at or adjacent to the Site, other than those (i) disclosed in writing to Engineer, (ii) regularly occurring or existing at a water treatment site or (iii) discovered, or should have been discovered, by Engineer during the Engineer's requisite due diligence conducted prior to the execution of this Agreement.
- B. If Engineer encounters or learns of an undisclosed or unknown Constituent of Concern at the Site, then Engineer shall notify (1) Owner and (2) appropriate governmental officials if Engineer reasonably concludes that doing so is required by applicable Laws or Regulations.
- C. If Engineer or any other party encounters, uncovers, or reveals an undisclosed or unknown Constituent of Concern, then Owner shall promptly determine whether to retain a qualified expert to evaluate such condition or take any necessary corrective action.
- D. If investigative or remedial action, or other professional services, are necessary with respect to undisclosed Constituents of Concern, or if investigative or remedial action beyond that reasonably contemplated is needed to address a disclosed or known Constituent of Concern, then Engineer may, at its option and without liability for consequential or any other damages, suspend performance of services on the portion of the Project affected thereby until such portion of the Project is no longer affected.
- E. If the presence at the Site of undisclosed or unknown Constituents of Concern adversely affects the performance of Engineer's services under this Agreement, then the Engineer shall have the option of (1) accepting an equitable adjustment in its compensation or in the time of completion, or both; or (2) terminating this Agreement for cause on seven days' notice.
- F. Owner acknowledges that Engineer is performing professional services for Owner and that Engineer is not and shall not be required to become an "owner," "arranger," "operator," "generator," or "transporter" of hazardous substances, as defined in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, which are or may be encountered at or near the Site in connection with Engineer's activities under this Agreement.

6.10 Indemnification and Mutual Waiver

- A. *Indemnification by Engineer:* To the fullest extent permitted by Laws and Regulations, as allowed by parties to a contract, Engineer shall indemnify and hold harmless Owner, and Owner's officers, directors, members, partners, agents, consultants, and employees, from losses, damages, and judgments (including reasonable consultants' and attorneys' fees and expenses) arising from or relating to the Project, but only to the extent caused by any negligent and/or willful act or omission of Engineer or Engineer's officers, directors, members, partners, agents, employees, or Consultants.
- B. *Indemnification by Owner:* Only to the extent permitted by law, as set forth in paragraph 8.09.A below, Owner shall indemnify and hold harmless Engineer and its officers, directors, members, partners, agents, employees, and Consultants from losses, damages, and judgments (including reasonable consultants' and attorneys' fees and expenses) arising from third-party claims or actions relating to the Project, provided that any such losses, damages, or judgment are 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 Owner or Owner's officers, directors, members, partners, agents, employees, or Contractors.
- C. *Environmental Indemnification:* Only to the extent permitted by law, as set forth in paragraph 8.09.A below, Owner shall defend, indemnify and hold harmless Engineer and its officers, directors, members, partners, agents, employees, and Consultants from all claims, costs, losses, damages, actions, and judgments (including reasonable consultants' and attorney's fees and expenses) caused by, arising out of, relating to, or resulting from a Constituent of Concern at, on, or under the Site, provided that (1) any such claim, cost, loss, damages, action, or judgment 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, and (2) nothing in this paragraph shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own willful misconduct.
- D. *No Defense Obligation:* The indemnification commitment in this Agreement does not include a defense obligation by the indemnitor unless such obligation is expressly stated.
- E. *Percentage Share of Negligence:* To the fullest extent permitted by Laws and Regulations, a party's total liability to the other party and anyone claiming by, through, or under the other party for any cost, loss, or damages caused in part by the negligence of the party and in part by the negligence of the other party or any other negligent entity or individual, shall not exceed the percentage share that the party's negligence bears to the total negligence of Owner, Engineer, and all other negligent entities and individuals.
- F. *Mutual Waiver:* To the fullest extent permitted by Laws and Regulations, Owner and Engineer waive against each other, and the other's employees, officers, directors, members, agents, insurers, partners, and consultants, any and all claims for or entitlement to special, incidental, indirect, or consequential damages, which include but are not limited to, losses of use, income, anticipated profit, financing, business and reputation, damages to customers of Owner, lost sales and opportunities, arising out of, resulting from, or in any

way related to this Agreement or the Project, from any cause or causes, except to the extent the damages arise from Engineer's negligent or willful and wanton conduct.

6.11 *Records Retention*

- A. Engineer shall maintain on file in legible form, for a period of five years following completion or termination of its services, all Documents, records (including cost records), and design calculations related to Engineer's services or pertinent to Engineer's performance under this Agreement. Upon Owner's request, Engineer shall provide a copy of any such item to Owner at cost.
- B. Engineer recognizes and agrees that Owner is a public entity subject to the provisions of the Colorado Open Records Act, C.R.S. §§ 24-72-200.1, *et seq.* ("CORA"), and that Owner may be required to disclose Documents, records, and design calculations pursuant to CORA.

6.12 *Miscellaneous Provisions*

- A. *Notices:* Any notice required under this Agreement will be in writing, addressed to the appropriate party at its address on the signature page and given personally, by registered or certified mail postage prepaid, or by a commercial courier service. All notices shall be effective upon the date of receipt. Notwithstanding the foregoing, notice may be provided by electronic mail ("E-mail") on the condition that the receiving party acknowledges receipt of the E-mail and does not, upon such acknowledgment, object to the form of notice.
- B. *Survival:* All express representations, waivers, indemnifications, and limitations of liability included in this Agreement will survive its completion or termination for any reason.
- C. *Severability:* Any provision or part of the Agreement held to be void or unenforceable under any Laws or Regulations shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Engineer, which agree that the Agreement 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.
- D. *Waiver:* 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 Agreement.

ARTICLE 7 – DEFINITIONS

7.01 *Defined Terms*

- A. Wherever used in this Agreement (including the Exhibits hereto) terms (including the singular and plural forms) printed with initial capital letters have the meanings indicated in the text above, in the exhibits, or in the following definitions:
 - 1. *Addenda*—Written or graphic instruments issued prior to the opening of bids which clarify, correct, or change the bidding requirements or the proposed Construction Contract Documents.

2. *Additional Services*—The services to be performed for or furnished to Owner by Engineer in accordance with Part 2 of Exhibit A of this Agreement.
3. *Agreement*—This written contract for professional services between Owner and Engineer, including all exhibits identified in Paragraph 8.01 and any duly executed amendments.
4. *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 Construction Contract.
5. *Basic Services*—The services to be performed for or furnished to Owner by Engineer in accordance with Part 1 of Exhibit A of this Agreement.
6. *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 Construction Contract Price or the Construction Contract Times, or other revision to the Construction Contract, issued on or after the effective date of the Construction Contract.
7. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth in the Construction Contract, seeking an adjustment in Construction Contract Price or Construction Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Construction Contract Documents or the acceptability of Work under the Construction Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Construction Contract.
8. *Constituent of Concern*—Asbestos, petroleum, radioactive material, 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.
9. *Construction Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
10. *Construction Contract Documents*—Those items designated as “Contract Documents” in the Construction Contract, and which together comprise the Construction Contract.
11. *Construction Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Construction Contract Documents.

12. *Construction Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve milestones, if any, in the Construction Contract; (b) achieve Substantial Completion; and (c) complete the Work.
13. *Construction Cost*—The cost to Owner of the construction of those portions of the entire Project designed or specified by or for Engineer under this Agreement, including construction labor, services, materials, equipment, insurance, and bonding costs, and allowances for contingencies. Construction Cost does not include costs of services of Engineer or other design professionals and consultants; cost of land or rights-of-way, or compensation for damages to property; Owner's costs for legal, accounting, insurance counseling, or auditing services; interest or financing charges incurred in connection with the Project; or the cost of other services to be provided by others to Owner. Construction Cost is one of the items comprising Total Project Costs.
14. *Constructor*—Any person or entity (not including the Engineer, its employees, agents, representatives, and Consultants), performing or supporting construction activities relating to the Project, including but not limited to Contractors, Subcontractors, Suppliers, Owner's work forces, utility companies, other contractors, construction managers, testing firms, shippers, and truckers, and the employees, agents, and representatives of any or all of them.
15. *Consultants*—Individuals or entities having a contract with Engineer to furnish services with respect to this Project as Engineer's independent professional associates and consultants; subcontractors; or vendors.
16. *Contractor*—The entity or individual with which Owner enters into a Construction Contract.
17. *Documents*—Data, reports, Drawings, Specifications, Record Drawings, building information models, civil integrated management models, and other deliverables, whether in printed or electronic format, provided or furnished in appropriate phases by Engineer to Owner pursuant to this Agreement.
18. *Drawings*—That part of the Construction Contract Documents that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date*—The date indicated in this Agreement on which it becomes effective, but if no such date is indicated, the date on which this Agreement is signed and delivered by the last of the parties to sign and deliver.
20. *Engineer*—The individual or entity named as such in this Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Construction Contract Price or the Construction Contract Times.
22. *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.

23. *Owner*—The individual or entity named as such in this Agreement and for which Engineer's services are to be performed. Unless indicated otherwise, this is the same individual or entity that will enter into any Construction Contracts concerning the Project.
24. *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 services to be performed or furnished by Engineer under this Agreement are a part.
25. *Record Drawings*—Drawings depicting the completed Project, or a specific portion of the completed Project, based on Contractor's record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications, as delivered to Engineer and annotated by Contractor to show changes made during construction.
26. *Reimbursable Expenses*—The expenses incurred directly by Engineer in connection with the performing or furnishing of Basic Services and Additional Services for the Project.
27. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site during the Construction Phase. As used herein, the term Resident Project Representative or "RPR" includes any assistants or field staff of Resident Project Representative. The duties and responsibilities of the Resident Project Representative, if any, are as set forth in Exhibit D.
28. *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.
29. *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 Construction Contract Documents.
30. *Site*—Lands or areas to be indicated in the Construction 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.
31. *Specifications*—The part of the Construction Contract Documents 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.
32. *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.
33. *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 Construction 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.

34. *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.
 35. *Total Project Costs*—The total cost of planning, studying, designing, constructing, testing, commissioning, and start-up of the Project, including Construction Cost and all other Project labor, services, materials, equipment, insurance, and bonding costs, allowances for contingencies, and the total costs of services of Engineer or other design professionals and consultants, together with such other Project-related costs that Owner furnishes for inclusion, including but not limited to cost of land, rights-of-way, compensation for damages to properties, Owner’s costs for legal, accounting, insurance counseling, and auditing services, interest and financing charges incurred in connection with the Project, and the cost of other services to be provided by others to Owner.
 36. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Construction 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 Construction Contract Documents.
 37. *Work Change Directive*—A written directive to Contractor issued on or after the effective date of the Construction Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.
- B. *Day*:
1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

ARTICLE 8 – EXHIBITS AND SPECIAL PROVISIONS

8.01 *Exhibits Included*:

- A. Exhibit A, Engineer’s Services.
- B. Exhibit B, Owner’s Responsibilities.
- C. Exhibit C, Payments to Engineer for Services and Reimbursable Expenses.
- D. ~~Exhibit D, Duties, Responsibilities and Limitations of Authority of Resident Project Representative.~~ (NOT USED)
- E. ~~Exhibit E, Notice of Acceptability of Work.~~ (NOT USED)
- F. ~~Exhibit F, Construction Cost Limit.~~ (NOT USED)
- G. Exhibit G, Insurance.

- H. Exhibit H, Dispute Resolution.
- I. Exhibit I, Limitations of Liability.
- J. ~~Exhibit J, Special Provisions.~~ (NOT USED)
- K. Exhibit K, Form of Amendment to Owner-Engineer Agreement.

8.02 *Total Agreement*

- A. This Agreement, together with the exhibits included above, constitutes the entire agreement between Owner and Engineer and supersedes all prior written or oral understandings. This Agreement may only be amended, supplemented, modified, or canceled by a written instrument duly executed by both parties. Amendments should be based whenever possible on the format of Exhibit K to this Agreement.

8.03 *Designated Representatives*

- A. With the execution of this Agreement, Engineer and Owner shall designate specific individuals to act as Engineer's and Owner's representatives with respect to the services to be performed or furnished by Engineer and responsibilities of Owner under this Agreement. Such an individual shall have authority to transmit instructions, receive information, and render decisions relative to this Agreement on behalf of the respective party whom the individual represents. The Owner recognizes that that Engineer's designated representative is subject to change due to vacations, sick leave, occasional firm commitments to other clients or projects and that when the designated representative is not available, the Engineer shall identify in writing another suitable person as a replacement.

8.04 *Engineer's Certifications*

- A. Engineer certifies that it has not engaged in corrupt, fraudulent, or coercive practices in competing for or in executing the Agreement. For the purposes of this Paragraph 8.04:
 1. "Corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the selection process or in the Agreement execution.
 2. "Fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the selection process or the execution of the Agreement to the detriment of Owner, or (b) to deprive Owner of the benefits of free and open competition.
 3. "Coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the selection process or affect the execution of the Agreement.

8.05 *Governmental Immunity*

- A. Nothing contained in this Agreement shall be construed as a waiver of the limitations on damages or any of the privileges, immunities or defenses provided to, or enjoyed by, Owner under common law or pursuant to statute, including but not limited to the Colorado

Governmental Immunity Act, §§ 24-10-101 *et seq.*, C.R.S., as may be amended from time to time.

8.06 *Appropriation of Funds*

- A. Pursuant to C.R.S. § 24-91-103.6, as may be amended from time to time, Owner has appropriated the money necessary to fund this Project and compensate the Engineer as set forth herein. No change order or other form of directive shall be issued by Owner requiring additional compensable work to be performed by Engineer, which causes the aggregate amount payable under this Agreement to exceed the amount appropriated for the original contract amount, unless the Engineer is given written assurance by Owner that lawful appropriations have been made by Owner to cover the cost of the additional work or unless such work is covered under the remedy-granting provisions of this Agreement.
- B. Pursuant to C.R.S. § 29-1-110, as may be amended from time to time, 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 Agreement shall be terminated effective January 1 of the first fiscal year for which funds are not appropriated.

8.07 *Costs and Attorney's Fees*

- A. In the event of litigation enforcing or interpreting the terms of the Agreement, 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, except that Owner shall only be required to pay such fees to the extent permitted by law considering the limitations set forth in the Colorado Constitution, the Johnstown Home Rule Charter and Colorado statutes, including, but not limited to, those relating to budgeting and appropriations.

8.08 *Illegal Aliens*

- A. Engineer certifies, warrants, and agrees that it shall not knowingly employ or contract with an illegal alien to perform work under this contract and shall confirm the employment eligibility of all employees who are newly hired for employment in the United States to perform work under this contract, through participation in the E-Verify Program or the Department of Labor and Employment program. Engineer shall not knowingly employ or contract with an illegal alien to perform work under this contract or enter into a contract with a sub-consultant that fails to certify to Engineer that the sub-consultant shall not knowingly employ or contract with an illegal alien to perform work under this contract. Engineer (a) shall not use E-Verify Program or Department of Labor and Employment program procedures to undertake pre-employment screening of job applicants while this contract is being performed, (b) shall notify the sub-consultant and Owner within three days if Engineer has actual knowledge that a sub-consultant is employing or contracting with an illegal alien for work under this contract, (c) shall terminate the subcontract if a sub-consultant does not stop employing or contracting with the illegal alien within three days of receiving the notice, and (d) shall comply with reasonable requests made in the course of an investigation, undertaken pursuant to C.R.S. § 8-17.5-102(5), by the Colorado Department of Labor and Employment. If Engineer fails to comply with any requirement of this provision or C.R.S. § 8-17.5-101 *et seq.*, Owner may terminate this contract for breach

and, if so terminated, Engineer shall be liable for actual and, notwithstanding provisions to the contrary in this Agreement, consequential damages.

8.09 *Owner's Indemnification Obligations*

- A. Owner represents that it is prohibited by the Colorado Constitution, the Johnstown Home Rule Charter, the Johnstown Municipal Code, and state law from entering into indemnification obligations without appropriations in its budget which it has not made for this Agreement. Accordingly, notwithstanding anything herein to the contrary, Owner's indemnification obligations set forth in this Agreement are provided only to the extent permitted by law.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement, the Effective Date of which is indicated on page 1.

Owner: []

Engineer: Burns & McDonnell Engineering Company, Inc.

By: _____

Print name: Gary Lebsack

Title: Mayor

Date Signed: []

By: _____

Print name: Dan Korinek

Title: Vice President

Date Signed: _____

ATTEST:

Engineer License or Firm's Certificate No. (if required):
Firm registration not required in Colorado.

Diana Seele, Town Clerk

State of: _____

Address for Owner's receipt of notices:

Town of Johnstown
450 S. Parish Avenue
Johnstown, CO 80534

Address for Engineer's receipt of notices:

Burns & McDonnell Engineering Company, Inc.
9785 Maroon Circle, Suite 400
Centennial, CO 80112

Designated Representative (Paragraph 8.03.A):

Matt LeCerf []

Title: Town Manager []

Phone Number: 970-587-4664 []

E-Mail Address: mlecerf@townofjohnstown.com

Designated Representative (Paragraph 8.03.A):

Dan Korinek

Title: Vice President

Phone Number: 303-474-2224

E-Mail Address: dkorinek@burnsmcd.com

STATE OF COLORADO)

) ss

COUNTY OF _____)

SUBSCRIBED AND SWORN to before me this ____ day of _____, 2021, by xxxxxxxx as

WITNESS my hand and official seal.

My commission expires: _____

Notary Public

This is **EXHIBIT A**, consisting of 29 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated August 17, 2021.

Engineer's Services

Article 1 of the Agreement is supplemented to include the following agreement of the parties.

Engineer shall provide Basic and Additional Services as set forth in the attached Table.

PART 1 – BASIC SERVICES

A1.01 *Scope of Services Table*

Engineer shall provide the following services as summarized below and described in detail below:

1. Project Initiation & Coordination
2. Review of Existing Data & Basis of Design
3. Preliminary Design 30%
4. Detailed Design 60%
5. Optimize Operations
6. Final Design
7. CMAR Selection
8. Equipment Procurement

Scope of Services – Part 1, Basic Services

The Scope of Services proposed includes design services for an expansion of the existing 6.2 million gallons per day (MGD) capacity water treatment plant (WTP) to 12.5 MGD. The WTP expansion includes:

- Modification of the existing pretreatment system to saturated air flotation (SAF).
- New ozone system for taste and odor control.
- New biologically active filtration (BAF) and associated chemical systems.
- New disinfection contact basin with separate backwash supply tank.
- New distribution pump station.
- New backwash waste tank.
- New recycle pump station.
- Associated yard piping and related structures.
- New chemical storage and dosing systems.
- Related electrical and control system upgrades.
- All Work on the existing WTP property.

Finished water will tie into the existing transmission mains on the WTP property. Backwash waste will be directed to a new storage tank. Recycled water will be sent to the existing raw water tank for blending with the existing incoming raw water. Thickened backwash will be directed to the existing sanitary sewer.

The following items are excluded from the scope:

- Modifications to the Lone Tree Reservoir pump station or powdered activated carbon (PAC) system.
- Addition of a second raw water transmission main from the Lone Tree Reservoir.
- Changes to the existing raw water piping at the WTP site.
- Modification of the two existing ground storage tanks.
- Treatment of thickened backwash waste. Solids will be directed to the existing sanitary sewer.
- Changes to the site access roadway.
- Expansion of the WTP on adjacent property.

Task Series 100 – Project Initiation & Collaboration

Task 101 – Project Kickoff Meeting:

Engineer shall coordinate and lead a Project Kickoff Meeting at the WTP. During the Project Kickoff meeting the collective project team shall regroup the team on the project goals, coordinate activities, discuss project requirements, establish a project schedule, identify key project issues/concerns, identify key personnel who are to provide input on the project, and get initial input on design items. A site walk with the Owner will occur immediately after the Kickoff Meeting.

Task 102 – Weekly Progress Meetings:

The Engineer's project manager will prepare for, attend, and conduct weekly progress meetings. It is currently anticipated that half of the meetings will be in person and half will be virtual. Regular workshop attendees will include the project manager and a process engineer. Other resources will participate as part of a virtual meeting. The Engineer will provide meeting minutes with a decision log and a list of action items. Meeting minutes will be distributed via e-mail. When workshops or review meeting coincide with weekly progress meetings the meetings will be combined. Assumes 12 months of meetings during the design phase. This task also includes internal progress meetings.

Task 103 – Project, Risk and Resource Management, Schedule, and Budget Controls:

Engineer shall provide project management services for the design phase includes all project coordination between the Owner and the team members. The Engineer will monitor project status, monitor project schedule, monitor project deliverables, and coordinate resources including sub-Engineers. The Engineer will prepare a risk register and a decision log at project initiation and maintain throughout the course of the design phase. The Engineer will utilize our internal accounting systems to track budget and manage project scope.

Task Series 200 – Review Existing Data & Basis of Design

Task 201 – Review Existing Documents:

Engineer shall prepare a document request for the Owner existing data, including record drawings, operational records, and. The Engineer will summarize the data in the basis of design report (BODR) and identify any gaps for the Owner to collect.

Task 202 – Develop Permitting Matrix:

Engineer shall assist with necessary permitting as identified in the BODR and listed in the Table A-1 below. Engineer shall prepare a permitting matrix to identify potential permit requirements for the project. The permitting matrix will identify local, state, and federal authorities, permit requirements, likelihood of needing a permit, responsible party for submitting permit and estimated duration for submittal review and negotiation. We currently do not include fee to perform the services for all of these permits. We have included fees to perform all permits coordinated by the Engineer that are certain (100%) required. The Engineer will determine which other permits are required and any additional permitting work required will be included in additional services. Other permits may be required by the Contractor. Engineer has assumed that the Owner will pay all permit application and review fees.

Table A 1 - Preliminary Permitting Matrix

Permit/Compliance		Permit/Compliance	Administering Agency	Requirement	Trigger	Probability of Need	Estimated Duration to Acquire Authorization	Permit Coordinator and Submitter
Federal	Clean Water Act, Section 404	Clean Water Act, Section 404	U.S. Army Corp of Engineers (USACE), Omaha District	Permanent wetland impacts greater than 0.50 acre require an Individual Permit, including mitigation and public involvement. If permanent wetland impacts range from 0.10 to 0.50 acre, USACE notification and application is required to obtain a nationwide permit (NWP); if less than 0.1 acre, no USACE notification is required.	Temporary and/or permanent impacts on wetlands and/or jurisdictional features.	Low (25%) Depends on whether wetlands and streams onsite can be avoided in siting facilities.	If present, coordination with USACE could take 2-6 months. Submit after BODR. Assumes wetland areas less than 0.5 acres.	Engineer
	Endangered Species Act (ESA) Section 7 and 10 Consultation	Endangered Species Act (ESA) Section 7 and 10 Consultation	USFWS	The ESA § 7 directs all Federal agencies to work to conserve federally listed threatened, endangered, candidate and proposed (TECP) species and to use authorities to further the purposes of the ESA. Section 7 and 10 of the ESA is the mechanism by which Federal agencies and private citizens ensure actions, including those they fund or authorize, do not jeopardize the existence of TECP species.	Presence of protected species within or adjacent to areas affected by the Project	Low (25%). Not likely present	If present, coordination with USFWS would take about 1 year. If not present, 60 days. Submit after BODR.	Engineer
	Migratory Bird Treaty Act (MBTA)	Migratory Bird Treaty Act (MBTA)	USFWS	Avian studies and nest surveys could be required by the USFWS to demonstrate compliance with the ESA, MBTA, and the Bald and Golden Eagle Protection Act (BGEPA).	Breeding habitat clearing during nesting season	Moderate (50%). Depends on nesting species in the area and construction schedule.	If nesting habitat clearing can occur outside of nesting season, efforts would be minor.	Engineer
	Bald and Golden Eagle Protection Act	Bald and Golden Eagle Protection Act	USFWS	The BGEPA (16 U.S.C. 668-668c) prohibits anyone, without a permit, from "taking" bald eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ..., alive or dead, or any part, nest, or egg thereof."	Surface occupancy within 0.25-mile or construction activities within 0.5 mile of bald or golden eagle nests or bald eagle winter roost sites (see CPW recommended buffer distances in section 3.1.4)	Low (25%). Although a bald eagle was observed, we do not believe an incidental take permit (ITP) will be necessary.	If buffer zones and seasonal restrictions can be implemented, efforts would be minor.	Engineer
	Notice of Proposed Construction or Alteration Determination of No Hazard to Air Navigation	Notice of Proposed Construction or Alteration Determination of No Hazard to Air Navigation	Federal Aviation Administration (FAA)	The requirements for filing with the FAA for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference CFR Title 14 Part 77.9.	Structure is above 200 ft, proximity to an airport, potential glare impacts for solar sites within 2 miles of an airport.	Very low (<10%)	Must be filed 45 days prior to construction.	Engineer

Exhibit A – Engineer's Services

EJCDC® E-500, Agreement Between Owner and Engineer for Professional Services.

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Permit/Compliance		Permit/Compliance	Administering Agency	Requirement	Trigger	Probability of Need	Estimated Duration to Acquire Authorization	Permit Coordinator and Submitter
	Spill Prevention, Control, and Countermeasures (SPCC); 40 CFR Part 112, or 40 CFR Part 300.	Spill Prevention, Control, and Countermeasures (SPCC); 40 CFR Part 112, or 40 CFR Part 300.	Environmental Protection Agency (EPA), Region 8	SPCC plan.	Transformers with a 55-gallon capacity or greater	Moderate (50%). If a transformer will be located on site, a SPCC will be required.	Final Design/ Construction No pre-approval required. Must be kept onsite and reviewed every 5 years or if there is a change in the site.	Contractor
State	CPW Coordination	CPW Coordination	CPW, State-protected species	Colorado law states wildlife and their environment are to be protected, preserved, enhanced, and managed for the use, benefit, and enjoyment of the people of this state and its visitors. CPW routinely reviews development project proposals and makes recommendations for areas where state-protected plant and animal species are known to occur. CPW recommends conducting raptor surveys during the breeding season and implementing nest buffers (nesting season is year-round depending on the raptor species) and season restrictions (150 feet to 0.5 miles, depending on the raptor species; CPW 2008)	Presence of protected species within or adjacent to areas affected by the Project	Moderate (50%). Coordination is likely.	If present, coordination with USFWS and CPW would take 30-90 days.	Engineer
	National Pollutant Discharge Elimination System (NPDES) Permit; Stormwater Management Plan (SWMP)	National Pollutant Discharge Elimination System (NPDES) Permit; Stormwater Management Plan (SWMP)	Colorado Department of Public Health and Environment (CDPHE); Stormwater protection	If more than 1 acre of disturbance will occur, a SWMP would be developed during final design of the Project and would incorporate an Erosion and Sediment Control Plan.	Greater than 1 acre of disturbance	100%	30 days	Contractor
	General Construction Permit Air Pollutant Emission Notice (APEN)	General Construction Permit Air Pollutant Emission Notice (APEN)	CDPHE: Air Pollution Control Division	Land development refers to all land clearing activities, including but not limited to land preparation such as excavating or grading, for residential, commercial, or industrial development.	Land development and the operation of emitting equipment	High (90%); construction equipment	30 days	Contractor
	National Historic Preservation Act (NHPA), Section 106 Consultation	National Historic Preservation Act (NHPA), Section 106 Consultation	Colorado Office of Archeology and Historic Preservation (OAHP)	Section 106 of the NHPA requires Federal agencies to consider the effects that their federally funded activities and programs have on significant historic properties. "Significant historic properties" are those properties that are included in, or eligible for, the National Register of Historic Places. Section 106 compliance would be required for USACE permits, etc.	Involvement of Federal actions (lands, permits, funding, etc.).	Moderate (50%). If USACE permitting is needed, NHPA compliance will be required.	90 days	Engineer

Exhibit A – Engineer's Services

EJCDC® E-500, Agreement Between Owner and Engineer for Professional Services.

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Permit/Compliance		Permit/Compliance	Administering Agency	Requirement	Trigger	Probability of Need	Estimated Duration to Acquire Authorization	Permit Coordinator and Submitter
	State Highway Access Permit	State Highway Access Permit	Colorado Department of Transportation (CDOT)	To obtain permission to construct, modify, relocate, or close a vehicular access, where such work will be within highway right-of-way (ROW), a state highway access permit is required. To obtain permission, a complete application must be submitted to the issuing authority and a permit issued. Construction may not begin until a Notice to Proceed is approved. Application packages may be obtained from the issuing authority. To investigate. If required, responsibility of contractor.	Digging or excavating within the state ROW	Low (25%). Based on remaining on existing WTP property. High if additional property acquired.	Final Design/ Construction The statewide encroachment permit turnaround performance target is 72 hours.	Engineer or Contractor
	Oversize/ Overweight Permits	Oversize/ Overweight Permits	CDOT	Permit required to move oversize or overweight loads on State roads (85,000 pounds gross maximum, 20,000 pounds per axle maximum) To investigate. If required, responsibility of vendor.	Oversize/overweight loads	Moderate (50%)	30 days	Contractor
	Water quality division	Water quality division	CDPHE	Review and approve facility design	Modification or expansion of existing WTP process	Certain (100%)	90 days	Engineer
Local	Floodplain Development	Floodplain Development	Town of Johnstown	Verify location of works not within floodplain	New construction	Certain (100%)	30 days	Engineer
	Site Development Plan	Site Development Plan	Town of Johnstown	New construction or development within town boundaries	New development	Certain (100%)	120 days	Engineer
	Building Permit	Building Permit	Town of Johnstown	New construction within town boundaries	New construction	Certain (100%)	60 days	Engineer

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Task 203 – Desktop Analysis:

Engineer shall review data provided by Owner (record drawings, operating records). Conduct field visual assessment of existing assets to determine if assets suitable to integrate in the expanded WTP. Prepare technical memorandum (TM) to document the condition of existing assets. Develop up to three (3) potential process trains, and initial sizing calculations. Identify site conditions, includes review of existing soils report, potential for presence of environmental or cultural resources, identify site utilities (water, sanitary sewer, storm, electricity, data, communications, natural gas). Identify integration points with the existing WTP and potential impacts to the existing WTP operations.

The Owner shall be given at least one week to review all design deliverables prior to holding a review meeting or workshop.

Task 204 - Workshop 1 – Overall Treatment Train Options

Prepare agenda and facilitate an Overall Treatment Train Options Selection Workshop at the WTP to evaluate potential candidate treatment trains. Candidate trains include membrane filtration with granular activated carbon (GAC) and ozone and BAF. The preferred conceptual design will be selected using costs and non-monetary factors. The selection matrix will be provided to allow all parties to become familiar prior to the meeting. Engineer will lead a paired-comparison evaluation during the workshop. The workshop will identify the preferred option while noting the advantages and disadvantages to each option. Provide summary notes to document the decisions made during the Selection Workshop.

Task 205 - Water Characterization

Owner to provide population projections as basis for future water demand calculations. Engineer shall use the existing water quality data and conduct additional field analysis to characterize water quality. Engineer shall summarize water quality data in a TM. This task includes an allowance up to \$20,000 for laboratory analytical costs for parameters not included within Owner's available data.

Task 206 - Pretreatment Capacity Analysis

Engineer shall analyze the conversion of the existing dissolved air flotation (DAF) to saturated air flotation (SAF). Includes sending sample water to SAF vendor for jar testing at their facility. Identify process modifications to implement SAF and sequence of construction to minimize impact to operations.

Task 207 - Prepare 2 Layout Options for Selected Treatment Train

Engineer shall prepare two (2) schematic layout options for the expanded WTP. Includes preliminary sizing of process units and proposed structures.

Owner to indicate if the adjacent property will be acquired for the WTP expansion prior to Engineer starting Task 207 to avoid additional Engineer effort to redesign schematic layouts.

Task 208 - Taste & Odor Control Option Selection

Engineer shall prepare comparison of taste and odor control options including granular activated carbon (GAC), ozone, biologically active filtration (BAF). Task will include available operating data from the 2021 GAC demonstration project. Summarize taste and odor control options in a TM.

Task 209 - Workshop 2 - Taste & Odor Control Option Selection

Prepare agenda and facilitate a Taste & Odor Options Selection Workshop to evaluate potential an overall taste and odor control toolbox. Discuss treatment options from source management, blending ratios, PAC at Lone Tree, ozone, BAF and GAC. The workshop will identify the preferred option while noting the

advantages and disadvantages to each option. Provide summary notes to document the decisions made during the Workshop.

Task 210 - Disinfection & Distribution Pump Station Options Development

Engineer shall complete disinfection, distribution storage and pumping analysis, including design of new disinfection contact basin. Coordinate capacity of pump station with Owner for other planned distribution system improvements. Investigate options for reuse of existing ground storage tanks. Improvements to the ground storage tanks are excluded. Prepare design for a separate backwash supply cell to use un-chlorinated water for BAF backwash. Perform desktop analysis on corrosion impact to distribution system. Summarize findings in a TM.

Task 211 - Workshop 3 - Alternative Design Comparison

Engineer shall host an interactive workshop at the Owner's facilities to discuss design documents prepared to date, including all TM and analytical data. Workshop shall discuss anticipated raw water quality, treatment goals, taste and odor options, disinfection contact basin and distribution pump station design. Solicit Owner feedback to make collaborative decisions on the preferred process train for conceptual design.

Task 212 - Prepare Conceptual Design

Engineer shall advance the conceptual design, based on Owner feedback during Workshop 3. Conceptual design includes design drawings to show the selected treatment train layout, structure sizing, utilities, proposed structures and initial process & instrumentation diagrams. Conceptual design package to represent 15% complete design. Engineer to develop opinion of probable construction and annual operating costs, construction schedule and phases.

Based on the 15% design documents, Engineer shall prepare an AACE Class 4 engineer's opinion of probable cost for the project. This cost opinion will be submitted along with the design documents for review and comment by the Owner. The cost opinion will be based on recent bid tabulation information, historical cost data, and discussions with local suppliers and contractors. Assumptions will be included for reference. Conceptual drawings to be submitted in PDF format. Summarize cost and schedule in a TM.

Task 213 - Prepare WTP Siting Options, Construction & Prioritization Phases

Engineer shall prepare phasing plans to show the sequence of construction on the existing WTP property. Engineer shall prepare up to three (3) on the adjacent property. Phasing plan to indicate critical tie-ins that may impact the WTP operations, estimated durations and contingency plans. Work sequence shall identify construction tasks that should be performed during seasonal low demand periods. Summary in TM.

Task 214 - Basis of Design Report

Engineer shall prepare a Basis of Design Report (BODR) to document decisions made, design standards, design criteria, layout, estimated costs and schedule, based on feedback at Workshop.

Task 215 - Workshop 4 - Review Conceptual Design

Engineer shall host an interactive workshop at the Owner's facilities to discuss the conceptual design drawings and TM submitted to date. Solicit Owner feedback to make collaborative decisions on the selected conceptual design. Finalize conceptual design to carry forward into preliminary design. Provide summary notes to document the decisions made during the Workshop.

Task Series 300 – Preliminary Design (30%)

Task 301 - Develop Preliminary Design:

The Engineer will develop a set of schematic (30%) plans for the scope listed above. The 30% plans will consist of civil, architectural, structural, process, mechanical, electrical, and pipeline drawings necessary to convey the intended scope of improvements to potential Construction Manager At-Risk (CMAR) firms. Engineer will provide a PDF of the 30% plans (11"x17"). The plans will be prepared in accordance with Engineer's and/or sub-consultant's drafting standards.

This task includes the development of table of contents for the anticipated specifications for the expanded WTP scope. The Engineer shall finalize the process flow diagram for the WTP. The process flow diagram shall indicate the overall process flow but shall not include most valves or the number of equipment items. The Engineer will finalize the unit process sizing and include the information in a process design sheet in the 30% drawings.

The Engineer will finalize the hydraulics for the expanded WTP, including raw water, settled water, filtered water, treated water and backwash waste. The Engineer will coordinate with the Owner to finalize the hydraulics and coordinate tie-ins to raw or treated water.

Task 302 - Topographic Survey:

Conduct topographic survey requirements, as required by Engineer, to facilitate the detailed design of the expanded WTP on the existing 4.5 acres WTP property. Includes land survey plat, private utility located and title binder for one parcel. This work will be subcontracted.

Task 303 - Geotechnical Investigations:

Conduct geotechnical investigation of the existing WTP property, based on seven (7) boreholes, to develop foundation and pavement design recommendations. This work will be subcontracted.

Task 304 - Preliminary Design Report:

Engineer shall update the BODR with decisions made during the preliminary design phase in a preliminary design report (PDR). Engineer shall update the estimated schedules and construction costs for the PDR.

Task 305 – Review Meeting 1 – Preliminary Design and Phasing:

Engineer shall host a Review Meeting 1 at the Owner's facilities to discuss the 30% design documents. The purpose of this meeting is to provide the Owner and Engineer an opportunity to clarify Owner comments on the documents. Engineer will provide meeting minutes with a decision log and list of action items. Meeting minutes will be distributed via email. Decision log and risk register will be updated.

Task Series 400 – Detailed Design (60%)

401 - Prepare 60% Design:

Engineer shall provide drawings at the 60% design level. The 60% drawings shall include drawings included in the 30% design package, brought to 60%, and additional detail drawings that are needed for final design. The plans will be prepared in accordance with Engineer's and/or subconsultant's drafting standards. The Engineer will develop a set of 60% specifications, consisting of draft specifications from all required engineering disciplines. Engineer will provide a PDF of the 60% plans (11"x17") and specifications. The CMAR shall prepare estimated construction cost, schedule, and sequencing at the 60% and 90% deliverables. It is assumed that there is one work package (no early work packages, such as excavation or foundation packages).

402 - Utility Locates & Test Holes:

Engineer shall sub-contract for utility locates and test holes after site layout confirmed in preliminary design. Prepare utility report compatible with ASCE Class B. Allowance for up to ten (10) test holes. This work will be subcontracted.

403 - Review Meeting 2 - 60% Design:

After the Owner has had an opportunity to review the 60% design documents, Engineer will conduct a 60% design review meeting. The purpose of this meeting is to provide the Owner and Engineer an opportunity to clarify Owner comments on the documents. Engineer will provide meeting minutes with a decision log and list of action items. Meeting minutes will be distributed via email. Decision log and risk register will be updated.

404 - Initial Permitting Support:

Engineer shall prepare initial applications and supporting documents for approval submittals to CDPHE Water Quality Division, Owner Planning and Building Permit. This task includes initial coordination calls with the above entities, including, pre-application meetings, where applicable.

Task Series 500 – Final Design (90%)**501 - Prepare 90% Design:**

Engineer shall provide plans at the 90% design level. The 90% drawings shall include 60% drawings, brought to 90%, and additional detail drawings that are needed for final design. Engineer will provide a PDF of the 90% plans (11"x17"). The plans will be prepared in accordance with BMCD's and/or subconsultant's drafting standards. Engineer shall develop a set of 90% specifications, consisting of specifications from required engineering disciplines. Engineer will provide a PDF of the 90% specifications.

502 - Review Meeting 3 - 90% Design:

After the Owner has had an opportunity to review the 90% design documents, Engineer will conduct a 90% design review meeting. The purpose of this meeting is to provide the Owner and Engineer an opportunity to clarify Owner comments on the documents. Engineer will provide meeting minutes with a decision log and list of action items. Meeting minutes will be distributed via email. Decision log and risk register will be updated.

503 - Final Permitting Support:

Engineer shall coordinate with authorities having jurisdiction, including response to comments on the initial submittals, submit updated documentation for final issue of permits.

504 - Prepare Construction Documents:

Engineer will incorporate any comments from the 90% design documents from the Owner, CMAR and reviewing authorities into the Issued for Construction documents. The issued for construction documents shall be signed and sealed by a professional engineer in the state of Colorado.

505 - Review Meeting 4 – Construction Documents:

Engineer will conduct a final review meeting with the Owner and CMAR to discuss the construction documents. The purpose of this meeting is to provide the Owner and Engineer an opportunity to clarify Owner and CMAR comments on the documents. Engineer will provide meeting minutes with a decision log and list of action items. Meeting minutes will be distributed via email. Decision log and risk register will be updated.

Task Series 600 – CMAR Selection

601 – Project Delivery Workshop

Engineer will host a collaborate Workshop within 30 days of project initiation with the Owner to discuss project delivery options. Options include Design-Bid-Build, Design-Build and Construction Management At-Risk (CMAR). The preferred delivery method will be selected using costs and non-monetary factors. The selection matrix will be provided to allow all parties to become familiar prior to the meeting. The workshop will identify the appropriate form of agreement between the Owner and contractor.

It is assumed for this scope of services that the selected delivery method will be CMAR.

602 – CMAR Execution Workshop

Engineer will host a collaborate Workshop with the Owner to discuss how to execute the project with CMAR delivery. Engineer shall provide a proposed sequence of tasks to the Owner prior to the meeting for their review. Engineer will provide meeting minutes with a decision log and list of action items. Meeting minutes will be distributed via email. Decision log and risk register will be updated.

603 – Prepare Request for Qualifications (RFQ) Documents:

Engineer shall prepare a RFQ document to issue to local construction contractors. The goal of the RFQ is to develop a short list of qualified contractors to invite to the proposal phase. The RFQ shall request contractor qualifications, including proposed staffing, recent project experience and references. Owner shall provide their preferred CMAR forms of agreement for use. Owner shall manage the advertising of the RFQ.

It is assumed that the RFQ documents are issued with the conceptual design (15%) package to provide the interested contractors with a description of the proposed scope of work.

604 - Review Meeting 5 - CMAR RFQ Documents:

Engineer will conduct a review meeting with the Owner to discuss the CMAR RFQ documents. Owner shall provide comments for the Engineer to review and incorporate, where applicable. Engineer shall update the RFQ documents based on the review meeting comments. Engineer will provide meeting minutes with a decision log and list of action items. Meeting minutes will be distributed via email. Decision log and risk register will be updated.

605 - Evaluation of Received Qualification Packages & Development of Short List:

Engineer shall assist the Owner with evaluation of the received RFQ packages and facilitate a discussion on the shortlisted firms. Only firms on the shortlist will be invited to the proposal stage.

606 - Preparation of Request for Proposals (RFP):

Engineer shall prepare an RFP document to issue to the shortlisted firms. CMAR firms will propose on their project approach, schedules, comments on the proposed form of agreement, Phase 1 (pre-construction services) and CMAR fee (% fee on the cost of work). Owner shall manage the advertising of the RFP and related questions. It is assumed that the RFP documents are issued with the preliminary design (30%) package.

607 - Review Meeting 6 - CMAR RFP Documents:

Engineer will conduct a review meeting with the Owner to discuss the CMAR RFP documents. Owner shall provide comments for the Engineer to review and incorporate, where applicable. Engineer shall update the RFP documents based on the review meeting comments. Engineer will provide meeting minutes with a decision log and list of action items. Meeting minutes will be distributed via email.

608 - RFP Period Support:

Engineer shall support the Owner by responding in writing to questions received from CMAR firms.

609 - Evaluation of CMAR Proposals & Contractor Negotiation:

Engineer shall assist the Owner with evaluation of the received RFP packages and facilitate a selection of the preferred CMAR firm. Task includes participating in interviews with three (3) proponents.

610 - Review of Cost Estimates, Schedules, Value Engineering & Constructability Issues:

Engineer will work with the selected CMAR contractor to identify portions of the work that are candidates for early work packages, identify cost-saving or value engineering opportunities, identify long lead time equipment packages, and prioritize the design of these items accordingly. It is assumed that the Owner's building department does not allow partial building permits and that early construction packages are not possible.

CMAR to develop estimated construction costs and schedules at the 60%, 90% and final design milestones. Engineer shall review all estimates prepared by the CMAR, including the Guaranteed Maximum Price development and breakdown for completeness, contract compliance and conformity with the scope of work and the Owner's goals and expectations.

Task Series 700 – Equipment Procurement**701 - Prepare Documents for Early Procurement Packages:**

Engineer shall collaborate with the Owner to identify early procurement packages. This scope of work assumes the following early procurement packages:

- SAF equipment
- Ozone system equipment
- BAF system equipment, including chemical dosing systems
- Pumping units (backwash supply, filtered water, distribution pumps, recycle pumps)
- Diesel generator

Engineer shall prepare technical specifications and layout drawings for the above packages.

702 - Prepare Procurement Request for Proposal Packages:

Engineer shall prepare issued for bid documents for the above equipment packages. Owner shall provide front-end procurement documents in their preferred format and facilitate the solicitation and receipt of proposals.

703 - Review Meeting 7 - Procurement Documents:

Engineer will conduct a review meeting with the Owner to discuss the procurement documents. Owner shall provide comments for the Engineer to review and incorporate, where applicable. Engineer shall update the procurement documents based on the review meeting comments. Engineer will provide meeting minutes with a decision log and list of action items. Meeting minutes will be distributed via email.

704 - Procurement Period Support:

Engineer shall support the Owner by responding in writing to questions received from equipment vendors.

705 - Evaluation & Negotiation of Procurement Packages:

Engineer shall assist the Owner with evaluation of the received equipment package bids. Engineer shall facilitate a selection of the preferred equipment supplier, based on monetary and non-monetary criteria. This scope of work assumes that the CMAR contractor will assume responsibility for procurement of the equipment packages after selection by the Owner and Engineer.

706 - Submittal Review

Engineer shall review compliance submittals from equipment suppliers. Includes initial submittal review, coordination meetings and resubmittal review.

707- Coordination with Installing Contractor

Engineer shall coordinate with CMAR contractor on the scope, technical criteria, schedule, and CMAR-contracts of the equipment packages.

Lonetree 36" Raw Water Transmission Pipeline

1. Project Understanding

Design will include waterline material selection, routing, cathodic protection, and other necessary work for a complete pipeline.

The work generally includes:

1. Design of ~11.2 miles of 36-inch diameter (approximate) waterline
2. Conduct pipeline material option analysis, pipeline material recommendations
3. Design connections of the new waterline to existing infrastructure
4. Develop alignment alternative and recommend the highest value route.
5. Permitting support
6. Details of new connections
7. Standard and special water transmission line details
8. Easement legal descriptions/exhibits
9. Waterline appurtenance design including valving, air/vacuum valves, blowoff assemblies, etc.
10. Erosion, and Sediment Control Drawings

2. Scope of Services

TASK SERIES 2100 – Project Initiation & Coordination

Task 2101 – Project Kickoff Meeting:

Engineer will attend a project kick-off meeting to be held with staff. The meeting shall include discussion of pertinent items for the project such as:

- Present project background and overview.
- Introduce key staff involved in the project including personnel who are to provide information/services.
- Determine lines of communication and project contacts (contact list to be developed).
- Identify available existing data and exchange.
- Discuss key issues and goals.

- Review the project schedule and milestones.
- Define sub-consultants and their roles.
- Outline possible community concerns, neighboring residents, businesses, easements, etc.
- Discuss the geotechnical needs for the project.
- Discuss considerations for connections to the existing system.
- Discuss methods of construction that will be considered.
- Discuss agency coordination such as USACOE, USFWS, Weld County, and CDOT in addition to future developments in the area.

A meeting agenda and subsequent meeting minutes will be distributed to all meeting participants

Task 2102 – Data Collection and Review of Background Information:

Engineer will review available information provided by the Owner including:

- WTP Drawings
- Lone Tree Pump Station Drawings
- Lone Tree Pipeline Drawings
- Surge Analysis
- Other as-built record drawings
- GIS mapping
- Utility maps including Key Maps
- Aerial photography
- Existing easement documents
- Existing details

Task 203 – Conduct Weekly Progress Meetings:

Engineer will conduct weekly team coordination meetings via telephone conference and/or utilize Microsoft Teams to discuss the status of the report and any project topics. For the purposes of this proposal, Engineer has assumed that the design phase will take approximately ten (10) months to complete. As such, our scope and fee includes hours to host forty (40) coordination meetings (does not include kick-off) via telephone or LiveMeeting. These meeting are in addition to design review meetings (60%, and 90% design level). A meeting agenda and subsequent meeting minutes will be distributed to all meeting participants.

TASK SERIES 2200 – Land Ownership, Easement Support, & Permitting

Task 2201 – Prepare Exhibit Showing Property Lines and Land Ownership Information and Easements:

Engineer will prepare an exhibit of property line boundaries and ownership information along the selected alignment, and it will include the surrounding project area. This work will be subcontracted.

Task 2202 –Develop and Maintain a List of Property owners for Each Alignment Alternative:

Engineer will develop a list of property owners for each alignment alternative considered. The intent of our design will be to minimize the number of impacted landowners.

Task 2203 – Easement Legal Descriptions and Exhibits:

Engineer's surveying subconsultant, King Surveying, will complete up to ten (10) legal descriptions for easements identified in Task 2201. Legal descriptions will include the written description and be supported by an exhibit (map). Additional legal descriptions/exhibits can be provided at \$900 for each. This work will be subcontracted.

Task 2204 – Develop and Maintain a Permit Matrix:

Engineer will conduct a regulatory analysis and prepare a matrix that identifies permits, licenses, agreements, and similar approvals required for design and construction of the Project. Engineer shall assist with necessary permitting as required by this work. Such permitting may consist of working with local, state, and federal agencies. Necessary permits for this work may include permits through the USACOE, USFWS, Colorado Department of Health and Environment, Weld County, and CDOT. Permits required to be obtained by the Contractor will be referenced in the specifications.

Task 2205 – Coordination and Permitting with Weld County:

Engineer will coordinate and communicate with Weld County. We will schedule a virtual review meeting with the County once design has reached 30%. We will discuss the County's requirements with regards to placement, restoration, etc. For the purposes of our fee, we have assumed that the Town will pay all review and processing fees.

Task 2206 – Coordination and Permitting with Ditch Companies:

The waterline is likely to cross existing ditches. Our team will meet with each ditch company and discuss their requirements with regards to review, installation, and restoration requirements. For the purposes of our fee, we have assumed that the Town will pay all review and processing fees.

Task 2207 – Coordination and Permitting with United States Army Corps of Engineers:

To comply with Section 404 of the Clean Water Act, Engineer, will conduct a waters of the United States (WUS) delineation which will include background review and field work to identify potentially jurisdictional WUS (e.g., wetlands, drainages). A findings report will be created and submitted to the U.S. Army Corps of Engineers (USACE) with a jurisdictional determination (JD) request to obtain concurrence on the WUS delineation. Per the Colorado Regional Conditions for the Nationwide Permits, a pre-construction notification (PCN) will be submitted to the USACE for authorization of WUS impacts. Required components of the PCN include project/applicant details, WUS delineation, impacts analysis, avoidance, and minimization discussion, preliminary threatened and endangered (T&E) species analysis and cultural review. If additional T&E or cultural information, surveys, reporting, or coordination is required by the USACE, additional scope will be provided.

Task 212 – Coordination and Permitting with CDOT:

The project will cross I-25 and as such, requires coordination and communication with CDOT. Our team will meet with CDOT at the 30% design phase and submit for preliminary approval. Final approval is only granted once a Contractor is selected, and their insurance has been approved.

TASK SERIES 2300 – Environmental Studies and Reports

Task 2301 – Environmental Studies and Reports – Biological Survey and Threatened & Endangered Species:

Once the final alignment is selected, Engineer will coordinate to complete a protected species desktop habitat assessment to determine if areas that would be disturbed during Project construction could include potential habitat for state- or federally protected species. Based on the results of the desktop habitat assessment, an Engineer's environmental scientist will visit the site and complete a protected species habitat assessment field survey of the route and expected contractor working areas. The findings of this evaluation will be documented in a brief letter report that would be suitable to submitting to the agencies. If threatened/endangered species habitats are identified, the habitat limits and recommendations for future additional study will be recommended. Please note that our proposal does not include any presence/absence surveys, special status trapping, counts, etc. These services could be added through amendment as required. Pinyon will make recommendations with regards to future permitting based on the required construction and discovery of protected species habitats. If this work triggers a federal permit, this will be specifically communicated to the Town.

Task 2302 – Environmental Studies and Reports – Wetland Delineation:

Once the final alignment is selected, Engineer will coordinate to conduct a desktop evaluation of the Project Area for wetlands using publicly available data. Based on the results of the desktop review, a wetland specialist will visit the site and evaluate the route and expected contractor working areas for wetlands and other waterbodies. This field visit will verify any previous findings or discoveries through desktop analysis. The findings of this evaluation will be documented in a letter report. Wetlands and other waterbodies, when present, will be delineated with a sub-meter-accurate GPS. These GPS limits will be included into our construction drawings. Pinyon will make recommendations with regards to future permitting based on the required construction, and location of wetlands and other waterbodies. If the work triggers a federal permit, this will be specifically communicated to the Town.

Task 2303 – Environmental Studies and Reports – Historical and Cultural:

Once the final alignment is selected, Engineer will coordinate to conduct a desktop evaluation of the Project Area for cultural and historic resources using records and database review from common sources. Based on the results of the desktop review, a cultural resources specialist will visit the site and evaluate the route and expected contractor working areas for potential impact to historical and cultural sites. This field visit will verify any previous findings or discoveries through desktop analysis. The findings of this evaluation will be documented in a brief memorandum. Historical and/or cultural sites, when present, will be delineated with a hand-held GPS. These GPS limits will be included into our construction drawings. ERO will make recommendations with regards to future permitting based on the required construction, number, size, location, and importance of historical and/or cultural finds. If the work triggers a federal permit, this will be specifically communicated to the Town. ERO will also coordinate with the local tribe(s) to conduct a site walk down.

Task 2304 – Environmental Studies and Reports – Jurisdictional Determinations:

Engineer, in conjunction with Task 2211 and 2302, will develop jurisdiction determination requests and submit to the USACOE.

Task 2305 – Environmental Studies and Reports – Raptors and Birds:

Once the final alignment is selected, Engineer will coordinate to complete a desktop habitat assessment of protected raptors/nesting birds to determine if areas that would be disturbed during Project construction could include potential habitat for state- or federally protected species. Based on the results of the desktop habitat assessment, Pinyon will visit the site and complete a raptor/nesting bird habitat assessment field

survey of the route and expected contractor working areas. The findings of this evaluation will be documented in a brief letter report that would be suitable to submitting to the agencies. If threatened/endangered species habitats are identified, the habitat limits and recommendations for future additional study will be recommended. Please note that our proposal does not include any presence/absence surveys, special status trapping, counts, etc. These services could be added through amendment as required. Pinyon will make recommendations with regards to future permitting based on the required construction and discovery of protected bird habitats. If this work triggers a federal permit, this will be specifically communicated to the Town.

TASK SERIES 2400 – Field Data Collection

Task 2401 – Private Utility Locates and One-Calls:

King Surveying (King) will gather available existing utility mapping from individual utility companies, the Town, for the construction area. Flatirons will designate existing utilities along the work area utilizing a private utility designation firm. Utility marks provided by Colorado One-Call (811) and the surveyor's private utility company will be included in the topographical survey base mapping. Every attempt will be made to achieve SUE level B designation in accordance with ASCE 38-02 and SB 18-167. Utilities that are not field designated will be shown as mapped lines. This work will be subcontracted.

Task 2402 – Field Topographic Survey:

Topographical survey work will be provided by our subconsultant, King. Survey will be tied to the Town's coordinate system (Colorado State Plane Central Zone, NAD 1983 and USGS NVD 1929, feet).

A detailed topographical survey will be provided along the construction area. Survey will locate existing surface features (i.e., curb, gutter, edge of pavement, sidewalk, significant trees, fire hydrants, valve boxes, meter pits, manhole covers, fences, cross pans and walks and culverts, irrigation ditches and/or pipelines, signs, power poles, etc.).

Survey will locate and confirm horizontally existing located utilities (see Task 401). Utility locator markings and visible property corners along the route will be surveyed along the proposed alignment. This work will be subcontracted.

Task 2403 – Develop Utility Potholing Plan:

Utilizing data from the topographical survey and utility company research, Engineer will develop a utility potholing plan to provide to our test hole subconsultant (Kantex Industries).

Task 2404 – Utility Potholing:

Our test hole subconsultant (Kantex Industries) will perform SUE Level A locates of existing utilities that will be crossed or connected to by the proposed construction to determine their location, elevation, size, material, and alignment. For the purposes of this scope, we have included one hundred (100) test holes. Generally, test holes can be performed for \$900/each. If the alignment requires more utility test holes than the amount set in this scope, additional scope and fee should be included through amendment. This work will be subcontracted.

Task 2405 – Utility Potholing Report:

Utilizing information from Tasks 2403 and 2404, Engineer will develop a Utility Potholing Report summarizing the findings. Utility mapping and coordination with existing utilities will be provided in this report in addition to the pot holing results. This report will be provided to the Town in PDF format.

Task 4206 – Geotechnical Field Investigations and Geotechnical Report:

Geotechnical investigation test holes will be drilled to a depth of fifteen feet (15') or to auger refusal (whichever comes first) along the pipeline alignment at intervals of 600-feet. Soil samples will be collected and brought to a laboratory for analysis. Groundwater levels (if present) will be recorded and included in the report.

A geotechnical report will be prepared to provide identification, sample and test soils encountered, discuss geotechnical design and construction concerns, take ground water depth measurements, and provide recommendations for pipeline and structure design criteria.

Our scope of work assumes the following required geotechnical holes:

Bore Hole Type	Depth	Number of Holes
Regular Interval Investigation (600' spacing +/-)	15' deep	100
Total		100

This work will be subcontracted.

Task 2407 – Cathodic Protection Field Investigations and Resistivity Testing:**Field Analysis:**

Engineer's cathodic protection subconsultant, QualCorr, will perform soil resistivity testing and analysis at key locations along the new pipeline alignment (estimate 4 locations and include both in-situ (field) testing and saturated testing). QualCorr will also complete foreign stray current assessment and AC induction study to identify any areas or locations along the piping alignment where these situations may occur.

Engineering and Design:

Engineer's cathodic protection subconsultant, QualCorr, will develop 60%, 90%, and 100% corrosion control and cathodic protection (CP) design submittal packages for this project. A National Association of Corrosion Engineers (NACE) Certified Cathodic Protection Specialist (CP4) and Colorado licensed Professional Engineer will oversee the work and evaluate design for accuracy. The process will involve redlining proposed drawings and specifications, material research, and technical studies review to confirm a design basis of the corrosion control standards and procedures as they relate to this project. Engineer's drawings and specifications will include the required installations (drawings, tables, details, and specifications) to cathodically protect the new waterline. This work will be subcontracted.

TASK SERIES 2500 –Preliminary Design Report and Technical Memorandums**Task 2501 – Develop Preliminary Design Report:**

Engineer will compile gathered information and prepare Preliminary Design Plans, supplemental reports, and a basis-of-design report. Preliminary Design will include recommended alignment of the pipe, and location and design/configuration of the tie-in locations on the ends of the pipeline.

Task 2502 – Review and Consider Alternative Waterline Alignments:

Engineer will evaluate the potential waterline alignment alternatives and communicate findings and recommendations to the Project Team. The approach will focus on evaluating the technical, cost, land

acquisition, environmental, and social impacts for the alternative locations of the waterline. The recommended waterline alignment option will be clearly communicated and once agreed upon reflected in the Preliminary Design Report indicated in Task 601.

Task 2503 – Waterline Material Options Analysis and Technical Memorandum:

Engineer will evaluate the waterline so that pipeline material and pipe class (wall thickness) is appropriate for all portions along the pipeline. This is an important step because reducing wall thickness will greatly impact the raw pipe cost which is the single most expensive cost associated with this project. Our specification will provide tables indicating various sections of the pipeline, allowable pipeline materials, and minimum required pipe class (thickness). We will coordinate allowable pipeline materials with the Town. It is expected that this pipeline would be constructed of ductile iron pipe, steel pipe, PVC pipe (C-905), or a combination of materials. We will work with the Town and make recommendations based on design condition, lifecycle, and meeting the preferences of the Town. This analysis will be presented in a Technical Memorandum.

TASK SERIES 2600 –Detailed Design

Task 2601 –60% Waterline Design Drawings:

Plans and specifications shall be provided by Engineer to the 60% design level. The 60% Documents shall include the following:

- Technical Specifications
- All drawings indicated in Preliminary Design brought to 60% completion
 - Pipe profiles will be shown
 - Existing utilities will be shown
- Additional Detail drawings that are needed for final design.

Task 2602 – Erosion and Sediment Control (ESC) Drawings:

Our team will provide 60% design level ESC drawings for the project which shall include Douglas County's requirements relating to sediment and pollution controls. This will include the installation, quantity, and alignment of site-specific BMP's including inlet protection, rock socks, erosion control fence, construction fence, seeding, etc.

Task 2603 - Prepare 60% Technical Specifications:

Engineer will prepare the 60% technical specifications to describe the elements of work proposed. The technical specifications will be as detailed as possible for work to be performed, and to meet the Project Team's expectations. Technical specifications will be coordinated with the Town of Castle Rock's General and Special Conditions, which will be provided by the Town.

Task 2604 – 60% Engineer's Opinion of Probable Construction Cost:

Based on the 60% design drawings, our project team will prepare the engineer's opinion of probable construction cost and update the overall project schedule. Our cost estimate and schedule update will be submitted along with the design documents for review and comment by the Town. Our estimate will be based on recent bid tabulation information, historical cost data, and discussions with local suppliers and contractors. Significant assumptions will be included for reference.

Task 2605 – 60% Quality Control Reviews:

Our team will perform quality control for the plans and specifications in accordance with the Engineer's procedures. Engineer has an established, formalized quality control program that is mandatory on all projects. A copy of our formal quality control procedures manual is available upon request.

Task 2606 – Submit 60% Design Documents:

Engineer will finalize and formally submit 60% design documents from Tasks 2601 through 2604.

Up to five (5) half size copies of the design documents will be provided to the Project Team for review.

The Project Team will be given two weeks to review the plans and outline specifications prior to holding the 60% Design Review Meeting. Five half size copies of the plans will be provided to the Town for review

Task 2607 – 60% Design Review Meeting:

Engineer will prepare for, attend, and conduct a design review meeting to be held with the Project Team. The 60% design shall be presented by the Consultant and reviewed in detail with the Project Team. Engineer will provide meeting minutes with a decision log and a list of action items. Meeting minutes will be distributed via e-mail.

Task 2608 – 90% Waterline Design Drawings:

Plans and specifications shall be provided by Engineer at the 90% design level. The 90% Plans shall include, at a minimum, refinement of the plans and specifications. Utility pothole information shall be incorporated into the design at this level (if not available prior to the 60% deliverable) to identify conflicting utilities. Temporary and permanent easements information, land ownership information and all design related appurtenances shall be included.

Technical specifications shall be completed to a 90% level. Plans and specifications shall include sufficient detail for Bid.

Task 2609 – 90% Erosion and Sediment Control (ESC) Drawings:

Our team will provide 90% design level ESC drawings for the project which shall include Douglas County's requirements relating to sediment and pollution controls. This will include the installation, quantity, and alignment of site-specific BMP's including inlet protection, rock socks, erosion control fence, construction fence, seeding, etc.

Task 2610 - 90% Technical Specifications:

Engineer will prepare the 90% technical specifications to describe the elements of work proposed. The technical specifications will be as detailed as possible for work to be performed, and to meet the Project Team's expectations. Technical specifications will be coordinated with the Town of Castle Rock's General and Special Conditions, which will be provided by the Town.

Task 2611 – 90% Engineer's Opinion of Probable Construction Cost and Schedule:

Based on the 90% design drawings, our project team will prepare the engineer's opinion of probable construction cost and update the overall project schedule. Our cost estimate and schedule update will be submitted along with the design documents for review and comment by the Town. Our estimate will be based on recent bid tabulation information, historical cost data, and discussions with local suppliers and contractors. Significant assumptions will be included for reference.

Task 2612 – 90% Quality Control Reviews:

Our team will perform quality control for the plans and specifications in accordance with the Engineer's procedures. Engineer has an established, formalized quality control program that is mandatory on all projects. A copy of our formal quality control procedures manual is available upon request.

Task 2613 – Submit 90% Design Documents:

Engineer will finalize and formally submit 90% design documents from Tasks 709 through 713.

Up to five (5) half size copies of the design documents will be provided to the Project Team for review.

The Project Team will be given at least two weeks to review the plans and outline specifications prior to holding the 90% Design Review Meeting. Five half size copies of the plans will be provided to the Town for review

Task 2614 – 90% Design Review Meeting:

Engineer will prepare for, attend, and conduct a design review meeting to be held with the Project Team. The 60% design shall be presented by the Consultant and reviewed in detail with the Project Team. Engineer will provide meeting minutes with a decision log and a list of action items. Meeting minutes will be distributed via e-mail

Task 2615 – 100 % (Final) Design / Bid Ready Documents:

Plans and specifications shall be completed by Engineer at the 100% design level. Engineer will provide the Project Team with two (2) full sized drawings, three (3) half sized drawings, and five (5) copies of the final specifications. Final documents shall also be provided in AutoCAD (version 2018 or later), Microsoft Word, and Adobe Acrobat (.pdf) formats.

Task 2616 – 100% Engineer's Opinion of Probable Construction Cost:

Based on the 100% design drawings, our project team will prepare the engineer's opinion of probable cost for the project. This estimate will be submitted along with the design documents for review and comment by the Project Team. Our estimate will be based on recent bid tabulation information, historical cost data, and discussions with local suppliers and contractors. Relevant and significant assumptions will be included for reference. This estimate will include a 10% contingency.

TASK SERIES 2700 – Bid Phase SupportTask 2701 - Prepare Issue for Bid Documents:

Engineer will develop the Issue Bid Document (IFB) sets, transmit to the Town, and have them available for contractor distribution.

Task 2702 - Draft and Distribute Addenda:

Engineer will assemble and transmit addenda information as necessary during the bidding process. The addenda will be incorporated into the Contract Documents. Based upon comments, questions, and feedback from Contractors during the bidding process, the issuance of multiple addenda may be required.

Task 2703 - Prepare Agenda and Host Pre-Bid Conference:

Engineer will host and attend pre-bid conference to assist the Project Team in answering questions concerning the design of the project. The meeting agendas will cover important and noteworthy conditions or requirements associated with the bid and the work. We will also provide an exhibit of the overall project

to present to the contractors and a meeting sign-in sheet and meeting minutes. Meeting minutes will be distributed to meeting attendees and prospective bidders.

Task 2704 - Bid Tabulation Summary:

Engineer will compile an overall bid tabulation showing the provided bid costs in a single spreadsheet. This bid tab will help identify computational errors and uncertainties in the bid process. Irregularities will be documented.

Task 2705 - Deliver Conforming Drawings & Specification (IFC Documents):

Engineer will make final revisions to the Contract Documents based on addenda issued during the Bid Phase. Engineer will submit the "Issued for Construction" (IFC) documents to the successful contractor for use during the Construction Phase.

A1.01 Comments and clarifications to the Basic Services Scope Table

All customary water treatment facilities ("WTF") permitting, predesign, design engineering and construction related services including Civil, Process, Mechanical, Architectural, Electrical/ Instrumentation and Controls are provided. Geotechnical/ Survey Services are also included. The following service are not included:

1. No permitting fees or fees that may be imposed are included.
2. Funding assistance services, rate studies, environmental impact or NEPA related services, or floodplain mapping services.

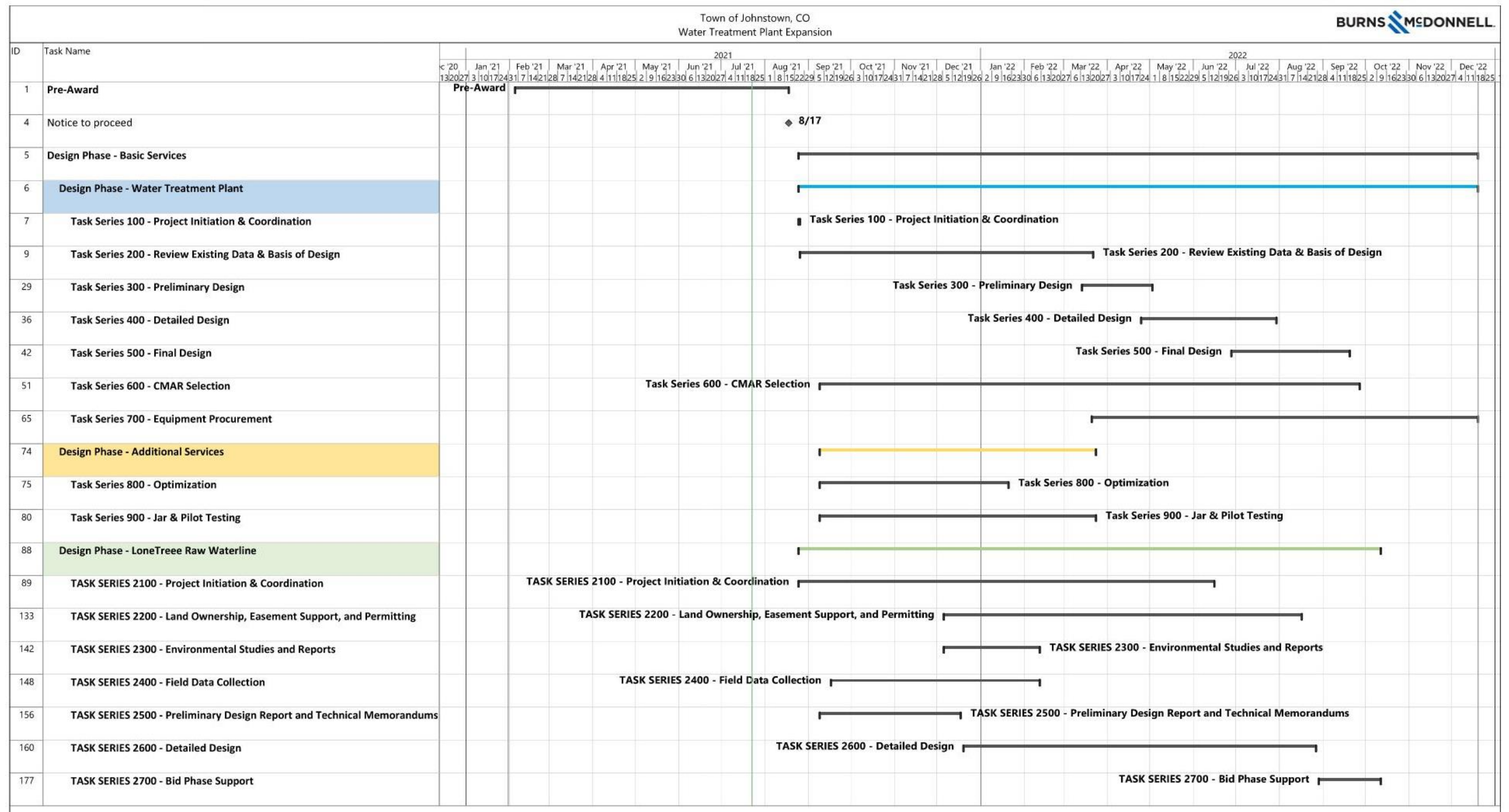


Figure A- 1 - Design Schedule

PART 2 – ADDITIONAL SERVICES

A2.01 *Additional Services Requiring Owner's Written Authorization*

- A. If authorized in writing by Owner, Engineer shall provide Additional Services of the types listed below. These services are not included as part of Basic Services and will be paid for by Owner as indicated in Exhibit C. The Parties recognize and agree that many of the listed Additional Services do not apply to this initial phase of the Project, developing the Engineering Design Plans, but may be applicable to subsequent phases of the Project. Pursuant to an amendment to this Agreement, certain of the Additional Services listed herein may become a Basic Service during such subsequent phases of the Project.

Task Series 800 – Optimize Operations

801 - Identify Optimization Tasks

Engineer shall prepare a questionnaire for WTP operators. Operators will be asked to complete the questionnaire and return it prior to our first operators' workshop. This will help gather a broad opinion of current concerns, challenges, and opportunities. Engineer will ask for each operator's level of comfort with particular technologies to seek their input on improving existing operations and safety. Engineer to conduct a site visit with Owner staff to investigate the current operations. Engineer to develop a list of potential optimization tasks based on operator input and the Engineer's site visit. The goal of the 500 Task Series is to provide Owner staff will relief during periods of high water demand until the expanded WTP is online.

802 - Workshop 5 - Operations Investigation

Engineer shall prepare agenda and facilitate a Workshop with Owner operations staff. The Workshop will identify the current bottlenecks and operating procedures that impact the Owner's ability to meet maximum day demands and water quality goals. Provide summary notes to develop action list of optimization tasks, including, but not limited to operational, maintenance, mechanical, electrical or control improvements that can be fast tracked.

803 - WTP Operations Support

Engineer shall provide support to WTP operations. Attend site on weekly basis, review Owner-supplied data and make recommendations to current O&M practices.

804 - Procurement & Installation Support

Engineer shall provide analysis and technical support to identified optimization tasks that are not immediately addressed by O&M practices. Includes on-site bench top testing, laboratory analysis (this work will be subcontracted), consulting with CDPHE. Engineer shall provide technical support for procurement, installation and start-up of equipment identified as an optimization tasks.

Task Series 900 – Jar & Pilot Testing

Task 901 - Jar Testing:

Engineer shall conduct bench scale jar testing and data collection at the WTP to assess optimal chemical dosing options for select constituent removals. The Owner will assist the collection of water supply samples and basic laboratory testing on the raw water that can be conducted onsite during testing (turbidity,

temperature, color, UVT, pH, hardness, and alkalinity). The Engineer assumes that the cost for all lab equipment, consumables and outside water quality laboratory work would be paid by the Owner. This work will be subcontracted.

Engineer shall provide a TM to include the testing results. Owner comments from the draft TM will be incorporated into the final TM.

Task 902 - Bench Scale Ozone Testing:

Engineer shall conduct bench scale testing to determine if raw or intermediate ozone preferred. Engineer shall determine bromate interaction and disinfection byproduct formation potential, using Engineer-supplied ozone generator and laboratory analysis. Feed water will be spiked with organic compounds to simulate peak taste and odor conditions. This work may be subcontracted.

Task 903 - Develop Testing Protocol:

The treatment process that will be analyzed during the pilot test is ozone and granular media filtration. Detailed protocols will be provided by Engineer for each unit process included in the pilot test prior to the initiation of pilot testing. CDPHE will be contacted prior to performing a pilot test and approved by CDPHE if we plan on utilizing the pilot to provide justification for straying from the CDPHE design guidelines.

Task 904 - Field Implementation of Pilot Testing:

Pilot testing will take place onsite at the Johnstown WTP. Effluent from the existing DAF units will be the raw water supply to the pilot units. A small submersible pump may be required for the unit. It is assumed that the Owner would supply the submersible pump with design information from the Engineer.

Task 905 - Pilot Testing Supervision:

Owner staff will oversee the daily (Monday through Friday) operation of the pilot system for its 8 week duration. If the system goes down over the weekend, Owner staff will maintain it on Monday. Daily operation tasks will involve collecting and analyzing water quality samples, maintaining target flowrates and chemical dosing rates, measuring flowrates at specified locations and frequencies, recording visual observations, and noting any issues that occur with the pilot testing components.

Task 906 - Evaluation of Results:

Pilot-Scale testing progress meetings will be held bi-weekly (every two weeks). These meetings will either be held at Johnstown's offices or by phone conference / Microsoft LiveMeeting. The goal of these meetings is to present data collected and summarize results from the previous two weeks of pilot testing. This will be a time to discuss testing progress, any issues with the system, and preview any modifications that will be made to the system (adjust process loading rates, dosing rates, etc.). Engineer (with the cooperation of Johnstown personnel working on the pilot) will prepare an Agenda and compile a summary of results prior to each meeting. Engineer will provide meeting minutes with a decision log and list of action items.

Task 907 - TM7 - Pilot Testing Results:

Engineer will prepare a technical memorandum documenting findings identified during pilot-testing. The technical memorandum will summarize the effectiveness of treatments tested during the pilot test and will culminate in recommended loading rates and dosing rates for each unit process and chemical for the startup and operation of the Water Treatment Plant under various water quality and temperature conditions. The technical memorandum will also describe any perceived weakness in the treatment system and methods that can be utilized (design and operation) to overcome.

Task Series 1000 – Owner Costs for Piloting by Engineer

The following items will be procured and paid for by the Owner: chemicals, chemical feed pumps, electricity, electricity installation, unloading of the pilot units with a crane, chemical consumption, maintenance consumables, daily operation, collection of grab samples, water quality testing and performing pilot system repairs.

Task 1001 – Ozone Pilot Rental

The Engineer or the Owner can lease an ozone pilot system. The most applicable party to lease this equipment will be determined early in the project. It is assumed the pilot will come with a storage container due to the limited building space onsite. This work will be subcontracted.

Task 1002 – BAF Pilot Rental

The Engineer or the Owner can lease a granular media filtration pilot system. The most applicable party to lease this equipment will be determined early in the project. It is assumed the pilot will come with a shipping container due to the limited building space onsite. This work will be subcontracted.

Task 103 – Pilot Site Implementation

The Engineer will assist with the installation and implementation of the pilot. It is assumed that the Owner will hire a contractor to install the unit.

1. Preparation of applications and supporting documents (in addition to those furnished under Basic Services) for private or governmental grants, loans, or advances in connection with the Project; preparation or review of environmental assessments and impact statements; review and evaluation of the effects on the design requirements for the Project of any such statements and documents prepared by others; and assistance in obtaining approvals of authorities having jurisdiction over the anticipated environmental impact of the Project.
2. Services to make measured drawings of existing conditions or facilities, to conduct tests or investigations of existing conditions or facilities, or to verify the accuracy of drawings or other information furnished by Owner or others.
3. Services resulting from significant changes in the scope, extent, or character of the portions of the Project designed or specified by Engineer, or the Project's design requirements, including, but not limited to, changes in size, complexity, Owner's schedule, character of construction, or method of financing; and revising previously accepted studies, reports, Drawings, Specifications, or Construction Contract Documents when such revisions are required by changes in Laws and Regulations enacted subsequent to the Effective Date or are due to any other causes beyond Engineer's control.
4. Services resulting from Owner's request to evaluate additional alternative solutions beyond those agreed to in Paragraph A1.01.
5. Services required as a result of Owner's providing incomplete or incorrect Project information to Engineer.

6. Services related to the acquisition of property related to the Work, beyond the exhibits, drawings and definitions included as part of Basic Services.
7. Providing renderings or models for Owner's use, including services in support of building information modeling or civil integrated management.
8. Undertaking investigations and studies including, but not limited to:
 - a. detailed consideration of operations, maintenance, and overhead expenses.
 - b. the preparation of feasibility studies (such as those that include projections of output capacity, utility project rates, project market demand, or project revenues) and cash flow analyses, provided that such services are based on the engineering and technical aspects of the Project, and do not include rendering advice regarding municipal financial products or the issuance of municipal securities.
 - c. preparation of appraisals.
 - d. evaluating processes available for licensing and assisting Owner in obtaining process licensing.
 - e. detailed quantity surveys of materials, equipment, and labor; and
 - f. audits or inventories required in connection with construction performed or furnished by Owner.
9. Furnishing services of Consultants for other than Basic Services.
10. Providing data or services of the types described in Exhibit B, when Owner retains Engineer to provide such data or services instead of Owner furnishing the same.
11. Providing the following services:
 - a. Services attributable to more prime construction contracts than specified in Paragraph A1.03.D.
 - b. Services to arrange for performance of construction services for Owner by contractors other than the principal prime Contractor and administering Owner's contract for such services.
12. Services during out-of-town travel required of Engineer, other than for visits to the Site, Owner's office or CDPHE's offices as required in Basic Services (Part 1 of Exhibit A).
13. Preparing for, coordinating with, participating in and responding to structured independent review processes, including, but not limited to, construction management, cost estimating, project peer review, value engineering, and constructability review requested by Owner; and performing or furnishing services required to revise studies, reports, Drawings, Specifications, or other documents as a result of such review processes.

14. Preparing additional bidding-related documents (or requests for proposals or other construction procurement documents) or Construction Contract Documents for alternate bids or cost estimates requested by Owner for the Work or a portion thereof.
15. Assistance in connection with bid protests, rebidding, or renegotiating contracts for construction, materials, equipment, or services.
16. Preparing conformed Construction Contract Documents that incorporate and integrate the content of all Addenda and any amendments negotiated by Owner and Contractor.
17. Providing Construction Phase services beyond the original date for completion and readiness for final payment of Contractor, but only if such services increase the total quantity of services to be performed in the Construction Phase, rather than merely shifting performance of such services to a later date.
18. Preparing Record Drawings, and furnishing such Record Drawings to Owner.
19. Supplementing Record Drawings with information regarding the completed Project, Site, and immediately adjacent areas obtained from field observations, Owner, utility companies, and other reliable sources.
20. Conducting surveys, investigations, and field measurements to verify the accuracy of Record Drawing content obtained from Contractor, Owner, utility companies, and other sources; revise and supplement Record Drawings as needed.
21. Preparation of operation, maintenance, and staffing manuals.
22. Protracted or extensive assistance in refining and adjusting of Project equipment and systems (such as initial startup, testing, and balancing).
23. Assistance to Owner in training Owner's staff to operate and maintain Project equipment and systems.
24. Assistance to Owner in developing systems and procedures for (a) control of the operation and maintenance of Project equipment and systems, and (b) related recordkeeping.
25. Preparing to serve or serving as a consultant or witness for Owner in any litigation, arbitration, lien or bond claim, or other legal or administrative proceeding involving the Project.
26. Overtime work requiring higher than regular rates, but only upon Owner's prior written approval.
27. Providing construction surveys and staking to enable Contractor to perform its work other than as required under Paragraph A1.05.A.8; any type of property surveys or related engineering services needed for the transfer of interests in real property; and providing other special field surveys.
28. Providing more extensive services required to enable Engineer to issue notices or certifications requested by Owner.

Exhibit A – Engineer's Services

EJCDC® E-500, Agreement Between Owner and Engineer for Professional Services.

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29. Extensive services required during any correction period, or with respect to monitoring Contractor's compliance with warranties and guarantees called for in the Construction Contract (except as agreed to under Basic Services).
30. Other additional services performed or furnished by Engineer not otherwise provided for in this Agreement.

A2.02 *Additional Services Not Requiring Owner's Written Authorization*

- A. Engineer shall advise Owner that Engineer is commencing to perform or furnish the Additional Services of the types listed below. For such Additional Services, Engineer shall request and obtain specific advance written authorization from Owner. Engineer shall cease performing or furnishing such Additional Services upon receipt of written notice to cease from Owner.
 1. Services in connection with Work Change Directives and Change Orders to reflect changes requested by Owner.
 2. Services in making revisions to Drawings and Specifications occasioned by the acceptance of substitute materials or equipment other than "or equal" items; services after the award of the Construction Contract in evaluating and determining the acceptability of a proposed "or equal" or substitution which is found to be inappropriate for the Project; evaluation and determination of an excessive number of proposed "or equals" or substitutions, whether proposed before or after award of the Construction Contract.
 3. Services resulting from significant delays, changes, or price increases occurring as a direct or indirect result of materials, equipment, or energy shortages.
 4. Additional or extended services arising from (a) the presence at the Site of any Constituent of Concern or items of historical or cultural significance, (b) emergencies or acts of God endangering the Work, (c) damage to the Work by fire or other causes during construction, (d) a significant amount of defective, neglected, or delayed Work, (e) acceleration of the progress schedule involving services beyond normal working hours, or (f) default by Contractor.
 5. Services (other than Basic Services during the Post-Construction Phase) in connection with any partial utilization of the Work by Owner prior to Substantial Completion.
 6. Evaluating unreasonable or frivolous requests for interpretation or information (RFIs), Change Proposals, or other demands from Contractor or others in connection with the Work, or an excessive number of RFIs, Change Proposals, or demands.
 7. Reviewing a Shop Drawing or other Contractor submittal more than three times, as a result of repeated inadequate submissions by Contractor.
 8. While at the Site, compliance by Engineer and its staff with those terms of Owner's or Contractor's safety program provided to Engineer subsequent to the Effective Date that exceed those normally required of engineering personnel by federal, State, or local safety authorities for similar construction sites.

This is **EXHIBIT B**, consisting of 3 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated August 17, 2021.

Owner's Responsibilities

Article 2 of the Agreement is supplemented to include the following agreement of the parties.

B2.01 In addition to other responsibilities of Owner as set forth in this Agreement, Owner shall at its expense:

- A. Provide Engineer with all criteria and full information as to Owner's requirements for the Project, including design objectives and constraints, space, capacity and performance requirements, flexibility, and expandability, and any budgetary limitations.
- B. If Engineer is retained to provide bidding assistance, provide Engineer with Owner's bidding requirements.
- C. Furnish to Engineer any other available information pertinent to the Project including reports and data relative to previous designs, construction, or investigation at or adjacent to the Site.
- D. Following Engineer's assessment of initially-available Project information and data and upon Engineer's request, obtain, furnish, or otherwise make available (if necessary, through title searches, or retention of specialists or consultants) such additional Project-related information and data as is reasonably required to enable Engineer to complete its Basic and Additional Services. Engineer and its Consultants shall be entitled to rely on the completeness and accuracy of such Owner-furnished information. Such additional information or data would generally include the following:
 - 1. Property descriptions.
 - 2. Zoning, deed, and other land use restrictions.
 - 3. Utility and topographic mapping and surveys.
 - 4. Property, boundary, easement, right-of-way, and other special surveys or data, including establishing relevant reference points.
 - 5. Explorations and tests of subsurface conditions at or adjacent to the Site; geotechnical reports and investigations; drawings of physical conditions relating to existing surface or subsurface structures at the Site; hydrographic surveys, laboratory tests and inspections of samples, materials, and equipment; with appropriate professional interpretation of such information or data.
 - 6. Environmental assessments, audits, investigations, and impact statements, and other relevant environmental, historical, or cultural studies relevant to the Project, the Site, and adjacent areas.

7. Data or consultations as required for the Project but not otherwise identified in this Agreement.
- E. Arrange for safe access to and make all provisions for Engineer to enter upon public property as required for Engineer to perform services under the Agreement.
- F. Recognizing and acknowledging that Engineer's services and expertise do not include the following services, provide, as required for the Project:
 1. Accounting, bond and financial advisory (including, if applicable, "municipal advisor" services as described in Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act (2010) and the municipal advisor registration rules issued by the Securities and Exchange Commission), independent cost estimating, and insurance counseling services.
 2. Legal services with regard to issues pertaining to the Project as Owner requires, Contractor raises, or Engineer reasonably requests.
 3. Such auditing services as Owner requires to ascertain how or for what purpose Contractor has used the money paid.
- G. Provide the services of an independent testing laboratory to perform all inspections, tests, and approvals of samples, materials, and equipment required by the Construction Contract Documents (other than those required to be furnished or arranged by Contractor), or to evaluate the performance of materials, equipment, and facilities of Owner, prior to their incorporation into the Work with appropriate professional interpretation thereof. If requested, provide Engineer with the findings and reports generated by testing laboratories, including findings and reports obtained from or through Contractor.
- H. Provide reviews, approvals, and permits from all governmental authorities having jurisdiction to approve all phases of the Project designed or specified by Engineer and such reviews, approvals, and consents from others as may be necessary for completion of each phase of the Project.
- I. Upon request, advise Engineer of the identity and scope of services of any independent consultants employed by Owner to perform or furnish services in regard to the Project, including, but not limited to, cost estimating, project peer review, value engineering, and constructability review.
- J. If Owner designates a construction manager or an individual or entity other than, or in addition to, Engineer to represent Owner at the Site, the parties may define and set forth as an attachment to this Exhibit B the duties, responsibilities, and limitations of authority of such other party and the relation thereof to the duties, responsibilities, and authority of Engineer.
- K. If more than one prime contract is to be awarded for the Work designed or specified by Engineer, then designate a person or entity to have authority and responsibility for coordinating the activities among the various prime Contractors, and define and set forth the duties, responsibilities, and limitations of authority of such individual or entity and the relation thereof to the duties, responsibilities, and authority of Engineer as an attachment to this Exhibit

B that is to be mutually agreed upon and made a part of this Agreement before such services begin.

- L. Inform Engineer in writing of any specific requirements of safety or security programs that are applicable to Engineer, as a visitor to the Site.
- M. Examine all alternative solutions, studies, reports, sketches, Drawings, Specifications, proposals, and other documents presented by Engineer (including obtaining advice of an attorney, risk manager, insurance counselor, financial/municipal advisor, and other advisors or consultants as Owner deems appropriate with respect to such examination) and render in writing timely decisions pertaining thereto.
- N. Inform Engineer regarding any need for assistance in evaluating the possible use of Project Strategies, Technologies, and Techniques, as defined in Exhibit A.
- O. Advise Engineer as to whether Engineer's assistance is requested in identifying opportunities for enhancing the sustainability of the Project.
- P. Place and pay for advertisement for Bids in appropriate publications.
- Q. Furnish to Engineer data as to Owner's anticipated costs for services to be provided by others (including, but not limited to, accounting, bond and financial, independent cost estimating, insurance counseling, and legal advice) for Owner so that Engineer may assist Owner in collating the various cost categories which comprise Total Project Costs.
- R. Attend and participate in the pre-bid conference, bid opening, pre-construction conferences, construction progress and other job-related meetings, and Site visits to determine Substantial Completion and readiness of the completed Work for final payment.
- S. Authorize Engineer to provide Additional Services as set forth in Part 2 of Exhibit A of the Agreement, as required.
- T. The Owner shall, at the written request of the Engineer, prior to the commencement of Engineer's services and thereafter, furnish to the Engineer reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under this Agreement. When requested, furnishing of such evidence shall be a condition precedent to the commencement or continuation of the Engineer's services. After such evidence has been furnished, the Owner shall not materially vary such financial arrangements without appropriation.
- U. If the Owner requires that any assembly, system, product item of material, or design be included in the Project without (or against) the Engineer's recommendation, or if the Owner selects a contractor, subcontractor, or material fabricator, or any assembly, system, product or item of material, without (or against) the Engineer's recommendation, the Engineer shall have no responsibility for such decision by the Owner or for the performance of such owner-specified items or persons, nor shall the Engineer be required to issue any opinion or certificate with respect to such items or the work of such persons.

This is **EXHIBIT C**, consisting of 5 pages, referred to in and part of the Agreement between Owner and Engineer for Professional Services dated August 17, 2021.

Payments to Engineer for Services and Reimbursable Expenses
COMPENSATION PACKET BC-1: Basic Services – Lump Sum

Article 2 of the Agreement is supplemented to include the following agreement of the parties:

ARTICLE 2 – OWNER’S RESPONSIBILITIES

C2.01 Compensation for Basic Services (other than Resident Project Representative) – Lump Sum Method of Payment

A. Owner shall pay Engineer for Basic Services set forth in Exhibit A as follows:

1. Design Phase Services for WTP: A Lump Sum, not to exceed, amount of \$ 2,059,442 based on the following estimated distribution of compensation:
2. Design Phase Services for Lone Tree Raw Water Pipeline: A Lump Sum, not to exceed, amount of \$1,320,336 based on the following estimated distribution of compensation:
3. Engineer may alter the distribution of compensation between individual phases noted herein to be consistent with services actually rendered, but shall not exceed the total Lump Sum amount unless approved in writing by the Owner.
4. The Lump Sum includes compensation for Engineer’s services and services of Engineer’s Consultants, if any. Appropriate amounts have been incorporated in the Lump Sum to account for labor costs, overhead, profit, expenses (other than any expressly allowed Reimbursable Expenses), and Consultant charges.
5. The portion of the Lump Sum amount billed for Engineer’s services will be based upon Engineer’s estimate of the percentage of the total services actually completed during the billing period. If any Reimbursable Expenses are expressly allowed, Engineer may also bill for any such Reimbursable Expenses incurred during the billing period as an additional amount to the stipulated lump sum.

B. *Period of Service:* The compensation amount stipulated in Compensation Packet BC-1 is conditioned on a period of service not exceeding 16 months. If such period of service is extended, the compensation amount for Engineer's services may, by written agreement, be adjusted.

C2.02 *Compensation for Additional Services as a Reimbursable Expenses*

- A. In addition to the Lump Sum, Engineer is also entitled to reimbursement from Owner for the Reimbursable Expenses.
- B. For budgeting purposes only, the additional services are estimated to be \$831,280. This is for the Design Phase only.
- C. Owner shall pay Engineer for all Reimbursable Expenses at the rates set forth in Appendix 1 to this Exhibit C. To the extent the Reimbursable Expenses are not expressly set forth in Appendix 1, Engineer shall only invoice Owner for such expenses to the extent reasonable.
- D. Reimbursable Expenses include the following, to the extent reasonable: transportation (including mileage), lodging, and subsistence incidental thereto; upon the prior written consent of Owner, providing and maintaining field office facilities including furnishings and utilities; toll telephone calls, mobile phone charges, and courier charges; reproduction of reports, Drawings, Specifications, bidding-related or other procurement documents, Construction Contract Documents, and similar Project-related items; and Consultants' charges. In addition, if authorized in advance by Owner, Reimbursable Expenses will also include expenses incurred for the use of highly specialized equipment.
- E. The amounts payable to Engineer for Reimbursable Expenses will be the Project-related internal expenses actually incurred or allocated by Engineer, plus all invoiced external Reimbursable Expenses allocable to the Project, the latter multiplied by a factor of 1.1.

C2.03 *Other Provisions Concerning Payment*

- A. Whenever Engineer is entitled to compensation for the charges of Engineer's Consultants, those charges shall be the amounts billed by Engineer's Consultants to Engineer times a factor of 1.1, except that Engineer's Consultant's charges are already included in C2.01. If additional Consultants are retained, Engineer shall obtain the prior written consent of Owner.
- B. *Factors:* The external Reimbursable Expenses and Engineer's Consultants' factors include Engineer's overhead and profit associated with Engineer's responsibility for the administration of such services and costs.
- C. To the extent necessary to verify Engineer's charges and upon Owner's timely request, Engineer shall make copies of such records available to Owner at cost.

This is **EXHIBIT C.01**, consisting of 1 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated August 17, 2021.

[Omitted]

Additional Services – Standard Hourly Rates

Article 2 of the Agreement is supplemented to include the following agreement of the parties:

C2.04 Compensation for Additional Services – Standard Hourly Rates Method of Payment

A. Owner shall pay Engineer for Additional Services, if any, as follows:

1. *General:* For services of Engineer's personnel engaged directly on the Project pursuant to Paragraph A2.01 or A2.02 of Exhibit A, except for services as a consultant or witness under Paragraph A2.01.A.20, (which if needed shall be separately negotiated based on the nature of the required consultation or testimony) an amount equal to the cumulative hours charged to the Project by each class of Engineer's personnel times Standard Hourly Rates for each applicable billing class for all Additional Services performed on the Project, plus related Reimbursable Expenses and Engineer's Consultant's charges, if any.
2. *Standard Hourly Rates are as set forth in Appendix 1 to this Exhibit C.*

B. *Compensation For Reimbursable Expenses:*

1. For those Reimbursable Expenses that are not accounted for in the compensation for Basic Services under Paragraph C2.01 and are directly related to the provision of Additional Services, Owner shall pay Engineer at the rates set forth in Appendix 1 to this Exhibit C.
2. Reimbursable Expenses may include the expenses identified in Appendix 1 and the following categories, to the extent reasonable: transportation (including mileage), lodging, and subsistence incidental thereto; providing and maintaining field office facilities including furnishings and utilities; toll telephone calls, mobile phone charges, and courier charges; reproduction of reports, Drawings, Specifications, bidding-related or other procurement documents, Construction Contract Documents, and similar Project-related items; and Consultants' charges. In addition, if authorized in advance by Owner, Reimbursable Expenses will also include expenses incurred for the use of highly specialized equipment.
3. The amounts payable to Engineer for Reimbursable Expenses, if any, will be the Additional Services-related internal expenses actually incurred or allocated by Engineer, plus all invoiced external Reimbursable Expenses allocable to such Additional Services, the latter multiplied by a factor of 1.1.
4. The Reimbursable Expenses Schedule may be adjusted annually (as of January 1) to reflect equitable changes in the compensation payable to Engineer on the condition that such Schedule is provided to Owner at least thirty (30) days in advance of the proposed increase.

C. *Other Provisions Concerning Payment for Additional Services:*

1. Whenever Engineer is entitled to compensation for the charges of Engineer's Consultants, those charges shall be the amounts billed by Engineer's Consultants to Engineer times a factor of 1.1
2. *Factors:* The external Reimbursable Expenses and Engineer's Consultant's Factors include Engineer's overhead and profit associated with Engineer's responsibility for the administration of such services and costs.
3. To the extent necessary to verify Engineer's charges and upon Owner's timely request, Engineer shall make copies of such records available to Owner at cost.

This is **Appendix 1 to EXHIBIT C**, consisting of 5 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated August 17, 2021.

Reimbursable Expenses Schedule

A. *Standard Hourly Rates:*

1. The Standard Hourly Rates apply only as specified in Article C2.

Schedule of Hourly Professional Service Billing Rates

Position Classification	Classification Level	Hourly Billing Rate
General Office *	5	\$65.00
Technician *	6	\$82.00
Assistant *	7	\$98.00
	8	\$131.00
	9	\$157.00
Staff *	10	\$179.00
	11	\$198.00
Senior	12	\$219.00
	13	\$240.00
Associate	14	\$252.00
	15	\$254.00
	16	\$257.00
	17	\$259.00

NOTES:

1. Position classifications listed above refer to the firm's internal classification system for employee compensation. For example, "Associate", "Senior", etc., refer to such positions as "Associate Engineer", "Senior Architect", etc.
2. For any nonexempt personnel in positions marked with an asterisk (*), overtime will be billed at 1.5 times the hourly labor billing rates shown.
3. For outside expenses incurred by Burns & McDonnell, such as authorized travel and subsistence, and for services rendered by others such as subcontractors, the client shall pay the cost to Burns & McDonnell plus 10%.
4. Monthly invoices will be submitted for payment covering services and expenses during the preceding month. Invoices are due upon receipt. A late payment charge of 1.5% per month will be added to all amounts not paid within 30 days of the invoice date.
5. The services of contract/agency and/or any personnel of a Burns & McDonnell subsidiary or affiliate shall be billed to Owner according to the rate sheet as if such personnel is a direct employee of Burns & McDonnell.
6. The rates shown above are effective for services through December 31, 2021, and are subject to revision thereafter.

Company Print Services Billing Schedule

Effective Date
January 1, 2021

PHOTOCOPY

The photocopy process is used for either black and white or color copies/prints up to 12x18. Stock used can be from 20 lb. bond to 100 lb. cover weight, including index tabs. This process is best utilized by:

- Book printing
- Letters and memos
- Line drawings
- Manuals
- Specification covers
- Report covers
- Specifications
- Addendums
- All preliminary documents
- Newsletters
- Booklets
- Forms
- Meeting handouts

PHOTOCOPY – Imaging/Printing on 20 lb. bond

B/W Copies/Prints

8½x11 to 8½x14.....	\$0.06
11x17.....	\$0.14
12x18.....	\$0.24

Color Copies/Prints

8½x11 to 8½x14.....	\$0.38
11x17.....	\$0.80
12x18.....	\$1.30

Central Print Services Only (B/W Volume Discounts - per page)

	8½x11/ 8½x14	11x17	12x18
1 – 2,500.....	\$0.06.....	\$0.14.....	\$0.24
2,501 – 7,500.....	\$0.05.....	\$0.12.....	\$0.22
7,501 – 15,000.....	\$0.04.....	\$0.10.....	\$0.20
15,001 – up.....	\$0.03.....	\$0.08.....	\$0.18

Central Print Services Only (Color Volume Discounts - per page)

	8½x11/ 8½x14	11x17	12x18
1 – 1,500.....	\$0.38.....	\$0.80.....	\$1.30
1,501 – 4,500.....	\$0.33.....	\$0.70.....	\$1.20
4,501 – 7,500.....	\$0.28.....	\$0.60.....	\$1.10
7,501 – up.....	\$0.23.....	\$0.50.....	\$1.00

* Larger than 12 x 18 - See Large Photocopy

Handwork: Labor-charge \$36.00 per hour.

Overtime work will be billed at \$54.00 per hour.

Minimum overtime charge is one hour.

Binding/Finishing

Up to 12x18

3 Hole Drill.....Per 3 Hole.....	\$0.75
Folding (machine).....Per Page.....	\$0.04
Folding (by hand).....Per Page.....	\$0.10
Staple (machine).....Per Staple.....	\$0.03
Staple (by hand).....Per Staple.....	\$0.08
Edge Bind.....Per Book.....	\$1.75
Standard Bind.....Per Book.....	\$3.00
GBC Plastic Bind.....Per Book.....	\$3.00
Plastic Coil Bind.....Per Book.....	\$3.00
Wire Bind.....Per Book.....	\$3.30
Screw Post Bind.....Per Post.....	\$2.00
Hand Inserting.....Per Page.....	\$0.15

Laminating

Double Sided

Up to 11x17.....	\$2.50 Per Page
Larger Than 11x17.....	\$2.00 Per. Sq. Ft.

The rates shown above are effective for services through December 31, 2021, and are subject to revision thereafter.

LARGE FORMAT PHOTOCOPY/PRINTING/PLOTTING

Black & White & Color copy/prints up to 36" wide are available on the HP PageWide 8000. All plots will be on bond, Mylar/Film at client's request. This process is best utilized by:

- Approval sets
- Draft sets
- Preliminary sets

WHQ Copy Center Unit Price
B/W = \$0.24 sf Color = \$3.00 sf
(L/C - Line Color = \$1.99 SF)

	B/W	L/C	Color
12x18.....	\$0.48.....	\$3.98.....	\$6.00
15x21.....	\$0.72.....	\$5.97.....	\$9.00
18x24.....	\$0.72.....	\$5.97.....	\$9.00
22x34.....	\$1.44.....	\$11.94.....	\$18.00
24x36.....	\$1.44.....	\$11.94.....	\$18.00
28x40.....	\$1.92.....	\$15.92.....	\$24.00
30x42.....	\$2.16.....	\$17.71.....	\$27.00
34x44.....	\$2.64.....	\$21.87.....	\$30.00
36x48.....	\$2.88.....	\$23.88.....	\$36.00

Larger than 12 sq. ft.:

Actual square footage x \$0.26 per sq. ft. B/W
Actual square footage x \$3.00 per sq. ft. Color

For mylar, add \$0.85 per sq. ft.

DISCOUNT TABLE/CENTRAL PRINT SERVICES

Square footage rounds up

	<u>Over 3,000 Sq. Ft. Per Order</u>		<u>Unit Price</u>
	B/W	L/C	Color
12x18.....	\$0.41.....	\$3.83.....	\$5.02
15x21.....	\$0.54.....	\$5.25.....	\$6.75
18x24.....	\$0.54.....	\$5.25.....	\$6.75
22x34.....	\$1.08.....	\$10.50.....	\$13.50
24x36.....	\$1.08.....	\$10.50.....	\$13.50
28x40.....	\$1.44.....	\$14.00.....	\$18.00
30x42.....	\$1.62.....	\$15.75.....	\$20.25
34x44.....	\$1.98.....	\$19.75.....	\$24.75
36x48.....	\$2.16.....	\$21.00.....	\$27.00

Finishing

Folding (by machine).....	per page.....	\$0.75
Staple.....	per Staple.....	\$0.10
Staple with edge binder.....	per Set.....	\$2.50
Post bind.....	per Post.....	\$2.00
Hole Drilling.....	per Hole.....	\$2.25

Handwork will be charged if total time needed to complete is more than 15 minutes.

Labor charge is \$36.00 per hour.

Overtime will be billed at \$54.00 per hour.

Minimum overtime charge is one hour.

Company Vehicle

Billing Schedule

Effective Date
January 1, 2021

	Type of Vehicle	Base Rate			Mileage Charge
		Daily	Weekly	Monthly	
Burns & McDonnell fleet vehicle use is charged using an assigned time component and miles traveled component. The assigned time component provides for daily, weekly and monthly durations. The miles traveled component relates to variable costs such as fuel, lubrication, tires, maintenance, routine cleaning, etc.	Sedan, 4 door	\$60	\$300	\$1,195	\$0.27
	Van	\$67	\$335	\$1,335	\$0.32
	Van, 12-15 Passenger	\$125	\$625	\$2,175	\$0.34
The daily charge applies when a vehicle is assigned for 7 days or less. The daily charge is for each 24-hour period or fraction thereof. The weekly charge applies when a vehicle is assigned for more than 7 consecutive days and less than 6 continuous weeks. For fractions of a week over 7 consecutive days, the weekly rate will be prorated by the number of days and fractional days the vehicle is assigned (one-seventh per calendar day).	Truck - 2WD Pickup, ½ Ton Regular Cab	\$ 52	\$260	\$1,035	\$0.30
	Truck - 2WD Pickup, ½ Ton Extended Cab	\$57	\$285	\$1,135	\$0.30
	Truck - 2WD Pickup, ½ Ton Crew Cab	\$62	\$310	\$1,235	\$0.30
The monthly charge applies when a vehicle is assigned for more than 6 continuous weeks. For fractions of a month over 6 continuous weeks, the monthly rate will be prorated by the number of months and fractional months the vehicle is assigned (one thirtieth per calendar day).	Truck - 4WD Pickup, ½ Ton Regular Cab	\$62	\$310	\$1,235	\$0.33
	Truck - 4WD Pickup, ½ Ton Extended Cab	\$66	\$330	\$1,305	\$0.33
	Truck - 4WD Pickup, ½ Ton Crew Cab	\$70	\$350	\$1,385	\$0.33
Employee-owned vehicles are charged at the per mile amount allowed by the Internal Revenue Service for business miles. Vehicles rented at destinations as part of short duration travel, such as airports, are charged per the receipt amount from the Rental Company, plus fuel, insurance, and other directly applicable amounts such as extra cleaning.	Truck - 4WD Pickup, ¾ Ton Extended Cab	\$78	\$395	\$1,575	\$0.34
	Truck - 4WD Pickup -¾ Ton Crew Cab	\$90	\$450	\$1,750	\$0.34
	Truck - 2WD Pickup, 1Ton Regular Cab	\$70	\$350	\$1,395	\$0.33
The base rate table displays Burns & McDonnell fleet vehicle charges that, in addition to providing the vehicle, provides all fuel, maintenance, repairs, fleet care, scheduling and liability insurance required by statute. For project needs involving any vehicle types that do not appear in the following table, charges will be established from prevailing market prices for the vehicle, miles traveled, and insurance premiums. For situations requiring higher insurance limits than required by statute, a vehicle high insurance limits charge can be prepared.	Truck - 4WD Pickup, 1Ton	\$90	\$450	\$1,795	\$0.34
	Compact SUV (Terrain, Equinox or similar)	\$67	\$335	\$1,335	\$0.33
	Mid-Size SUV (Acadia, Traverse or similar)	\$77	\$385	\$1,535	\$0.33
	Full Size SUV (Yukon, Tahoe or Similar 6+ Passenger)	\$89	\$520	\$1,995	\$0.34

The rates shown above are effective for services through December 31, 2021 and are subject to revision thereafter.

FLEET21

This is **EXHIBIT D**, consisting of 1 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated August 17, 2021.

[Omitted.]

This is **EXHIBIT E**, consisting of 1 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated August 17, 2021.

[Omitted.]

This is **EXHIBIT G**, consisting of 1 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated August 17, 2021.

Insurance

Paragraph 6.05 of the Agreement is supplemented to include the following agreement of the parties:

G6.05 Insurance

- A. The limits of liability for the insurance required by Paragraph 6.05.A and 6.05.B of the Agreement are as follows:

1. By Engineer:

- a. Workers' Compensation: Statutory
- b. Employer's Liability --
 - 1) Bodily injury, each accident: \$[1,000,000]
 - 2) Bodily injury by disease, each employee: \$[1,000,000]
 - 3) Bodily injury/disease, aggregate: \$[1,000,000]
- c. General Liability --
 - 1) Each Occurrence (Bodily Injury and Property Damage): \$[1,000,000]
 - 2) General Aggregate: \$[2,000,000]
- d. Excess or Umbrella Liability --
 - 1) Per Occurrence: \$[2,000,000]
 - 2) General Aggregate: \$[2,000,000]
- e. Automobile Liability --Combined Single Limit (Bodily Injury and Property Damage):
 - \$[1,000,000]
- f. Professional Liability --
 - 1) Each Claim Made \$[2,000,000]
 - 2) Annual Aggregate \$[2,000,000]
- g. Other (specify): \$[]

2. The Owner shall be listed on Engineer's general liability policy as provided in Paragraph 6.05.A.

Exhibit G – Insurance.

This is **EXHIBIT H**, consisting of 1 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated August 17, 2021.

Dispute Resolution

Paragraph 6.09 of the Agreement is supplemented to include the following agreement of the parties:

H6.09 *Dispute Resolution*

A. *Mediation*: Owner and Engineer agree that they shall first submit any and all unsettled claims, counterclaims, disputes, and other matters in question between them arising out of or relating to this Agreement or the breach thereof ("Disputes") to mediation by, unless the parties otherwise agree, the Judicial Arbiter Group in Denver, Colorado. Owner and Engineer agree to participate in the mediation process in good faith. The process shall be conducted on a confidential basis and shall be completed within 120 days. Owner and Engineer shall share equally in the cost of the mediation. If such mediation is unsuccessful in resolving a Dispute, then (1) the parties may mutually agree to a dispute resolution of their choice, or (2) either party may seek to have the Dispute resolved by a court of competent jurisdiction.

This is **EXHIBIT I**, consisting of 1 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated August 17, 2021.

Limitations of Liability

Paragraph 6.11 of the Agreement is supplemented to include the following agreement of the parties:

Limitation of Engineer's Liability

- A. *Engineer's Liability Limited to Compensation under Agreement:* Notwithstanding any other provision of this Agreement, and to the fullest extent permitted by Laws and Regulations, the total liability, in the aggregate, of Engineer and Engineer's officers, directors, members, partners, agents, employees, and Consultants to Owner and anyone claiming by, through, or under Owner for any and all claims, losses, costs, or damages whatsoever arising out of, resulting from, or in any way related to the Project or the Agreement from any cause or causes, including but not limited to the negligence, professional errors or omissions, strict liability, breach of contract, indemnity obligations, or warranty express or implied, of Engineer or Engineer's officers, directors, members, partners, agents, employees, or Consultants (hereafter "Owner's Claims"), shall not exceed the total compensation to be paid under this Agreement.

This is **EXHIBIT J**, consisting of 1 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated August 17, 2021.

[Omitted.]

This is **EXHIBIT K**, consisting of 2 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated August 17, 2021.

AMENDMENT TO OWNER-ENGINEER AGREEMENT
Amendment No. _____

The Effective Date of this Amendment is: _____.

Background Data

Effective Date of Owner-Engineer Agreement:

Owner:

Engineer:

Project:

Nature of Amendment: [Check those that are applicable and delete those that are inapplicable.]

- _____ Additional Services to be performed by Engineer
- _____ Modifications to services of Engineer
- _____ Modifications to responsibilities of Owner
- _____ Modifications of payment to Engineer
- _____ Modifications to time(s) for rendering services
- _____ Modifications to other terms and conditions of the Agreement

Description of Modifications:

Here describe the modifications, in as much specificity and detail as needed. Use an attachment if necessary.

Agreement Summary:

Original agreement amount:	\$ _____
Net change for prior amendments:	\$ _____
This amendment amount:	\$ _____
Adjusted Agreement amount:	\$ _____

Change in time for services (days or date, as applicable): _____

The foregoing Agreement Summary is for reference only and does not alter the terms of the Agreement, including those set forth in Exhibit C.

Owner and Engineer hereby agree to modify the above-referenced Agreement as set forth in this Amendment. All provisions of the Agreement not modified by this, or previous Amendments remain in effect.

OWNER:

ENGINEER:

By: _____
Print
name: _____

Title: _____

Date Signed: _____

By: _____
Print
name: _____

Title: _____

Date Signed: _____

Town of Johnstown

Water Treatment Plant Expansion from 5 to 12.5 mgd

Work Breakdown Structure and Fee Schedule - Option 4 Ozone & Biologically Active Filtration

Item #12.

BASIC SERVICES	Project Manager	Quality Control	Lead Process	Process	Structural	Architectural	Civil	Mechanical	Electrical, Instrumentation & Controls	Construction	CAD / Designer	Fire Protection	Environmental	BMCD Total Labor		Expenses	Sub- Consultants	Total Cost
	Pugh	Schaefer	Kinser	Rachelson Lundgren	Kienholz	Lang Dalglish	Tessitore	Olsen	Johnson Patwari	Herrington Other	Ellis	DeGroff Ginsberg	Woehler Rowe					
	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Cost	Direct	Cost	
TASK SERIES 100 - Project Initiation & Coordination																		
101 - Project Kick Off Meeting	4		4											8	2024	\$80		\$ 2,104
102 - Weekly Review Meetings	120		60	60	8		8	8	16					280	\$64,999	\$2,600		\$ 67,599
103 - Project, Risk and Resource Management, Schedule and Budget Controls	240													240	\$60,480	\$2,420		\$ 62,900
Sub-Total Series 100	364	0	64	60	8	0	8	8	16	0	0	0	0	528	\$127,503	\$5,100	\$0	\$132,603
TASK SERIES 200 - Review Existing Data & Basis of Design																		
201 - Review Existing Records	4		8	16										28	\$6,008	\$240		\$ 6,248
202 - Develop Permitting Matrix	2			4									4	10	\$2,072	\$80		\$ 2,152
203 - Desktop Analysis ¹	24	4	60	100	60	24	24		40		40			376	\$76,673	\$3,070		\$ 79,743
204 - Workshop 1 - Overall Treatment Train Options Selection	4		4	4										12	\$2,766	\$110		\$ 2,876
205 - Water Characterization ²	8		24	40										72	\$15,532	\$620	\$20,000	\$ 36,152
206 - Pretreatment Capacity Analysis ³	4		24	40										68	\$14,524	\$580		\$ 15,104
207 - Prepare 2 Layout Options for Selected Treatment Train	20		40	80							60			200	\$35,920	\$1,440		\$ 37,360
208 - Taste & Odor Control Option Selection ⁴	40		60	80										180	\$40,160	\$1,610		\$ 41,770
209 - Workshop 2 - Taste & Odor Control Option Selection	4		4	4										12	\$2,766	\$110		\$ 2,876
210 - Disinfection & Distribution Pump Station Options Development ⁵	12		24	40	8				8					92	\$20,114	\$800		\$ 20,914
211 - Workshop 3 - Alternative Design Comparison ⁶	4		4											8	\$2,024	\$80		\$ 2,104
212 - Prepare Conceptual Design ⁷	8		16	60	16	8	32	4	40		40			224	\$41,420	\$1,660		\$ 43,080
213 - Prepare WTP Siting Options, Construction & Prioritization Phases ⁸	12		24	48	20				24	8	60			196	\$35,699	\$1,430		\$ 37,129
214 - Basis of Design Report ⁹	4	2	4	40	4	4	8	4	8	4	8		24	114	\$22,435	\$900		\$ 23,335
215 - Workshop 4 - Review Conceptual Design	4		4	4										12	\$2,766	\$110		\$ 2,876
Sub-Total Series 200	518	6	364	620	116	36	72	16	136	12	208	0	28	2132	\$448,383	\$17,940	\$20,000	\$486,323
TASK SERIES 300 - Preliminary Design 30%																		
301 - Develop Preliminary Design	60	4	120	360	220	100	80	60	240		240	20		1,504	\$291,616	\$11,660		\$ 303,276
302 - Topographic Survey							8							8	\$1,408	\$60	\$15,525	\$ 16,993
303 - Geotechnical Investigations					8									8	\$1,920	\$80	\$26,268	\$ 28,268
304 - Review Meeting 1 - Preliminary Design	4		4						2					10	\$2,438	\$100		\$ 2,538
305 - Preliminary Design Report	16	4	40	120	36	24	40	8	32	8		20	24	372	\$77,682	\$3,110		\$ 80,792
Sub-Total Series 300	80	8	164	480	264	124	128	68	274	8	240	40	24	1902	\$375,064	\$15,010	\$41,793	\$431,867
TASK SERIES 400 - Detailed Design 60%																		
401 - Prepare 60% Design	60	4	120	400	360	160	80	80	320	8	280	20		1,892	\$372,040	\$14,880		\$ 386,920
402 - Utility Locates & Test Holes ¹⁰				2										2	\$371	\$10	\$30,000	\$ 30,381
403 - Review Meeting 2 - 60% Design	2		2						2					6	\$1,426	\$60		\$ 1,486
404 - Initial Permitting Support ¹¹	32	2	12	40	12	12	12	2	4		8	8	16	160	\$33,556	\$1,340		\$ 34,896
Sub-Total Series 400	94	6	134	442	372	172	92	82	326	8	288	28	16	2,060	\$407,392	\$16,290	\$30,000	\$453,682

TASK SERIES 500 - Final Design																		Item #12.
501 - Prepare 90% Design	60	4	80	360	340	120	120	60	240	8	240	30		1,662	\$325,592	\$13,020		\$ 336,012
502 - Review Meeting 3 - 90% Design	2		2											4	\$1,012	\$40		\$ 1,052
503 - Final Permitting Support	8			16		24						8	24	80	\$16,619	\$660		\$ 17,279
504 - Prepare Construction Documents	4	2	8	30	16	8	12	8	32		40			160	\$29,021	\$1,160		\$ 30,181
505 - Review Meeting 4 - Construction Documents	2		2											4	\$1,012	\$40		\$ 1,052
Sub-Total Series 500	76	6	92	406	356	152	132	68	272	8	280	38	0	1910	\$373,256	\$14,920	\$0	\$388,176
TASK SERIES 600 - CMAR Selection																		
601 - Project Delivery Workshop	4		4	4										12	\$2,766	\$110		\$ 2,876
602 - CMAR Excecution Workshop	4		4	4										12	\$2,766	\$110		\$ 2,876
603 - Preparation of Request for Qualifications Documents	8	2	8	16										34	\$7,520	\$300		\$ 7,820
604 - Review Meeting 5 - CMAR RFQ Documents	4		4	4										12	\$2,766	\$110		\$ 2,876
605 - Evaluation of Received Qualification Packages & Development of Short List	6	4	4	4										18	\$4,278	\$170		\$ 4,448
606 - Preparation of Request for Proposals	8	2	8	16				2						38	\$8,438	\$340		\$ 8,778
607 - RFP Period Support	4			16										20	\$3,976	\$160		\$ 4,136
608 - Evaluation of CMAR Proposals & Contractor Negotiation	8	4	8											20	\$5,056	\$200		\$ 5,256
609 - Review of Cost Estimates, Schedules, Value Engineering & Constructability Issues	16		16	32	6	8	6	12						104	\$22,746	\$910		\$ 23,656
Sub-Total Series 600	62	12	56	96	6	8	6	14	0	0	0	0	0	270	\$60,312	\$2,410	\$0	\$62,722
TASK SERIES 700 - Equipment Procurement																		
701 - Prepare Documents for Early Procurement Packages	4	1		16										21	\$4,228	\$170		\$ 4,398
702 - Prepare Procurement Request for Proposal Packages	2	1	4	16				8						35	\$7,452	\$300		\$ 7,752
703 - Review Meeting - Procurement Documents	2		2											4	\$1,012	\$40		\$ 1,052
704 - Procurement Period Support	4			6										10	\$2,121	\$80		\$ 2,201
705 - Evaluation & Negotiation of Procurement Packages	4		4	8				8						26	\$5,740	\$230		\$ 5,970
706 - Submittal Review	16		60	120	40			16	60					318	\$68,484	\$2,740		\$ 71,224
707 - Coordination with Installing Contractor	32			16										48	\$11,032	\$440		\$ 11,472
Sub-Total Series 1000	64	2	70	182	40	0	0	32	60	0	0	0	0	462	\$100,069	\$4,000	\$0	\$104,069
Project Subtotals - Basic Services	1258	40	944	2286	1162	492	438	288	1084	36	1016	106	68	9264	\$1,891,979	\$75,670	\$91,793	\$2,059,442
ADDITIONAL SERVICES																		
TASK SERIES 800 - Optimize Operations																		
801 - Identify Optimization Tasks	8	2	8	24					4					46	\$9,831	\$390		\$ 10,221
802 - Workshop 6 - Operations Investigation	4		4	4										12	\$2,766	\$110		\$ 2,876
803 - WTP Operations Support	20		80	80										180	\$40,200	\$1,610		\$ 41,810
804 - Procurement & Installation Support	16		40	60	16			8	32					172	\$37,532	\$1,500		\$ 39,032
Sub-Total Series 500	48	2	132	168	16	0	0	8	36	0	0	0	0	410	\$90,329	\$3,610	\$0	\$93,939
TASK SERIES 900 - Pilot Testing																		
206 - Jar Testing ^{2A}	16	4	60	120										200	\$42,540	\$1,700	\$24,000	\$ 68,240
207 - Bench Scale Ozone Testing ^{2B}	16	4	60	80										160	\$35,120	\$1,400	\$22,000	\$ 58,520
251 - Develop testing protocol	16	2	16	40										74	\$16,020	\$640		\$ 16,660
252 - Field Implementation of Pilot Testing	8		40	60	20		8		40	8	24			208	\$42,170	\$1,690		\$ 43,860
253 - Pilot Testing Supervision	16		80	320										416	\$83,712	\$3,350	\$55,000	\$ 142,062
254 - Evaluation of Results	8	2	32	40										82	\$18,068	\$720		\$ 18,788
255 - TM7 - Pilot Testing Results	8	2	24	80							8			122	\$24,240	\$970		\$ 25,210
256 - Workshop 4 - Confirmation of Process Design	4		4	4										12	\$2,766	\$110		\$ 2,876
Sub-Total Series 200A - Pilot Testing	92	14	316	744	20	0	8	0	40	8	32	0	0	1274	\$264,636	\$10,580	\$101,000	\$376,216
TASK SERIES 1000 - Owner Costs by Engineer																		
251 - Ozone Pilot Testing Equipment Rental	8													8	\$2,016	\$80	\$140,800	\$ 142,896
252 - BAF Pilot Testing Equipment Rental	8													8	\$2,016	\$80	\$160,600	\$ 162,696
253 - Pilot Site Implementation	16	2	24	40	8									90	\$19,972	\$800	\$128,700	\$ 149,472
Sub-Total Series 200A - Pilot Testing	32	2	24	40	8	0	0	0	0	0	0	0	0	106	\$24,004	\$960	\$430,100	\$455,064
Project Subtotals - Additional Services (Allowance Not to Exceed)	124	16	340	784	28	0	8	0	40	8	32	0	0	1380	\$288,640	\$11,540	\$531,100	\$831,280
Project Total	1382	56	1284	3070	1190	492	446	288	1124	44	1048	106	68	10644	\$2,180,619	\$87,210	\$622,893	\$2,890,722

- Notes:**
- Review data provided by Town (record drawings, operating records). Conduct field visual assessment of existing assets to determine if assets suitable to integrate in expanded WTP.
 - Town to provide population projections as basis for future water demand calculations. Use existing water quality data and conduct additional lab analysis to characterize water quality. Includes \$10,000 allowance for laboratory costs.
 - 2A. Jar testing scope to assess chemical dosing options for select constituent removals.
 - 2A. Conduct bench scale testing to determine if raw or intermediate ozone preferred. Determine bromate interaction and disinfection byproduct formation potential. Use BMcD owned ozone generator and laboratory analysis. Spike feed water to simulate peak taste and odor conditions.
 - Convert existing DAF to SAF. Send sample water to SAF vendor for jar testing.
 - Prepare comparison of T&O options including GAC, Ozone, BAF. Prepare conceptual design for GAC system, leased to own system to incorporate in WTP expansion.
 - Develop disinfection, distribution storage and pumping analysis, including design of new disinfection contact basin. Perform desktop analysis on corrosion impact to distribution system.
 - Select process train for conceptual design.
 - Resolve treatment train, layout on existing WTP site, estimate construction cost, schedule and phases.
 - Prepare 3 concepts for WTP layout on the existing property and two additional properties.
 - Document decisions and design criteria, based on feedback at Workshop. Select WTP site.
 - Includes allowance for 10 utility test holes at \$1,000 each.
 - Prepare initial submittals to CDPHE Water Quality Division, Town Planning and Building Permit, Weld County.

Basic	\$2,059,442
Additional	\$831,280

Owner Costs

Our experiences shows that it is more efficient for the Owner to contract directly with pilot equipment suppliers. Below are estimated costs for ozone and biologically active filtration pilot tests. These costs are incorporated into the additional services above. Our approach is flexible if the Town prefers the consultant to carry these

Item #12.

Activity	Total Cost
Ozone Pilot Testing Equipment (Inuitech)	
Equipment Rental (12 weeks)	\$ 35,000
Round Trip Shipping	\$ 15,000
Onsite Commissioning and Training	\$ 10,000
Laboratory Analysis	\$ 20,000
Operation	\$ 48,000
Sub-Total - Ozone Pilot Testing Equipment	\$128,000
Biologically Active Filter Pilot Testing Equipment (WesTech or DeNora)	
Equipment Rental (12 weeks)	\$ 35,000
Chemical Systems	\$ 18,000
Round Trip Shipping	\$ 15,000
Onsite Commissioning and Training	\$ 10,000
Laboratory Analysis	\$ 20,000
Operation	\$ 48,000
Sub-Total - BAF Pilot Testing Equipment	\$146,000
Pilot Testing System Installation (General Contractor)	
Mobilization	\$ 30,000
Site Preparation	\$ 20,000
Ozone Pilot Installation	\$ 15,000
Chemical Systems Installation	\$ 12,000
Filter Pilot Installation	\$ 15,000
Demobilization	\$ 25,000
Sub-Total - Pilots System Installation	\$117,000
Owner Cost Sub-Totals (Estimated, Pending Supplier Quotes)	\$391,000

Notes:
1. Excludes operating costs (water, power, chemicals, waste removal).



Professional Engineering Services for

Expansion Design of the Town of Johnstown Water Treatment Plant: Expansion from 5 MGD to 10 MGD

RFP # 430-10681 | February 5, 2021

Submitted to:
Town of Johnstown

February 5, 2021

Town of Johnstown
Attn: Marco Carani, Director of Public Works
450 South Parish Avenue
Johnstown CO, 80534

RE: Proposal for Professional Engineering Services for Expansion Design of the Town of Johnstown Water Treatment Plant: Expansion from 5 MGD to 10 MGD

Dear Mr. Carani:

The Town of Johnstown (the Town) is looking for a collaborative engineering team to design an expansion to the Town's drinking water facility, increasing its capacity from 5 MGD to 10 MGD plus redundancy. Burns & McDonnell has more than 30 years of experience working in Colorado and along the front range on brownfield WTP expansions, utilizing each plant's existing assets and developing designs that meet challenging cost, schedule, and technical goals.

Why Burns & McDonnell?



Deep Bench of Resources. As a multi-discipline design team with more than 40 people exclusively dedicated to water and wastewater projects, our proposed project team works on projects just like yours across the front range. We have a deep enough bench to deliver multiple projects at once, without sacrificing quality, and to provide the specialized experience you need in each design discipline.



Solve Your Taste & Odor Challenges. Having recently completed two large WTP projects with taste & odor challenges for the City of Thornton and Town of Erie, we have a variety of tools and methods to address taste and odor concerns effectively and economically.



More Local WTP Retrofits & Major Expansion Experience than Any Other Team. With a local water treatment portfolio spanning the last three decades, we know the Colorado market extremely well. In 2020, we completed four major water treatment projects in the Denver Metro area alone, three of which were large scale retrofits. We excel in making the most of your existing infrastructure, positioning you for compliance with future regulations, and making your facility operator friendly.



Flexible Approach with Design-Build Option, to Expedite Schedule and Reduce Costs. We have assembled a design team to deliver an approach which meets the needs of the RFP as stated, with the option to seamlessly transition into a design-build team, which would benefit the project in terms of cost, schedule, and simplified execution. Our design-build option team is led by Burns & McDonnell, with a construction manager and construction team provided by Garney Construction. Regardless of which delivery method the Town selects, we will position you for compliance with future regulations, and partner with you to address issues in the watershed and solve taste and odor challenges.

If you have any questions, please reach out to Brett by phone at (303) 583-0335 or via email at bdpugh@burnsmcd.com. We are looking forward to helping you make your project a complete success.

Best regards,

Brett Pugh, PE
Project Manager

Daniel Korinek, PE
Vice President

CONTENTS

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Section 1. Identification of Proposer

Making Our Clients Successful

Burns & McDonnell is a fully integrated engineering and consulting firm with a multidiscipline staff. We are 100% employee owned, which means we are relationship-focused and dedicated to making our clients successful. We have a 90 percent repeat-business rate and client partnerships that span multiple decades.

Consultant Name/Office/Address

Name | Burns & McDonnell Engineering Company, Inc.

Address | 9785 Maroon Circle, Suite 400 | Centennial, CO 80112

Phone | (303) 583-0335 **Email** | pdpugh@burnsmcd.com

Subconsultants

Name | Kumar & Associates, Inc. (geotechnical)

Address | 10302 South Progress Way,
Parker, CO 80134

Name | Flatirons Surveying, Inc. (survey)

Address | 4501 Logan Street,
Denver, Colorado 80216

Construction Partner for Design-Build Option

Name | Garney Construction, Inc. (contractor)

Address | 7911 Shaffer Parkway, Littleton, CO 80127

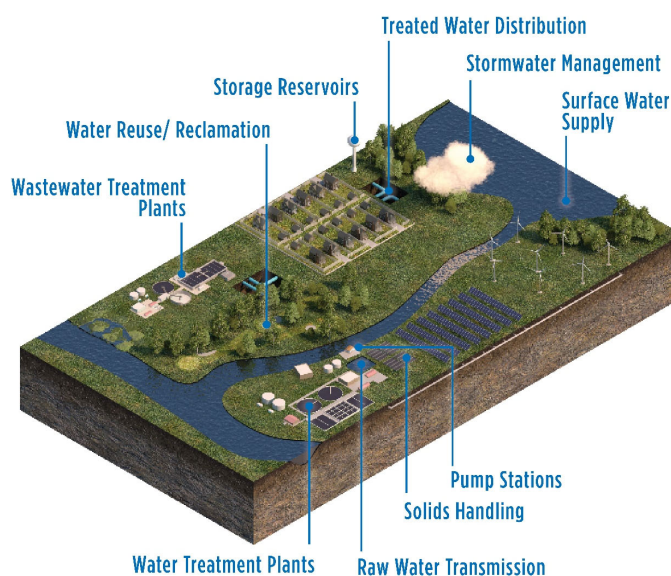
Office in Which Production will Occur

We will provide design services from our Centennial, CO office location. This office is home to 275 design, construction, and environmental resources, more than 40 of which are dedicated exclusively to water and wastewater projects. Our key personnel live here, work here, and are committed to making your project the very best it can be. We don't just work on a few projects here and there in Colorado; most of our team's experience is right here in Colorado along the Front Range.



Industry Rankings

Honored with numerous awards for excellence by professional organizations, government agencies and the armed forces, Burns & McDonnell has a reputation for providing high-quality service and innovative solutions to clients. *Engineering News-Record* ranks Burns & McDonnell #9 in the top 500 U.S. design firms and the top one-third of the leading program management firms, design-build firms, construction management-for-fee firms, green design firms, and construction management-at-risk firms. We are ranked #9 nationwide in water treatment.



Section 2. Project Overview & Approach

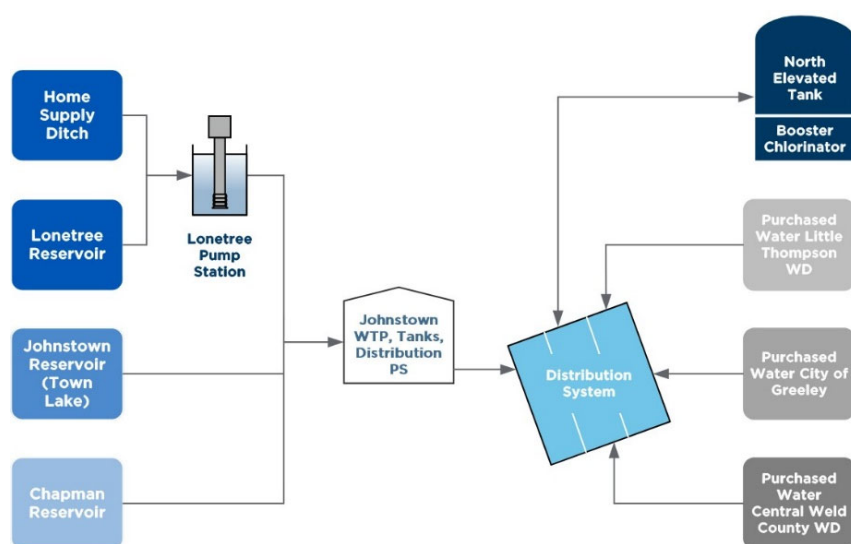
Project Understanding

The Town is experiencing high growth in its service area due to recent annexations and subdivisions and needs to expand the capacity of its water treatment. Aging infrastructure creates challenges for operations during high demand periods. The Town also experiences seasonal taste and odor issues related to algae growth in its water supply.

The Town water supply is sourced from the Big Thompson River, with water conveyed through the Home Supply Ditch to the Lonetree and Town Lake Reservoirs. The Lonetree Reservoir, near Berthoud, CO, is filled from the Big Thompson through two upstream reservoirs, Boedecker Lake and Lon Hagler Reservoir. A pump station at Lonetree Reservoir delivers water to the water treatment plant (WTP) through a 10.6 mile, 16-inch pipeline. The Home Supply Ditch can be diverted to the Lonetree Pump Station only when water levels in the reservoir are less than 17-feet. The Home Supply Ditch continues towards Johnstown and flows through the Town Lake before continuing on to downstream irrigation customers. The Town also has interconnects with Little Thompson Water District, the City of Greeley, and the Central Weld County Water District.

Key Project Considerations

- Rapid increase in water demand
- Increase filter capacity
- Aging infrastructure
- Taste & odor control



Taste and odor (T&O) issues in the Lonetree Reservoir are attributed to algae growth, leading to the seasonal presence of Geosmin and Methyl-Isoborneol (MIB). Geosmin and MIB are also present in the Town Lake, but at lower levels than Lonetree Reservoir. Powdered activated carbon (PAC) is dosed at the Lonetree Reservoir to absorb taste and odor compounds. Raw water from Lonetree and Town Lake is blended at the WTP in an above ground steel tank before it flows to the pretreatment building.

Figure 2-1. Johnstown's Water Supply System

Figure 2-2 on the next page is the current process flow diagram for the WTP. Pretreatment consists of alum injection, rapid mix, two-stage flocculation followed by dissolved air flotation (DAF). The Town is currently switching to a polymer-added coagulant to improve the pretreatment performance (solids, turbidity, and total organic carbon (TOC) removal).

Settled water flows by gravity to two granular media filters (GMF), each rated for 3.1 MGD. Filtered water enters a small clearwell below the filter gallery and is pumped to two ground storage tanks (GST). The GST's provide disinfection contact time, as well as backwash supply and distribution system storage. The distribution pump station is a below-grade structure that pumps finished water to the east and west pressure zones, respectively. The distribution system includes an existing 0.75 MG elevated storage tank, and a new 2 MG storage is proposed for the southeast part of the distribution system.

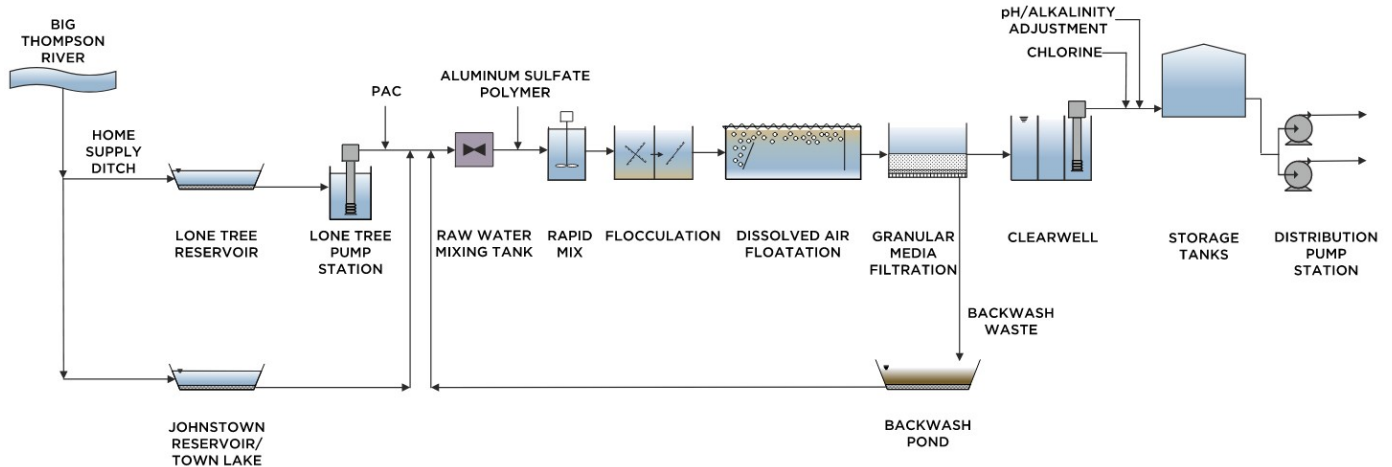


Figure 2-2. Johnstown WTP Existing Process Flow Diagram

The Town is facing many challenges due to growing water demands, aging infrastructure, and customer satisfaction. The existing WTP is limited by its filtration capacity, which creates challenges to maintain the necessary water levels in the GST to meet disinfection requirements. The two filters provide a total capacity of 6.2 MGD with both in service, which does not offer redundancy if one filter is offline. The existing DAF pretreatment system is rated for 10 MGD. Peak flows out of the storage tanks approach 11 MGD in summer months.

Approach Overview

The Town has identified two options for filter expansion (Options 1 and 2), while Option 3 includes other elements of importance to the WTP operation and expansion. Our overall approach is explained in Table 2-1 where we describe additional elements identified through multiple site visits and discussions with the Town. Option 3 includes added improvements not identified in Options 1 and 2. Table 2-1. provides this information at a glance, with more detail on each option in the subsequent sections. Our Management Approach provides detail on our proposed execution of the project. We want to address your preference for filter expansion first (Options 1 and 2), in parallel with planning for the future with issues through Option 3.

Table 2-1: Three Options to the Johnstown WTP Expansion

Consideration	1 Granular Media Filtration Expansion	2 Membrane Filtration Expansion	3 Comprehensive Site Master Plan
Summary	Expand Filter Building	Add membranes in parallel with existing GMF	Increase pretreatment capacity, address T&O issues, add membrane filtration, improve disinfection and distribution pumping
Meet Water Demands	Yes, future phases more challenging	Yes, scalable for future phases	Flexible and adaptable to changing demands
Aging Infrastructure	Rely on existing 60-year-old filter building and GST	Existing 40- and 60-year-old GST remain in service	Extends the investment in your WTP and provides long term plan to reach ultimate goals
T&O Issues	Multiple options applicable	Options limited	Multi-phased, holistic approach from source management to treatment
Disinfection Compliance	Direct water to the existing clearwell and rely on existing GST's	Pump direct from membranes into the existing GST's	Consider long term approach with dedicated

			contact basin and pump station
Distribution Pump Station	Expand existing vault and pumps	Expand existing vault and pumps	Evaluate best-value of new, dedicated distribution and backwash pumps
Within Your Budget	Most expensive first phase, more expensive later phases	Least expensive for more capacity, but limits T&O adaptability in future	Tailored to your current budget and rates; adapt as funding becomes available
Future Water Quality Concerns	No	No	Adaptable for future concerns (T&O, drought, wildfire, PFAS)

Value Added Service - Optimize Operations

We developed a value-added service to identify short term fixes to provide your operators relief heading into the peak demand season of 2021. These services are described following Option 3.

Option 1 – Granular Media Filtration Expansion

The existing filter building was put into service in 1966. It contains two granular media filters, each rated for 3.1 MGD. The media and air scour system were replaced in 2020, but the existing Wheeler ball underdrain system was not upgraded. Backwash draws from the two on-site GST and discharges to the on-site pond. Backwash is recycled to the front of the WTP and solids are discharged to the sanitary sewer and sent to the Central Wastewater Treatment Plant. Issues such as solids break through, air locking in the filtered water header, and cavitation on the filtered water pumps due to the shallow clearwell limit the filtration capacity.

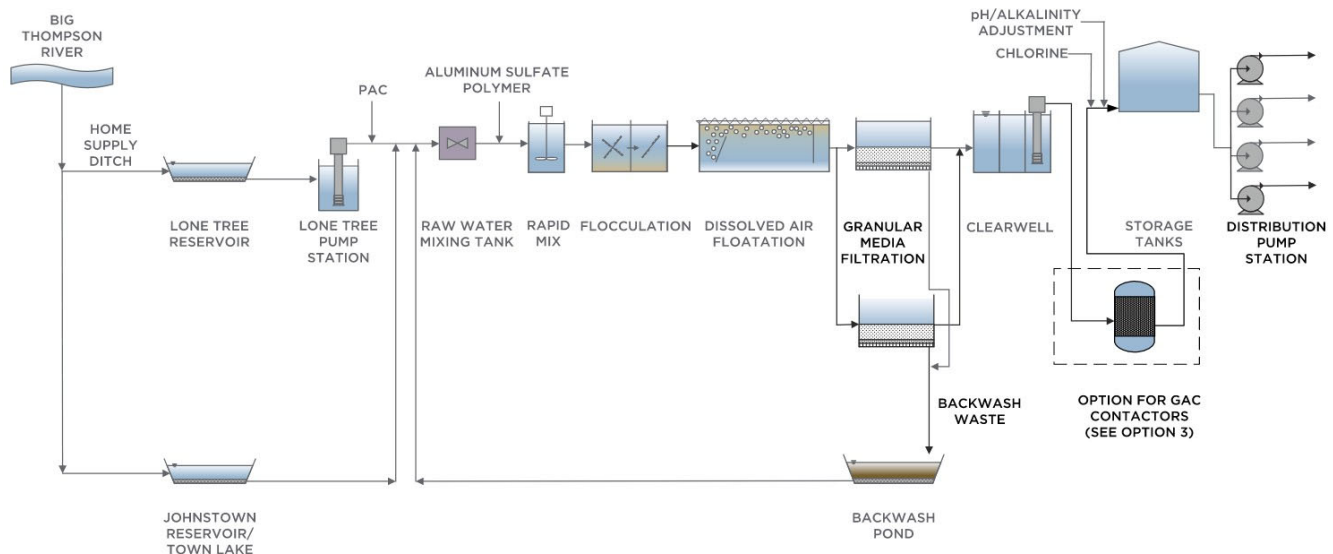


Figure 3-4. Process Flow Diagram for Option 1 (Grey is existing, black is proposed).

Additional capacity will be achieved by expanding the existing filter building to include new filters of the same size and configuration. Similar sized filters provide flexibility and simplify operations by avoiding complicated flow splitting. Adding two additional GMFs provides 12.4 MGD of installed filtration capacity. However, this results in a new rated capacity of only 9.3 MGD to meet the CDPHE criteria with the largest filter being offline. Three new GMFs provide a filtration capacity of 12.4 MGD but a WTP rated for the



Figure 2-3. Existing Filter Gallery

10 MGD capacity of the DAF pretreatment system. Depending upon budget constraints, the addition of 4 GMFs, or space for a fourth filter, may be better suited to provide redundancy, operational symmetry, and offer excess capacity to defer the next filter expansion. New filtered water pumps will transfer water into the existing GST's. The Distribution Pump Station (DPS) will be expanded in a new concrete vault.

Significant structural, mechanical, and electrical work is required to expand the existing filter building to both gain additional capacity, but also address the condition of the pipe gallery. Further improvements will be required to bring the filter building to current building codes, particularly around the existing chemical storage areas, electrical and control rooms. Care must be taken if expanding the existing building or consider a stand-alone building. Scaling the GMF system for future phases is more involved than a membrane option because of the structural costs. Expansion of the GMF to the southwest will impede on the existing backwash pond and recycle pump station, leading to additional modifications. Staying with the GMF preserves options for T&O control with GAC caps, ozone, or biologically active filtration (BAF). GAC caps or BAF are not applicable to a membrane-based solution.

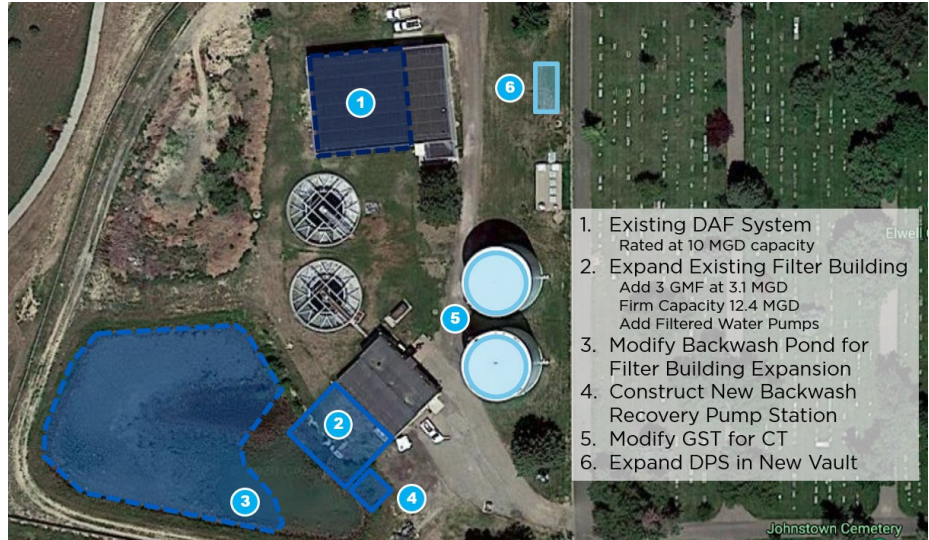


Figure 2-5. Option 1 GMF Expansion

Option 2 – Pressurized Membrane Filtration Addition

Option 2 consists of utilizing membrane filtration in place of the GMF and the existing DAF pretreatment system capacity of 10 MGD. There are a number of membrane filtration sub-options, we will evaluate with the Town:

- ▶ Add 6.4 MGD pressure membrane filtration system, expandable to 12.4 MGD; utilize the existing GMF filters until their end of life and expand the membrane system at that time
- ▶ Add 12.4 MGD of pressure membrane filtration and retire the existing media filters
- ▶ Install 10 MGD submerged membrane gravity filters (MGF) in existing filter basins

There are generally two options for constructing membranes at the WTP, pressure and submerged systems. Pressure systems are less expensive as a new build system versus submerged systems unless the filter basins can be reused. The existing filter basins are shallow, with very little room in the gallery to accommodate the extensive pipework required in a typical submerged membrane system.

Therefore, the only real option is a submerged MGF system by Suez. Suez' MGF system operates in a similar mode as the existing GMF

based on the existing hydraulic profile with no additional pumping. The two existing GMF could be converted to four MGF each rated at 3.33 MGD (10 MGD total capacity). Suez indicates that in the installations they have so far that backwashing is only needed twice per day and cleaning is only needed to limit bio-growth. However, we do not consider this option feasible since it does not provide full capacity, is only offered by one manufacturer and has not been proven for more than the past few years on a small number of installations. Cleaning systems are recommended for all membrane systems in the event of fouling, regardless of the low filter loading rate of a MGF system.

Site Visits

Site Visits to installations of the potential membrane manufacturers is included for the Town to understand differences and features to incorporate into the design.

The pressure system options for the WTP are diverse and include Dupont, Pall, Suez, and H2O Innovations, among others. The listed manufacturers all have installations in Colorado. Each of these manufacturers have distinct differences in services they offer, types of membrane fiber construction, flexibility to retrofit alternative modules with a universal rack, to name a few. All are proven manufacturers with extensive installations globally.

If membranes were selected, a new membrane system will be installed in an at-grade pre-engineered metal building with climate controls for equipment operation, supplied by a new settled water pump station at the pipe gallery level of the existing pretreatment building. The new settled water pumps will be sized with enough backpressure to pass through the membranes and feed the existing GST. This bypasses the existing filtered water pump station in the filter building gallery and avoids re-pumping. A pressure membrane system is easily scalable to meet the town's growing water demand. Expansion phases can be achieved by adding new modules to installed trains or adding new treatment trains. The new membrane filtration building can be sized for the initial phase only, be designed for a future expansion or built for the ultimate build-out floor space with equipment added later as needed. A new membrane building sized for the current phase has been assumed.

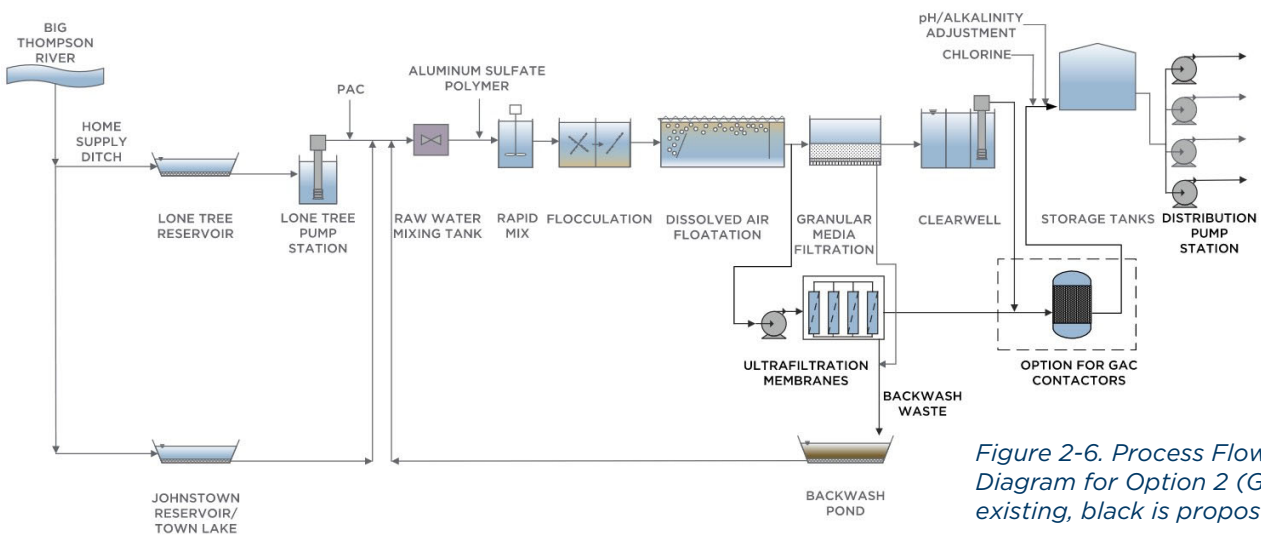


Figure 2-6. Process Flow Diagram for Option 2 (Grey is existing, black is proposed).

An early filtration Workshop will be used to determine Option 1 or 2 is the most-cost effective solution to meet the forecasted water demand. The GMF expansion introduces risk because of the age and condition of the filter building. GMF expansion also adds complications associated with demolition, modification of the existing clarifiers, backwash pond and recycle pump station.

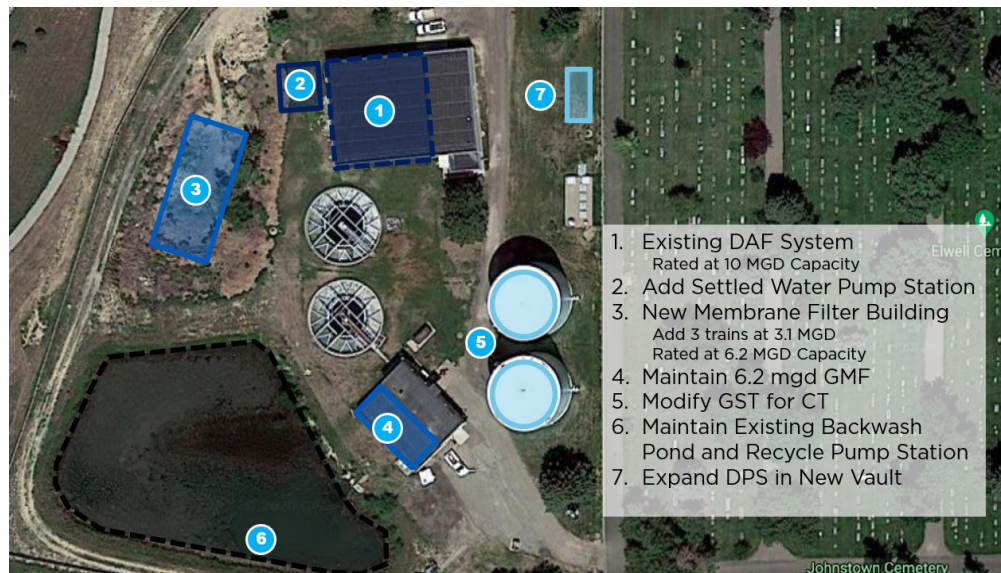


Figure 2-7. Option 2 - Membrane Filtration Addition

Table 2-2 provides a comparison of these sub-options versus Option 1 where the existing GMF are expanded.

Table 2-2: Filtration Comparison			
Option 1	Expand GMF	▶ Gravity flow fits into existing hydraulic profile ▶ Recent media only 1 year old ▶ Potential to add GAC caps, BAF for additional T&O control ▶ Uses existing assets and recent media replacement	▶ Higher backwash volumes ▶ More challenging for the next expansion ▶ Risk of filter breakthrough at high rates ▶ Recommend air scour over surface wash ▶ Existing underdrains near end of life
Option 2A	Add 6.2 MGD of Pressure Membranes, Keep GMF	▶ Uses existing assets and recent media replacement ▶ Defers cost of full membrane installation ▶ Smaller footprint ▶ Higher recovery ▶ Competitive cost ▶ Straightforward expansion in a new building	▶ Add pumping station to supply membrane system ▶ Must install GAC polishing downstream, cannot tolerate PAC on membranes ▶ Operators must manage two separate treatment systems ▶ Typical 10-year module replacement ▶ Existing underdrains near end of life, deferment may be short
Option 2B	Add 12.4 MGD of Pressure Membranes, Retire GMF	▶ Retire and abandon existing GMF and Filter Building ▶ Standardizes on one technology ▶ Straightforward expansion in a new building ▶ Scalable for future expansions	▶ Add pumping station to supply membrane system ▶ Must install GAC polishing downstream ▶ More advanced operation and maintenance than GMF
Option 2C	10 MGD of Submerged MGF in Existing Filter Basins	▶ Retire and abandon existing GMF ▶ Repurpose filter basins for submerged gravity membranes ▶ Fit higher capacity within the existing filter basins ▶ Low energy and chemical costs for a membrane system	▶ Requires re-pumping after filtration ▶ Rely on single GMF during winter conversion to MGF ▶ Limited cleaning system, may limit ability to recovery from a water quality event ▶ Must install separate T&O step ▶ Less than 10 installations worldwide

Disinfection credits for the additional capacity under Option 2 will be achieved modifying the existing GST to include better mixing or baffling to reduce the overall contact time (CT) requirements. Disinfection log inactivation credits vary between GMF and membranes, which will contribute to lower CT requirements with a membrane system. T&O control is discussed in Option 3. Membrane filtration does not provide T&O removal. The Distribution Pump Station will be expanded in a new concrete vault, similar to Option 1.

It is anticipated that the pressurized membrane filtration is most-cost effective solution to meet the initial forecasted water demand and offers a straightforward path for expansion. The GMF expansion introduces risk because of the age and condition of the Filter Building. GMF expansion also adds complications associated with demolition, modification of the existing clarifiers, backwash pond and recycle pump station.

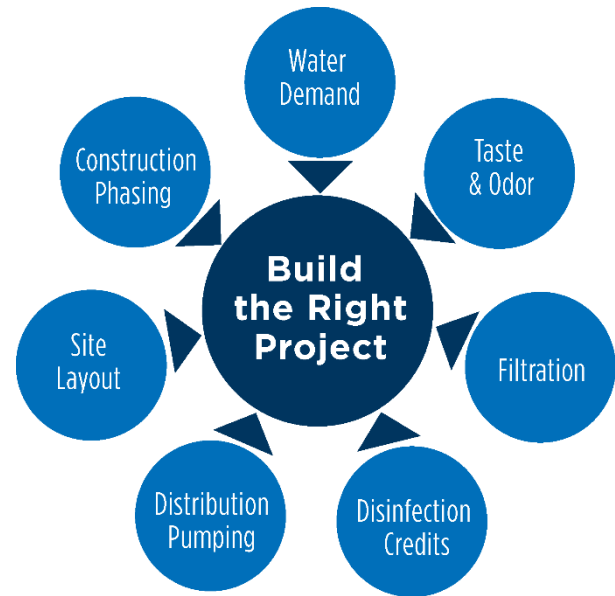
Option 3 – Comprehensive Site Master Plan

Our Option 3 approach is structured around collaboration and investigation into **seven key issues** to select the right project that fits your budget. Each issue is investigated separately and deliberately to form the Basis of Design.

This approach builds consensus on solutions for the big questions in a sequential and timely manner such that design can progress efficiently. Our goal is to design a facility that is robust for the anticipated water quality and future regulations, be flexible for operations, organized, clean, is easily scalable and is set up for years to come.

Advantages of a Comprehensive Plan

- Robust treatment for current and future water quality concerns (T&O, drought, wildfire)
- Scalable to allow strategic construction sequencing
- Tailored to your budget, for Phase I and subsequent Phases



Question 1 – Water Demand Projections

Johnstown's annexations of surrounding land created opportunities for large subdivisions, leading to high growth rate and corresponding water demand. The median growth rate between 2021 and 2019 was 7.3%. This growth is expected to continue through 2041, with a build-out population near 50,000. The sizing of the WTP expansion must address this high growth rate, and not be undersized and result in the need for another expansion in a handful of years. Our team will use the Town's planning and growth projections to confirm the anticipated future water demands and set reasonable WTP expansion phases.

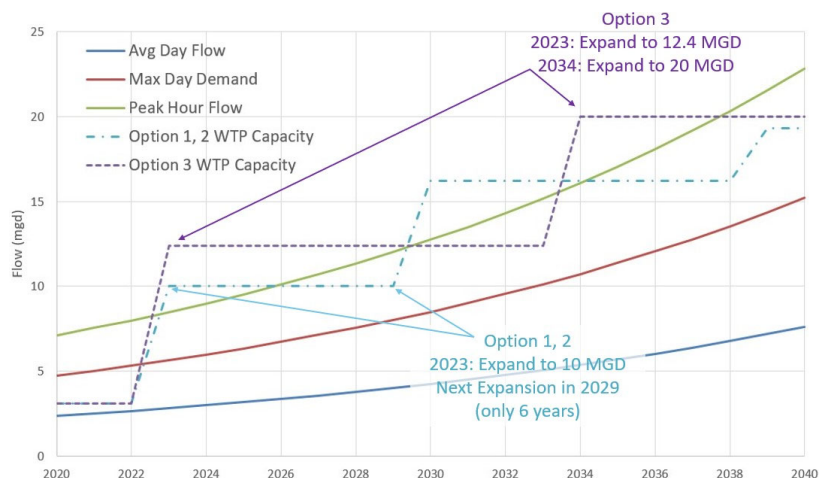


Figure 2-8. Projected Water Demand vs Potential WTP Phasing Scenario

Figure 2-8 shows the average day flow (ADF), maximum day demand (MDD) and peak hour flow (PHF) anticipated in Johnstown over the next 20 years. The WTP must provide MDD, with the differences in PHF made up by distribution storage. We will work with the Town to determine an efficient, stepped- approach to expand the WTP, while maximizing the value of the existing infrastructure. An initial expansion that does not address pretreatment capacity will require a second expansion completed within six years.

Therefore, we propose a conversion of the existing DAF system to Suspended Air Flotation (SAF). ***SAF provides a higher hydraulic through-put and solids capture rate within the same basins.*** The existing high-pressure air-saturator and recycle pumps are replaced with a surfactant-based foaming agent and mixer. The resulting anionic bubble improves removal rates by both attracting and lifting suspended solids. This approach provides the opportunity to re-rate pretreatment up to 12.5 MGD or higher, upon additional testing, verification, and acceptance by CDPHE. This SAF approach is anticipated to improve performance at lower operating costs, remove more suspended solids, TOC, Geosmin and MIB and increase the filter run time. ***Improving the percent TOC removed is an operational goal*** to meet the Town's permit requirements.

Convert DAF & Re-Rate Capacity

- Remove saturators, air compressors, recycle pumps
- Add surfactant foaming agent generator
- Add emulsion mixer to pump gallery
- Potential to double solids capture and through-put

A phased approach has the benefits of being flexible, to right-size the WTP to changing demand patterns, address critical concerns early, and allows the Town to level out the capital spending. This approach offers time to identify and secure funding or financing, as needed, and reduce the strain on the Town's capital budgets. We will work with the town to establish a practical and flexible expansion plan that has a clear program to meet the next 10 to 20 years of growth.

Maximize Water Resources

Raw water is sent to the WTP from the Lonetree and Town Lake Pump Stations, with current firm capacities of approximately 4.7 and 5 MGD, respectively. Expansion of the Lonetree Pump Station and its associated pipeline are necessary for the increased WTP capacity but were excluded from the scope by Addendum 1.

The Town owns the water rights to the ***Chapman Reservoir***, but currently has no way to access that water. Chapman Reservoir is susceptible to nutrient loading from agricultural run-off. Even though Chapman Reservoir is not a near term water source, our approach will evaluate suitable treatment trains for your current sources as well as the Chapman Reservoir. This may include provisions to combine with the new pipeline from Lonetree, as well as selecting a WTP robust treatment train that is suited to the high nitrates, TOC, and T&O compounds from Chapman Reservoir. This new source will help the Town ***improve their resiliency*** for water quality events by adding a third source, prepare for drought conditions, and climate change.



Figure 2-9. Potential Pipeline from Chapman Reservoir

Question 2 - Taste & Odor Control

A major objective of the project is to address seasonal T&O issues related to algae growth. Our team is currently working with the Town to identify short-term solutions to address T&O issues for the summer of 2021. However, T&O must be looked at from a long-term, multi-phased approach, to establish a WTP that is robust, resilient, and able to adapt to changing water quality. Burns & McDonnell identified a ***T&O Toolbox*** in collaboration with the Town as part of our on-going study. The toolbox includes multiple options that each contribute toward removal of TOC and T&O odor compounds.

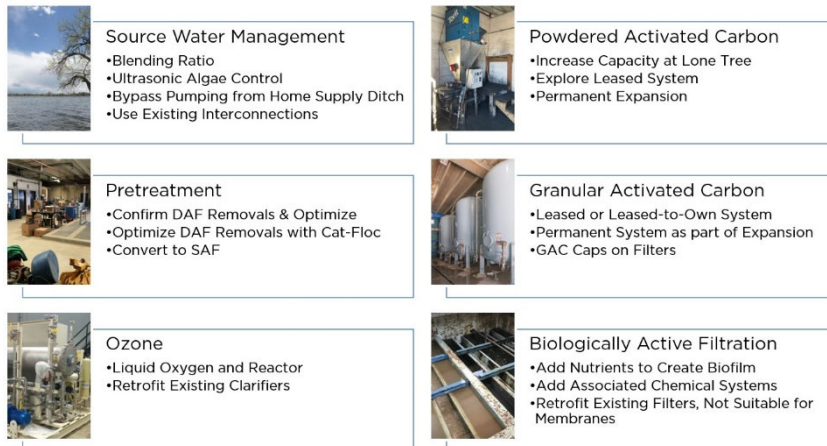


Figure 2-10. Taste & Odor Control Toolbox

incorporated into the WTP expansion. No single technology will do it all, so we will provide a flexible system to make it easy for the operators. Our team will perform desktop analysis and jar tests to verify the effectiveness of a given T&O control strategy prior to implementation.

Question 3 – Filtration Options

Filtration options are discussed above. The selection of the filtration options must consider how the overall WTP will operate as a whole in response to changing water quality, redundancy, ease of operations and life cycle cost. The preferred filtration option will be selected in a collaborative workshop. The basis of our Option 3 approach is a new pressurized membrane system operating in parallel with the existing GMF.

Questions 4 & 5 – Disinfection & Distribution Pumping

The GST are used for distribution storage, backwash storage and disinfection CT. Operators are challenged to maintain the minimum water levels for CT in the GST during periods of high demand. There is no baffling in the tanks, results in a large volume required to meet disinfection requirements. The GST are 65 and 45 years old and need repairs. The DPS is an underground vault with pumps sending water to the East and West pressure zones. Variable speed drives were installed recently, which has helped better match pumping to the system demand.

The WTP expansion is a great opportunity to reexamine how disinfection, distribution storage and pumping is performed for the long-term instead piecing together a short-term solution that depends on existing infrastructure. Several concepts are presented in the text box.

CT & DPS Considerations

- Convert to chloramines to reduce disinfection by-products
- Expand DPS – In Vault or Above Grade
- Rehabilitate aged GST
- Add new DCB with high baffling factor and dedicated backwash volume
- Convert GST's to distribution storage to defer the construction of a new storage tank
- Combine expanded DPS with a dedicated backwash pump station
- Optimize post-treatment chemicals for corrosion control

A new disinfection contact basin (DCB) is an economical way to add CT when a higher baffling factor is used to reduce overall volume. A new DCB creates opportunities to convert the two GST's to distribution storage to meet peak hour demands and **defer new storage in the distribution system**. A new DCB can be designed for the current CT requirements (GMF- giardia) but be sized for future requirements (membranes – virus). The DCB structure can be sized for ultimate flows with a new at-grade pump station installed above with vertical turbine pumps. Pumps are added, as needed, for future phases. A dedicated backwash wash volume will reduce the

height required in the GST for CT compliance. A dedicated DCB, and improved TOC removals from the upgraded pretreatment system, will help the town reduce the chlorine residual entering the distribution system and contribute to lowering disinfection by-products.

The potential upgrades will increase the initial construction costs but will be easier to operate and improve disinfection compliance. However, examining the disinfection and distribution pumping systems for the long-term may prove this to be the best-value and set the town up for the future. The benefits and challenges of modifications to the GST, DCB and DPS will be discussed in a dedicated Workshop. This task will also examine the finished water quality to determine the corrosion potential in the distribution system and identify the preferred corrosion control solution.

Question 5 - WTP Siting and Layout

With all the decisions made above, the attention shifts to identifying the preferred location for the WTP expansion and how to optimize the existing site. The existing WTP property has footprint available for the initial expansion, but that may leave little choices for future phases. It may be more economical to expand on an adjacent site (Figure 2-11). Our approach will result in a site master plan that prevents scenarios that are boxed in by the existing site constraints.

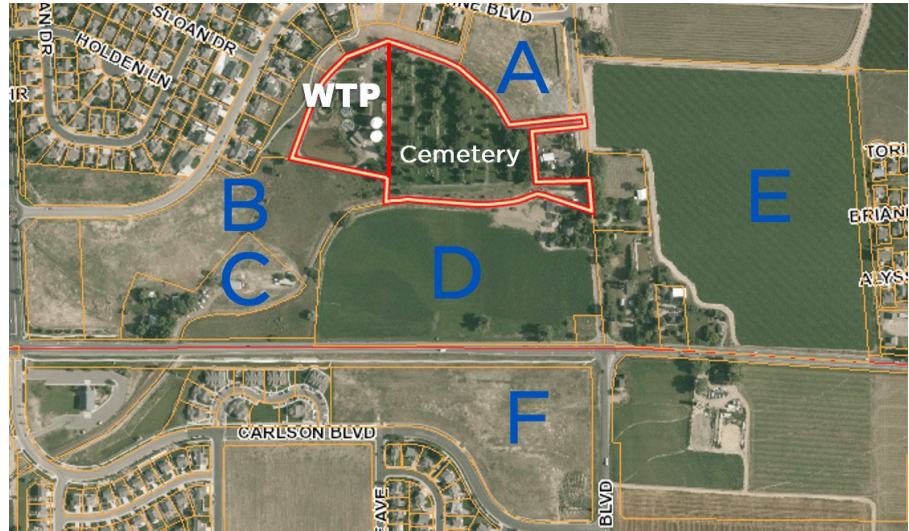


Figure 2-11. WTP Expansion Property Options

Question 6 – Construction Phasing

Our design approach is based on developing a phased sequence of work that meets water demand and water quality issues and prioritizes critical upgrades, while extending the useful life of your existing assets and is a facility that you can afford. Figure 2-12 presents a proposed phasing as an example of a potential solution. The Town must capitalize on recent infrastructure improvements at the Lonetree pump station and filter media. We are also aware of aging structures such as the Filter Building and steel GST that are approaching the end of their useful life. There will likely be more surprises and higher costs trying to reconfigure the Filter Building for a new application while maintaining service. A phased approach creates time to decide if it is worth spending funds to improve an old structure or if it is time to start fresh with a new building. Our comprehensive site master plan approach will form the Basis of Design with a flexible plan to pivot towards your priorities.

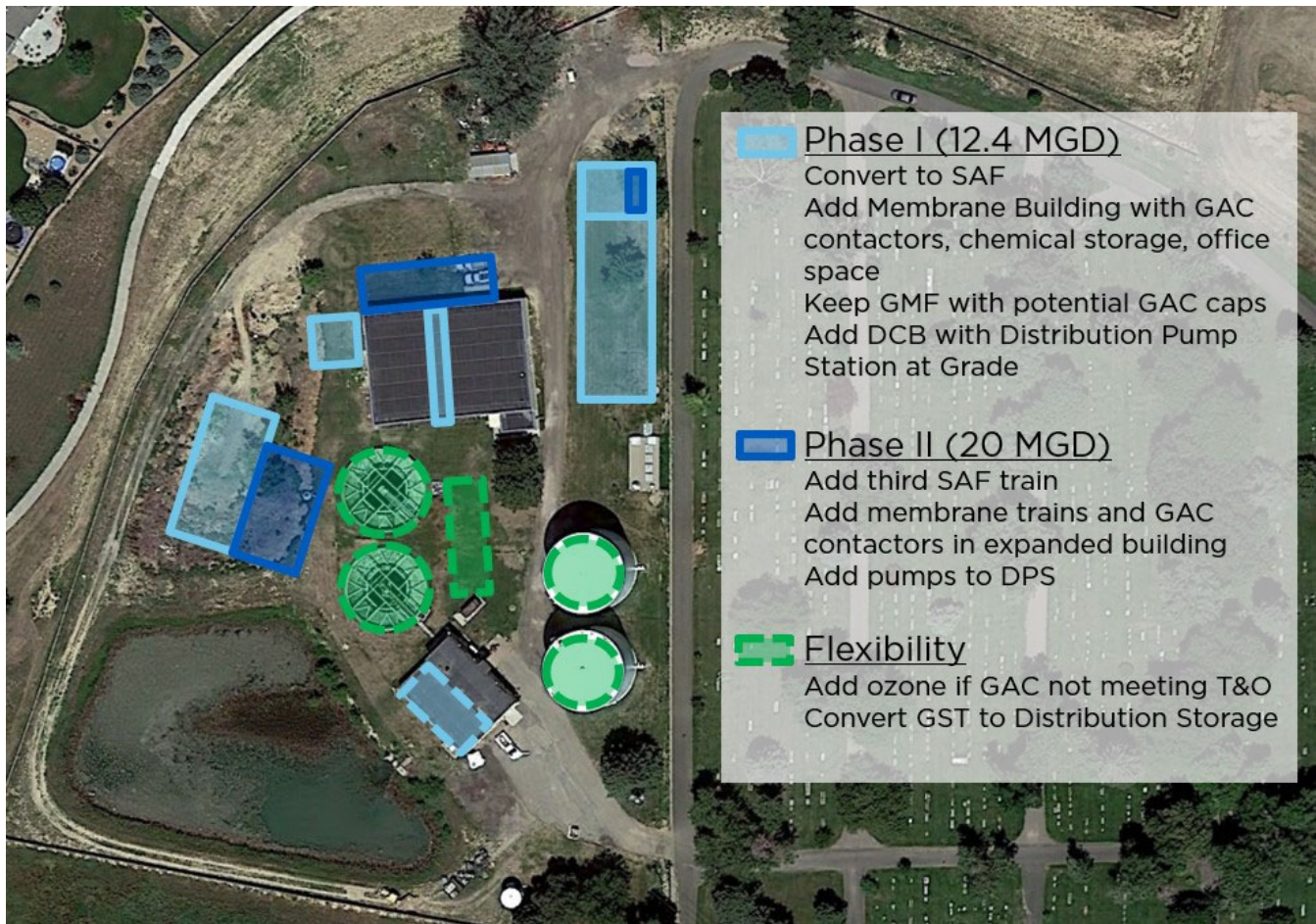


Figure 2-12. Potential Phasing Plan

Plan for Service Interruptions

Construction phasing will be developed as the comprehensive site plan is determined. Construction phasing will also identify when critical work has to happen and identify that WTP service interruptions will occur during periods of low demand. Construction phasing will help to place priority work, such as T&O control, earlier in the sequence such that the Town can benefit during the season they are most needed.

The Town will need to investigate the use of the existing interconnections with Little Thompson Water District, Greeley, and Central Weld County Water District. The Greeley interconnection is only available when the Boyd Lake WTP is running in the summer months as a peaking plant and only available at lower pressure. The Central Weld County Water District interconnection is available at higher pressure but may not have the capacity to meet the town's peak demands. Our construction schedule will identify critical interruptions that may occur in the summer months so the Town can plan ahead. Exercising the interconnections or water rights help with overall system resiliency, being able to react to an event with your backup supplies tested and ready to go, agreements in place.

Value Added Option: Short Term Relief by Optimizing Operations

The individuals that operate your water facilities will provide critical input to the decisions made during the conceptual design. We will distribute a questionnaire to the operators at the start of the project. Operators will be asked to complete the questionnaire and return it prior to our first operators’ workshop. This will help gather a broad opinion of current concerns, challenges, and opportunities. We will ask for each operator’s level of comfort with particular technologies to seek their input on improving existing operations and safety.

We offer an *Operations Optimization task* series that will start from the project outset, in a parallel with the design progression, to give your staff relief ahead of summer demands of 2021. Our team will focus immediately *partnering with your operations staff* to address your current issues that are creating bottlenecks and challenging the operator’s ability to meet maximum day demands.

There are many challenges that the operators face in meeting maximum day demands during the irrigation season. This task series includes engaging the operators to identify, develop and implement improvements to better prepare for summer demands. This will be done in parallel with, but also inform, the WTP expansion design for long term needs. Our process technology lead engineer, Karla Kinser, will host *Workshop 2 – Operations Investigations* to identify current issues and potential ways to improve them. This workshop is designed to create an itemized list of operational, maintenance, mechanical, electrical or control improvements that can be fast tracked.

Many of these items may be achieved by modifying the current O&M practices. However, some will require additional engineering support, analysis through testing, or consultation with approving authorities to be successfully implemented. Our scope and fee include time to support the Town and its operators with this critical task, through the engineering and assistance with procurement, installation support and start-up consulting.

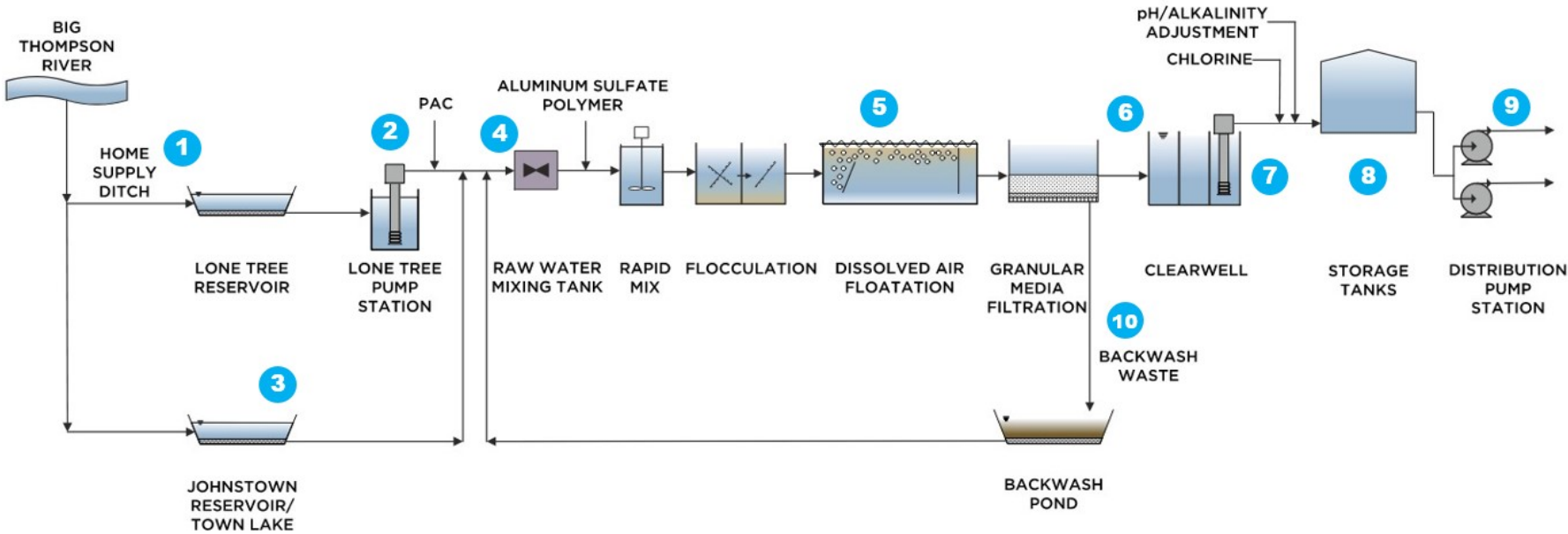


Figure 2-13. Suggested Remedies for Current Operational Bottlenecks

Table 2-3: Short Term Operations Fixes		
1	Bypass Pumping at Home Supply Ditch	Add temporary pumps in the Ditch to bypass Lonetree Reservoir during T&O events. Send Ditch water to the Lonetree Pump Station even when water levels are high.
2	PAC	Increase auger capacity at Lonetree for improved T&O control
3	Town Lake	Install ultrasonic buoy system in Town Lake to limit algae growth
4	Coagulant	Convert to cationic-polymer based coagulant from alum
5	Optimize DAF	Conduct testing to optimize TOC and algae removal in the existing DAF, increase solids capture to increase filter run times and reduce backwash water volumes
6	Filtered Water Header	Add air release valves to prevent air locking
7	Filtered Water Pumps	Rebuild pumps to increase capacity and avoid cavitation during high flows or replace in a deeper well below the clearwell
8	Log Removal Credits	Investigate use of baffles in GST to improve baffling and reduce the storage height required, study potential of alternative log removal credits to reduce the contact time required.
9	Distribution Pumping	Adjust operating setpoints to keep the 0.75 MG storage tank full and buffer peak hour flows out of GST
10	Backwash	Adjust the time of day for backwashes to where there is lower demand to maintain operating levels in the GST

Section 3. Management Approach

Components of Our Proactive Management Approach to Promote Project Success



Project Approach

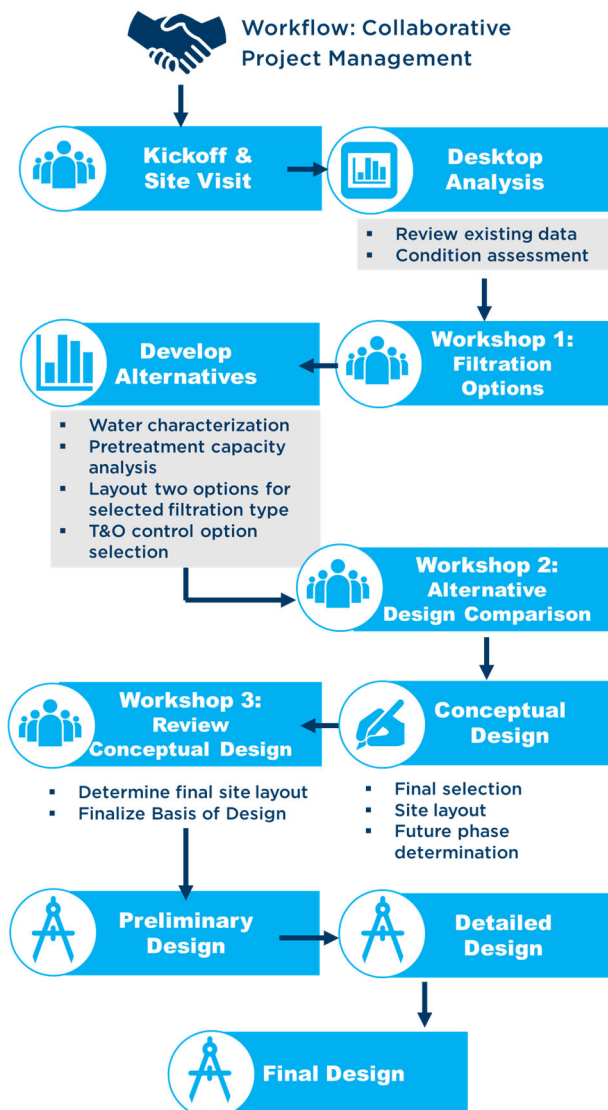
The Burns & McDonnell team has the right experience to plan and design this project for the Town of Johnstown (Town). Making the project successful starts with understanding your specific operational preferences. **Our team's approach is client centric.** We will use an interactive design process that involves your stakeholders every step of the way, making sure that project objectives and expectations are understood and addressed. This ongoing dialogue will be especially important during the early stages of the design process when critical decisions are being made.

Design Approach

Our approach to design is simple – have the right people available when they are needed. Since we have all design disciplines under one roof in our local office, managing our internal resources is a matter of good planning practices. Our project teams maintain a resource planning database and calendar to forecast our discipline engineers. We use these tools to improve efficiency, manage workloads, and make sure we can meet the deadlines we promise.

Key personnel such as the project manager, design manager, and critical discipline leads typically stay involved with projects continuously during their execution. Discipline engineers may have time gaps between when they are needed to complete tasks. In all cases, our engineers stay with projects from planning through construction so that the engineer who specified a piece of equipment will be reviewing the shop drawing prior to installation.

During the project design phase, our project manager will participate in **biweekly project meetings** with the Town. We use these meetings to discuss design elements, project schedule, future milestones, and current progress. We also hold project workshops, as detailed below, at critical design points to discuss alternatives and obtain project feedback.



Use of 3D Modeling

Our design team uses Autodesk Revit to generate plan sets. It is a great tool for all new treatment facility projects as well as many retrofits depending on the complexity of the project. Some of the benefits of using a 3D model include schedule coordination, conveying the design to the owner, and making conflicts easy to spot. For those who do not regularly look at plan sets, we can create a preliminary model that shows walls, pumps, equipment, and the spacing in the area.

We can also easily create models for a “walk through” to show what the final product will look like, including virtual reality models. It is easy to modify the preliminary model based on the owner’s desired changes. This allows us to home in on the final product prior to completing the costlier final engineering calculations.

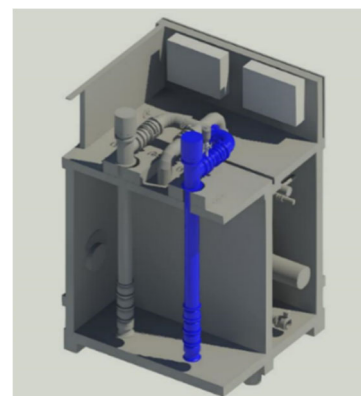


Figure 3-1. 3-D models showing new pump station at a WTP expansion

Focus on Permitting

Understanding that the schedule is often controlled by outside agencies, our team makes **submittals our priority**. We will provide guidance on the regulatory requirements with Town and/or Weld County building inspection, Town building department, fire department, CDPHE and other agencies to develop a Permitting Matrix. This table will identify key project submittal milestones during detailed design and review timelines to avoid unforeseen delays later in the project.

Preliminary, Detailed and Final Design

Upon determining the Basis of Design, per the Collaborative Workflow shown above, we will advance with detailed design, with submittals at 30%, 60 and 90% and final design (bid-ready documents). The following tables describe the design deliverables by milestone, to show their degree of completeness as the project progresses.

Table 3-1: Engineering Discipline Percent Complete by Project Milestone

Design Milestone: Criteria	30%	60%	90%	Final
Treatment Process Layout & Design	60	90	100	100
Process & Instrumentation Diagrams (P&ID)	50	90	100	100
Site Civil (Grading, Yard Piping)	40	70	100	100
Structural	20	70	90	100
Architectural	40	80	90	100
Mechanical (Plumbing, heating, ventilation)	20	60	90	100
Electrical	10	60	80	100
Instrumentation & SCADA	20	40	60	100
Phasing and Demolition	30	70	90	100

Table 3-2: Design Milestone Comparison

Design Milestone: Deliverable	30%	60%	90%	Final
Specifications	Table of Contents	Draft specs	Div. 00 contracting documents, final technical specs	Sealed by PE

Table 3-2: Design Milestone Comparison

Design Milestone: Deliverable	30%	60%	90%	Final
Drawings	Sheet Index, preliminary drawings	Plans, sections, details for all buildings and processes. Submit to CDPHE	Complete drawing set, update based on CDPHE feedback	Sealed, suitable for final construction
Process Flow Diagrams	Schematic for process units	Final	Complete	Complete
P&ID	Draft	Near final	Final	Complete
Equipment list	Initial list	Final list with data packages	Equipment specifications finalized	Complete
Hydraulic Profile	Draft	Final	Complete	Complete
Site Plan	Structure location and yard piping, surface improvements	Grading, erosion control, survey control	Final surface improvements	Complete
Buildings	Approximate size and floor plans, code requirements, elevations	Floor plans and sections with piping,	Final details	Complete
Opinion of Probable Construction Costs	Class 4 (-30 to +50%)	Class 2 (-15 to +20%) Or by CMAR	Class 1 (-10 to +15%) Or by CMAR	Class 1 Or updated by CMAR, for any changes post 90%
Constraints	Key design/ construction constraints identified (floodplain, Geotech, phasing)		Described in Div. 00	
Electrical	Equipment layout, one-line diagram for power distribution	Draft process control narrative (PCN) describing automation, monitoring strategies	Final PCN	Complete
Schedule	Estimated construction duration, initial sequencing plan	Updated duration, sequencing	Complete	Per bidding

Project Schedule & Cost Management

The Burns & McDonnell team uses a portfolio of proven tools and processes to look at both near- and long-term project drivers to determine how they can, should, and will fit into the project to meet both budget and schedule parameters.

We use a well-developed accounting system, EcoSys, to track labor costs, expenses, and billing. Brett Pugh will be responsible for setting and controlling the budgets for your project. As part of the billing process, he will review billed hours, expenses, and costs monthly. He will also use additional tools to track progress and forecast expenditures through the end of the project. As labor hours and costs are recorded through our weekly time sheet process and expense management system, the data becomes available to him through a cloud-based system to analyze current and projected costs for the project.

While the financial systems track costs, the **most important part of cost control is managing the team.**

We take a focused approach to design, in which our key discipline engineers complete the conceptual design to clearly understand our path forward before we involve the expanded team to complete the final design. This helps us keep each design discipline focused and moving the project forward through managing the sequence of deliverables.

All invoices will include a one-page status report that identifies work accomplished during the invoiced period, and work planned for the upcoming invoice period and a recap of fund expended/funds remaining for project.

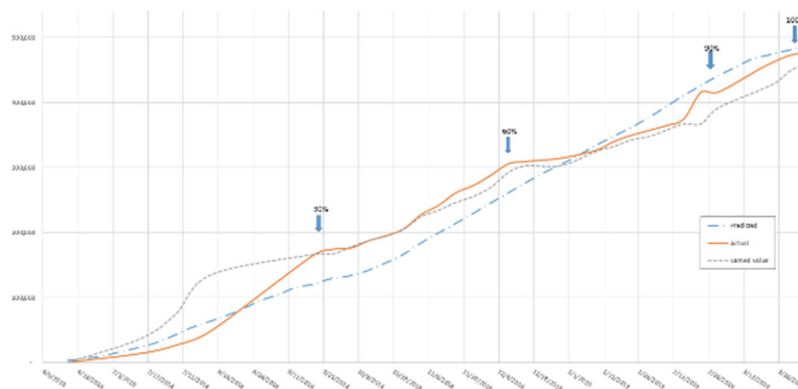


Figure 3-2. Example design project S-Curve comparing forecast, actual and earned value.

Opinions of Probable Cost

Our team is committed to providing you with biddable/constructible design documents and opinions of probable cost throughout design that you can rely on. Because of our vast history of water plant design and in-house construction experience, we have a library of recent constructed projects and bid prices which will inform the opinions for this project.

We understand that the Town has a target capital cost planned for the upgrades. We will focus on designing the upgrades required at this time, while keeping an overall plan for the facility in mind and making sure those upgrades fit into the overall plan.

Maintaining updated cost opinions and life cycle costs is as important as monitoring project financials or updating drawings. As detailed design progresses, concepts are changed, design workshops are held, etc., all impacting the facility cost. Our approach is to prepare updated cost opinions and life cycle costs following milestone completions, such as preliminary design, 60% design, 90% design, and 100% design.

Value Added

Our team does not rely on cost tools or models available on the market to estimate costs for water treatment plants; *we use ground up estimates informed by local market data.*

We also plan to leverage either our internal construction staff or our construction partner, Garney Construction, provide a second check on our estimates and to contribute a larger set of construction cost data.

Our estimates will help the Town plan out the capital works that work within your budgets. This defensible approach helps support water rate increases and help the Town set appropriate rates for tap fees.

Assistance with Funding Sources

Funding the construction of the expansion of the WTP may require a combination of rate increases, bonds, grants, and loans. Loans are available through the State Revolving Fund (SRF) administered through the CDPHE. There also may be other existing federal grants or new loans available due to the change in the federal administration, for example through other avenues such as the Clean Water Fund. Burns & McDonnell has extensive experience assisting our clients in determining all avenues available to obtain grants and loans. We routinely aid in filing applications and administration of the CDPHE SRF. We have included an optional task to assist the Town in obtaining funding for the project once a cost estimate has been prepared and a budget understood.

Life Cycle Optimization Tool

An understanding of all costs associated with any option considered for the WTP is critical. For example, while the capital cost of a GMF expansion utilizing the existing filters may appear less than a 12.4 MGD expansion using membranes, there may be significant differences in the overall life cycle once a 20 or 50-year life horizon of replacement, maintenance, and all operating costs such as PAC or GAC replacement are considered. Our approach is to present construction (or capital) costs along with chemical, electrical, and estimated labor costs for each option, and any impacts to other facilities in the plant for the predetermined life horizon presented as a net present value so the Town may evaluate each option completely. These costs are utilized in conjunction with non-cost criteria for a formal evaluation of all alternatives so that a best-value selection may be made for the WTP. ***Our life cycle tool is invaluable when considering value engineering options because a deduction in capital costs can result in a large increase in operating costs.***

Schedule

We will develop a schedule in Microsoft Project at the start of the project with your input incorporated. We will use the schedule to forecast resources, plan the overall project execution, and help define proposed deliverables. The schedule is a living document and will be updated as the project progresses. Typically, it will be updated each month as part of the invoicing cycle and compared against the baseline schedule as the project progresses. Internal accounting software will generate up to date spending reports for Brett to compare against the forecasted spending to monitor and track the project progress.

Risk Management

Our approach to risk management starts with experienced team leadership. Before responding to an RFP, we determine the correct leadership team to review the agreement, complete the work, and provide quality control. If we do not have the right team for the job, then we will not go after a project.

A large portion of the projects our proposed team works on are executed using alternative delivery methods, such as design-build, construction manager at risk (CMAR), and engineer-procure-construct (EPC). All of these projects go through an in-depth risk review process to confirm design risk, cost risk, construction risk, external risks, schedule risk, etc. This experience improves our ability to identify pitfalls in project alternatives and designs at the earliest stages of planning. While we are not delivering this project through an alternative delivery model, we are already aware of the key project risk and will address risk items in our internal project execution plan. Risk management is enhanced in DB by the integrated project team managing together all components throughout the project delivery (design to construction).

We are already aware of many of the current operational risks and have incorporated those into our Operations Optimization task series described above.

Table 3-3: Preliminary Risk Matrix

Risk or Opportunity Description	Consequence	Mitigation Measure(s)
Obtaining CDPHE construction approval	▶ Delayed schedule	▶ Burns & McDonnell has an excellent relationship with CDPHE ▶ Coordinate early in the design phase
Continued taste & odor issues during design and construction.	▶ Unsatisfied customers	▶ Apply multi-phased approach ▶ Investigate proven technologies ▶ Share plan with customers
Code compliance for existing structures	▶ Add scope late in construction ▶ Delayed schedule	▶ Complete condition assessment at project initiation to identify upgrades
Challenges with connections to existing buried pipelines	▶ Size conflicts ▶ Location conflicts ▶ Material conflicts	▶ Extensive locates and test holes during design phase
Keeping the existing plant operational and treating water within regulatory standards during construction	▶ WTP shut down and unable to treat water ▶ WTP unable to meet standards	▶ Prepare to use available interconnections ▶ Develop worst case scenario contingency plans
Maintain water levels in GST for disinfection compliance	▶ Fail to comply with operating permit	▶ Adjust flow set points to smooth plant flows ▶ Address mechanical issues with filtered water pumps at project outset ▶ Optimize pretreatment to reduce loading on filters
Operating the Lonetree PAC system	▶ Recurring T&O complaints	▶ Upsize existing PAC system capacity ▶ Increase staffing presence

Communications

Burns & McDonnell has been in business for 123 years and recognizes the importance of coordination and communication between your staff and our project team. This begins at the initial coordination/ kickoff meeting where direct lines of communication, project requirements, project scope, public concerns, design criteria, and critical project issues are established.

Table 3-4: Typical Kickoff Meeting Discussion Topics:

▶ Project background and overview ▶ Team introductions ▶ Subconsultants and their roles (if any) ▶ Chain of command ▶ Project goals and objectives ▶ Owner preferences and concerns ▶ Existing asset condition	▶ Project Schedule ▶ Key action item needs ▶ Existing data exchange ▶ Permitting ▶ Project meeting schedule ▶ Delivery model ▶ Filtration option preference
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Our project management approach stresses communication up front so that we understand the Town's needs and goals prior to fully submerging all staff members into the project. The approach includes a process of keeping you informed about progress of the work and keeping you involved in making key decisions through focused and scheduled meetings.

The goal is to balance the needs and goals of the Town with the project cost and schedule. Our approach to design is centered on understanding the problem to be solved and incorporating the preferences of the Town into that solution. We understand that there are often many ways to complete a design, but ultimately, it will not be successful unless your staff and operators are in support of the design.



Figure 3-3. Our straightforward approach to design and approach to project management will result in a smoothly executed project.

Quality

A major benefit of having all disciplines in the same office and dedicated to specific design services, such as municipal water, is that our work teams are coordinated and consistent. Our team's QA/QC program is mandatory on all projects. We use it to develop project documents that adhere to project requirements. Its purpose is to minimize inconsistencies, gaps, and interferences in the documents.

Specific quality control tasks, shown in figure 3-4, will be budgeted into the project. Our timekeeping and manpower system monitors specific task activities. The process implemented on your project could include up to six distinct quality control review subtasks from the beginning of the project to its completion, as shown in the figure.

As the project manager, Brett Pugh will be responsible for organizing all aspects of your project's quality control activities including:

- ▶ Scheduling QA/QC reviews
- ▶ Assembling review teams
- ▶ Overseeing in-house quality reviews
- ▶ Coordinating with the Town on QA/QC requirements

Brett will also coordinate with the project team so that the quality control functions are smoothly incorporated into the overall scope.



Figure 3-4. Quality Management Plan Steps.

Resources

Our team routinely completes multiple projects simultaneously, which is how we are able to support so many in-house engineering disciplines. On a project like yours, discipline engineers complete their part of the design in a sequence that meets the submittal schedule. They do not need to be involved throughout the entire duration of

the design, only when their part of the project is active. Discipline leads will remain available for coordination purposes on an as-needed basis throughout the duration of the project. We use this approach to plan resources and make sure we can meet your desired schedule.

This approach offers efficiencies to our local team, who are often collaborating on multiple projects at any given time. The synergies created by working on multiple projects for a single client will create savings by having a single point of contact, reducing the number of site visits, and discuss multiple issues at once spanning both projects. The natural collaboration of our integrated teams saves time and eliminates the need coordinate with a third party. Executing multiple projects puts our team in the best position to understand priorities and where the money needs to be spent the most between the two projects.

275 Resources
In Centennial, CO
42 Local Staff
Dedicated to Water Projects

Bid Phase Support & Project Delivery Option

The Town indicated that they anticipate that the project will be delivered by conventional Design-Bid-Build (DBB) but are interested in Construction Management at Risk (CMAR). Both CMAR and progressive Design-Build (DB) may benefit the project by reducing the overall duration, better controlling costs, and managing/sharing risk.

Our approach can be implemented for any of the delivery methods. An open, collaborative discussion will occur during the preliminary design to determine the optimal solution for the Town. Important considerations include schedule, cost, future phasing, collaboration with the watermain design team, and the Town's comfort level with alternative delivery.

Table 3-5: Project Delivery Method Options

Delivery Model	Benefits	Drawbacks
DBB – Design Bid Build	▶ Traditional method ▶ Owner familiarity ▶ Typically award on lowest bid ▶ Established price	▶ Cost unknown until bid (high bids) ▶ Must fully define project before bidding ▶ Separate contracts for designer and contractor
DB – Design Build	▶ Collaboration ▶ Early bid packages ▶ Open book accounting ▶ Reduce schedule by early start of construction ▶ Single contract for design-builder ▶ Additional value engineering and risk management opportunities.	▶ Learning curve for some owners ▶ Joint venture or prime/sub arrangement between designer and contractor
CMAR – Construction Manager at Risk	▶ Collaboration with contractor during design ▶ Early bid packages ▶ Open book accounting ▶ Additional value engineering and risk management opportunities	▶ Quality based selection, not competitively bid on price alone ▶ Separate contracts for designer and contractor

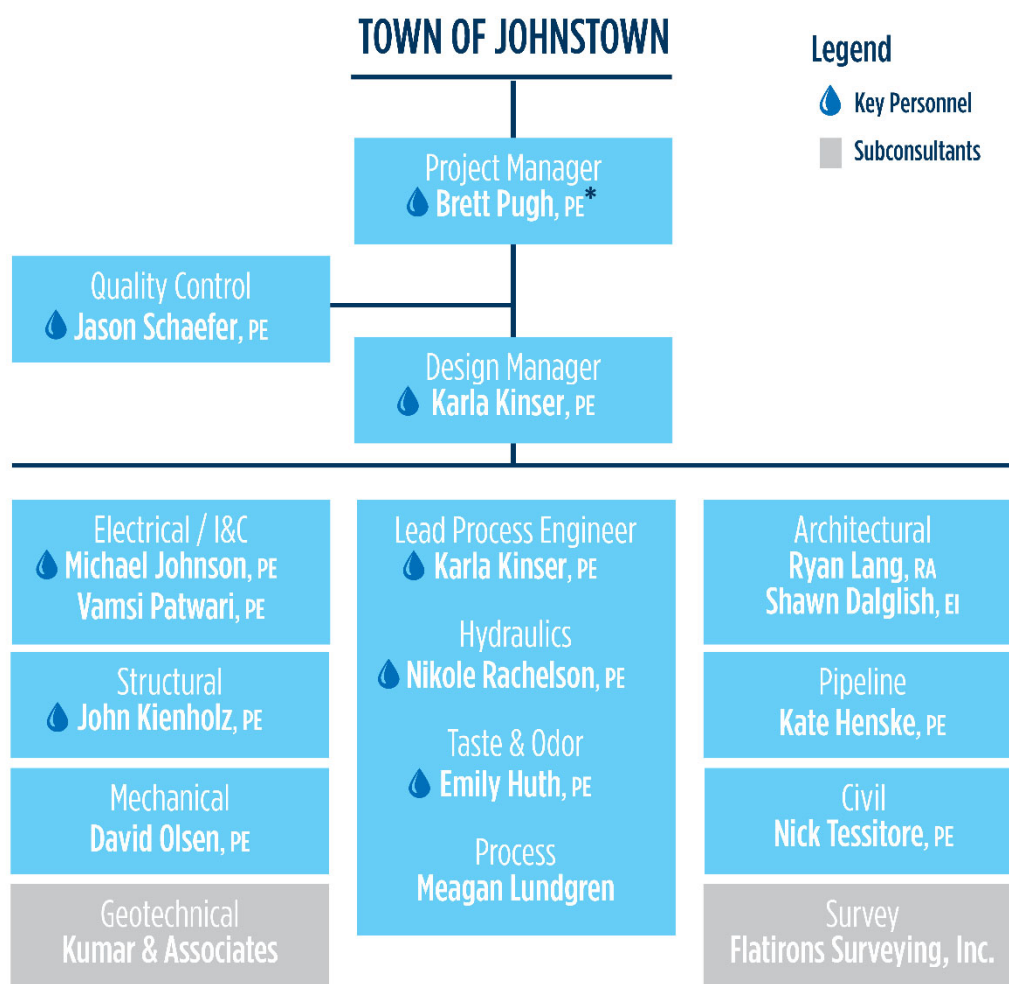
Please refer to Section 7 in this proposal for more information about delivering this project with a design-build delivery model.

Section 4. Staff Qualifications

Organization Chart

Our design team is 100% located in Centennial, Colorado, providing you with readily available in-person interface and allowing our team members to be on site quickly. Brett Pugh, project manager, will be your primary point of contact, partnering with the Town and managing the project's scope, schedule, budget, and quality objectives. Resumes are provided in Attachment A.

The project manager, project engineer, quality reviewer, and key discipline leads will remain engaged with the project throughout construction, providing the Town with seamless support. Our project team organization is set up to seamlessly transition from design only to design-build delivery, should the Town elect to pursue that option.



* There are many opportunities for synergy between the water treatment and wastewater treatment projects. If the same team executes both projects, there would be efficiencies gained from having the project manager be involved in both projects. We would like to discuss the possibilities with the Town. In addition to shared leadership, there would be benefits in terms of shared meetings, reporting, scheduling, and invoicing, which would further promote cost savings and streamline communications across both projects. Likewise, If the Town selects a design-build delivery model, we could also implement a consistent design-build manager across both projects.

Key Team Member Bios & Client References

All key staff will continue to be involved through the construction phase.



Brett Pugh, PE | Project Manager & Point of Contact in Responsible Charge of Project

License | Professional Engineer: CO (Civil) **Location** | Centennial, CO

23 years of experience in both water and wastewater treatment facility design, construction, and commissioning, which includes dissolved air flotation, membrane filtration, and granular media filtration optimization. Has been actively involved with collaborative project delivery (DB, progressive DB, CMAR) for more than 20 years. Partners with clients to understand their key project drivers to develop realistic and cost-effective solutions.

REFERENCES

1	Project Lynn R. Morgan Water Treatment Plant Expansion (2021) \$10.7M Role on Project Project Manager Owner & Contact Town of Erie, CO Todd Fessenden (303) 926-2895, tfessenden@erieco.gov
2	Project Boxelder WWTP Expansion (2021) \$32M Role on Project Project Manager Owner & Contact Boxelder Sanitation District Brian Zick: (970) 498-0604, brianz@boxeldersanitation.org
3	Project Dodd WTP Hydroelectric Project (2020) \$3M Role on Project Project Manager Owner & Contact Left Hand Water District Chris Smith (303) 530-4200, chrissmith@lefthandwater.org



Jason Schaefer, PE | Quality Control/Assurance

License | Professional Engineer: CO (Civil) **Location** | Centennial, CO

13 years of experience as a senior process design engineer, project manager, and quality reviewer for major water treatment facility retrofits and new plants, using both traditional and collaborative project delivery methods. Extensive experience in pretreatment, treatment process selection, plant optimization, and design-build delivery. Will provide knowledgeable guidance in both project scope development and engineering solutions.

REFERENCES

1	Project Dodd WTP Upgrades (2016) \$28M Role on Project Project Manager / Project Engineer Owner & Contact Left Hand Water District Chris Smith, District Manager: (303) 530-4200 chrissmith@lefthandwater.org
2	Project Thornton WTP Replacement (2020) \$100M Role on Project Project Manager Owner & Contact City of Thornton Dennis Laurita: (303) 538-7649 dennis.laurita@thorntoncolorado.gov
3	Project Advanced Treatment at Plum Creek Water Purification Facility (2021) \$29M Role on Project Project Manager Owner & Contact Town of Castle Rock Tim Friday: (720) 733-6030 tfriday@crgov.com



Karla Kinser, PE | Design Manager/ Lead Process Engineer

License | Professional Engineer: CO (Civil) **Location** | Centennial, CO

26 years of experience in water treatment, serving as a project engineer, lead process engineer, and filtration specialist. Globally recognized subject matter specialist in membrane treatment. Has led the multi-discipline design effort for large water treatment plant expansions and retrofits nationwide.

REFERENCES

1

Project | TDS Reduction at Cherokee Water Reclamation Facility (2021) \$42M
Role on Project | Lead Process Engineer
Owner & Contact | Cherokee Metropolitan District
 Jeff Munger: (719) 597-5080 ext. 115 | jmunger@cherokeemetro.org

2

Project | Wes Brown WTP Membrane Analysis and Pilot, Train 8 Mods (2021) \$1.2M
Role on Project | Lead Process Engineer
Owner & Contact | City of Thornton
 Stacy Roberts: (720) 977-6252 | Stacy.Roberts@thorntoncolorado.gov

3

Project | Lynn R. Morgan Water Treatment Plant Expansion (2021) \$10.7M
Role on Project | Membranes Specialist
Owner & Contact | Town of Erie, CO
 Todd Fessenden (303) 926-2895, tfessenden@erieco.gov



Nikole Rachelson, PE | Process Engineer (Hydraulics)

License | Professional Engineer: CO (Civil) **Location** | Centennial, CO

14 years of experience with both water treatment plant and pump station hydraulics at facilities ranging from 1 to 215 MGD. Experience includes design and analysis of hydraulics to optimize functionality, determine hydraulic capacity, accommodate complicated retrofits without impacting upstream processes, and maximize efficiency.

REFERENCES

1

Project | Interim Compliance at Fountain Valley Authority WTP (2017) \$1.1M
Role on Project | Project Manager
Owner & Contact | Colorado Springs Utilities
 Jerad Barnett: (719) 688-4546 | jbarnett@csu.org

2

Project | Eaton Pump Station Relocation (2018) \$1.8M
Role on Project | Project Manager / Hydraulics Lead
Owner & Contact | City of Westminster
 Julie Koehler: (303) 658-2178 | jkoehler@cityofwestminster.us

3

Project | Highlands Booster Pump Station (2016) \$700K
Role on Project | Project Manager / Hydraulics Lead
Owner & Contact | Cottonwood Water & Sanitation District
 Ron Lambert, Owner's Engineer, Mulhern: (303) 649-9857 | ron@mulhernemre.com



Emily Huth, PE | Process Engineer (Taste & Odor)

License | Professional Engineer: WY (Civil) **Location** | Centennial, CO

Six years of experience as a process design engineer and project engineer on water treatment facility projects. Experience includes piloting of filter loading rates, pretreatment, and filtration; and process designs that address taste and odor concerns in variable water sources.

REFERENCES

1

Project | Thornton WTP Replacement (2020) \$100M
 Role on Project | Project Engineer
 Owner & Contact | City of Thornton
 Dennis Laurita: (303) 538-7649 | dennis.laurita@thorntoncolorado.gov

2

Project | Wes Brown WTP Membrane Analysis and Pilot, Train 8 Mods (2021) \$1.2M
 Role on Project | Assistant Project Manager, Process Engineer
 Owner & Contact | City of Thornton
 Stacy Roberts: (720) 977-6252 | Stacy.Roberts@thorntoncolorado.gov

3

Project | Gregory Hill Pump Station (Part of Pressure Zone 3 Expansion)
 Role on Project | Project Engineer
 Owner & Contact | City of Westminster
 Julie Koehler: (303) 658-2178 | jkoehler@cityofwestminster.us



John Kienholz, PE | Structural Engineer

License | Professional Engineer: CO (Civil) **Location** | Centennial, CO

17 years of experience focused in the water industry, designing steel, concrete, and masonry structures and substructures. Has served as the lead structural engineer on some of the largest water treatment and wastewater treatment projects in the Denver Metro area. Also serves as a building information model (BIM) coordinator for these projects, coordinating the design effort across multiple disciplines.

REFERENCES

1

Project | Advanced Treatment at Plum Creek Water Purification Facility (2021) \$29M
 Role on Project | Lead Structural Engineer
 Owner & Contact | Town of Castle Rock
 Tim Friday: (720) 733-6030 | tfriday@crgov.com

2

Project | Thornton WTP Replacement (2020) \$100M
 Role on Project | Structural Engineer
 Owner & Contact | City of Thornton
 Dennis Laurita: (303) 538-7649 | dennis.laurita@thorntoncolorado.gov

3

Project | TDS Reduction at Cherokee Water Reclamation Facility (2021) \$42M
 Role on Project | Lead Structural Engineer
 Owner & Contact | Cherokee Metropolitan District
 Jeff Munger: (719) 597-5080 ext. 115 | jmunger@cherokeemetro.org



Michael Johnson, PE | Electrical/I&C Engineer

License | Professional Engineer: CO (Electrical) **Location** | Centennial, CO

20 years as an electrical and controls engineer, with experience in the water industry spanning treatment facility expansions, new treatment facilities, and pump stations.

REFERENCES

1

Project | Lynn R. Morgan Water Treatment Plant Expansion (2021) \$10.7M
 Role on Project | Electrical Engineer
 Owner & Contact | Town of Erie, CO
 Todd Fessenden (303) 926-2895, tfessenden@erieco.gov

2

Project | Broomfield WTF Expansion (2020) \$16M
 Role on Project | Electrical Engineer
 Owner & Contact | City and County of Broomfield
 Ronda Jo Ackerman Alford: (303) 464-5807 | ralford@broomfield.org

3

Project | First Creek Lift Station Capacity Improvements (2021) \$407K
 Role on Project | Electrical Engineer
 Owner & Contact | City of Aurora
 Andrea Long: (720) 859-4346 | along@auroragov.org

Additional Design-Build Resources

If the Town is interested in design-build, Jason Schaefer will serve as the design-build manager, and Garney Construction will serve as the construction manager.



Matt Wampler, DBIA | Construction Manager

Garney Construction **Location** | Littleton, CO

20 years of construction experience in the water industry with a strong background in design-build. Role includes day to day field operations, client interface, material procurement and approvals, and subcontractor management. Recent experience working with Burns & McDonnell on two large treatment facilities in Colorado using design-build delivery. Select recent experience includes:

- ▶ Construction manager, City of Thornton, Thornton WTP Replacement (20 MGD, \$100M) (Progressive Design-Build with Burns & McDonnell)
- ▶ Construction manager, Cherokee Metropolitan District, TDS Reduction at Cherokee Water Reclamation Facility (\$42M) (Progressive Design-Build with Burns & McDonnell)
- ▶ Senior project manager, Metro Wastewater Reclamation District, PAR 1088 Northern Treatment Plant (\$98M) (Progressive Design-Build)
- ▶ Senior project manager, City of Loveland, Wastewater Treatment Plant Improvements (\$35M)

Subconsultants

We often subcontract with topographical surveying and geotechnical firms with local knowledge and relationships. Our team has successfully worked with the firms below on water projects across the Front Range.

- ▶ **Kumar & Associates** provides geotechnical engineering services, environmental sciences, engineering geology, construction observation, and material testing. Their more than 80 professional engineers and geologists, environmental scientists, and engineering technicians have recent water project experience.
- ▶ **Flatirons Surveying, Inc.** has served the Front Range since 1981 as a premier provider of surveying services that include a wide variety of construction surveying and construction layout services. Flatirons has a staff of 50 professionals that includes six licensed surveyors, 10+ field crews, and a complete drafting department.

Section 5. Related Project Experience

Our project team has extensive experience along the Front Range and into Wyoming and Montana. We selected the following projects with the most relevance to the Town. Details on each project immediately follow.

Featured Projects <i>Detailed descriptions are provided on pages 28-32.</i>	Colorado Project	WTP Retrofit / Expansion	Pretreatment	Granular Media Filtration	Membrane Filtration	Taste & Odor Control	DOVE Compliance	Pumping	Plant Size (MGD)	Year Complete
Lynn R. Morgan WTF Expansion		•	•		•	•	•	•	16	2020
Plum Creek WPF Advanced Trmt.		•	•	•	•	•	•	•	6	2021
Dodd WTP Upgrades		•	•		•	•	•	•	16	2016
Broomfield WTF Expansion		•	•	•			•	•	26	2020
Thornton WTP Replacement			•	•		•	•	•	20	2020

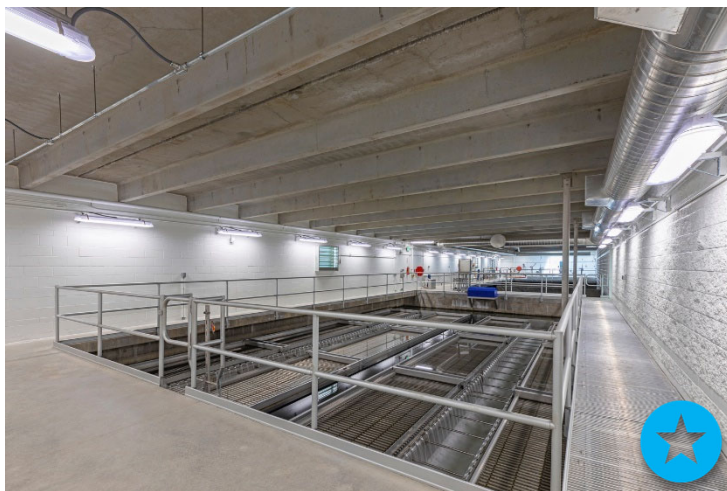
Consistent Project Team

Our project team has worked together on numerous, similar projects in recent years, all in this region. This shared success will benefit the Town by building off our team's relevant local knowledge and we can hit the ground running. Our consistent team will lead to consistent results.

Consistent Team = Consistent Results Owner Project	Brett Pugh	Karla Kinser	Jason Schaefer	Nikole Rachelson	Emily Huth	Meagan Lundgren	Michael Johnson	Nick Tessitore	John Kienholz	David Olsen
City of Thornton Thornton WTP Replacement	•	•	•		•	•	•	•	•	•
Left Hand Water District Dodd WTP Upgrades			•	•	•			•	•	
Town of Erie Lynn R. Morgan WTF Expansion	•	•	•	•			•	•	•	•
Town of Castle Rock Plum Creek WPF Advanced Treatment	•	•	•	•	•	•	•	•	•	•
City and County of Broomfield Broomfield WTF Expansion	•		•	•			•	•	•	•
City of Westminster Pressure Zone 3 Expansion		•	•	•	•		•	•	•	•
Colorado Springs Utilities Rechlorination at Research & Roxbury Pump Stations		•	•	•			•	•	•	•
Denver Water Moffat WTP Modifications (DP#7)	•	•	•	•					•	•
Left Hand Water District Dodd Hydroelectric Facility	•		•	•			•	•	•	•
Mt Carbon Metro District Morrison WTP Expansion	•	•	•	•				•	•	•

Featured Projects

Lynn R. Morgan WTF Expansion | Erie, CO



The Town of Erie required an expansion of the Lynn R. Morgan WTF to meet the needs of a growing customer base. Our team provided design and construction phase services to expand the WTF from 9.9 to 16.6 MGD. The expansion includes a micro-turbine facility for hydroelectric generation on their Carter Lake Reservoir supply from the Northern Colorado Water Conservancy District, yard piping modifications, a new pretreatment train consisting of 4-stage flocculation and inclined plate settlers, three new 2.25 MGD submerged membrane trains, a new 4,500 gpm high service pump and a new 30-inch finished water transmission main.

The existing submerged membrane systems included six submerged membrane cells with only three trains populated. The expansion added membrane modules, permeate pumps, piping, valves, and associated instrumentation to the three vacant cells. The entire submerged membrane control system was updated to replace discontinued hardware. The existing ancillary equipment will be maintained to reduce the overall project cost.

The Town of Erie receives its raw water from a blend of Carter Lake, the Boulder Feeder Canal, Erie Lake, and the Thompson Reservoir. The Town was experiencing taste and odor issues attributed to the presence of geosmin in the raw water supply. Burns & McDonnell completed jar testing and prepared a study to identify alternatives to broadcasting an algaecide to its reservoirs. Powdered activated carbon injection, granular activated carbon absorption, ozone, and biologically active filtration were evaluated, with PAC selected as the most cost effective for the anticipated geosmin levels and blending ratios.

The project included a characterization of the raw water sources to identify operational savings based on seasonal variations and combinations of sources. Operations data from both the submerged and pressurized membrane plants were analyzed to identify seasonal trends, assess the efficacy of the current cleaning protocols, and flag opportunities for optimization.

Construction was phased to avoid impacts on operations, with the submerged membrane installation occurring during a seasonal outage during low demand periods. Our team worked with Garney Construction, using a CMAR collaborative delivery method, to procure long-lead equipment early, reducing the overall construction duration by 10 weeks.



Collaborative Delivery Project with
Garney Construction

CLIENT & REFERENCE

- ▶ Town of Erie, Colorado
Todd Fessenden, Public Works
Director - Utilities
(303) 926-2895
tfessenden@erieco.gov

PLANT SIZE

- ▶ 16 MGD

COMPLETION DATES & VALUE

- ▶ Design Complete: February 2019
- ▶ Construction Complete: 2020
- ▶ Design Fee: \$1.5 million
- ▶ Constructed Value: \$12.8 million

FIRM'S ROLE & SERVICES

- ▶ Prime Consultant
- ▶ Preliminary Design, Final Design,
Construction Phase Support

KEY STAFF

- ▶ Brett Pugh, Project Manager
- ▶ Karla Kinser, Membrane Specialist
- ▶ Jason Schaefer, Quality Control
- ▶ Nick Tessitore, Civil
- ▶ David Olsen, Mechanical
- ▶ John Kienholz, Structural QC
- ▶ Michael Johnson, Electrical

Thornton Water Treatment Plant Replacement | Thornton, CO



The new Thornton Water Treatment Plant (TWTP) was implemented to replace the existing Thornton Treatment Plant (originally constructed in 1955), which was near the end of its useful life. The new TWTP has a firm capacity of 20 MGD and works in concert with the Wes Brown WTP to serve the City's water needs.

Our team performed a six-month pilot that included pre-oxidation, pretreatment, intermediate ozone, and biofiltration. This led to the process train selection of raw water oxidation, pumped rapid mix, flocculation, sedimentation with plate settlers, advanced oxidation with ozone and hydrogen peroxide, biologically active filtration, and chlorine disinfection. The TWTP includes advanced treatment train is designed to accommodate 99.9% taste and odor removal.

Though the existing plant met all current regulatory standards for water quality, the new TWTP is a much more flexible plant that can adjust to treat several source water conditions and exceed existing water treatment standards. In addition, it was designed with hydraulic capacity for emergency treatment during high-flow periods. The pilot-tested and CDPHE-approved high filter loading rates allows for sustained peak flows during high demands systems. However, the TWTP will be operated at a more conservative filter loading rate.

The TWTP treats water from Thornton's two primary existing surface water sources: Standley Lake and the South Platte River. Water from Standley Lake presents few quality issues, though seasonal fluctuations sometimes create reduced volumes of water available from that source. Water obtained from the South Platte presents chronic challenges with taste and odor, a problem stemming primarily from the presence of organic matter, algae blooms, and other constituents. TWTP can isolate treatment of the respective water sources coming into the plant. This gives operators the flexibility to isolate or blend the two raw water sources as needed, optimizing chemical use, and potentially saving costs. The inclusion of multiple chemical injection points throughout the treatment train also aids in operational flexibility. This feature, combined with strategically placed instrumentation, allows the city to quickly respond to significant variations in water source quality.



You guys are just fantastic. Great partners... a hell of a team. It is a pleasure to work on projects with you and this project was outstanding. Thanks for all you do.

- Dennis Laurita, City of Thornton

CLIENT & REFERENCE

- ▶ City of Thornton, Colorado
Dennis Laurita
Contract Administrator
(303) 538-7649
dennis.laurita@thorntonco.gov

PLANT SIZE

- ▶ 20 MGD

COMPLETION DATES & VALUE

- ▶ Design Complete: 2018
- ▶ Construction Complete: 2020
- ▶ Design Fee: \$5,079,130
- ▶ Constructed Value: \$100 million

FIRM'S ROLE & SERVICES

- ▶ Subconsultant to Contractor
- ▶ Piloting, Preliminary Design, Final Design, Construction Phase Support

KEY STAFF

- ▶ Jason Schaefer, Project Manager
- ▶ Brett Pugh, Quality Control
- ▶ Karla Kinser, Quality Control
- ▶ Emily Huth, Project Engineer
- ▶ John Kienholz, Structural
- ▶ Nick Tessitore, Civil
- ▶ David Olsen, Mechanical
- ▶ Michael Johnson, Electrical

Dodd WTP Upgrades | Niwot, CO



Burns & McDonnell worked as part of a design-build team with Garney Construction to upgrade to the Dodd Water Treatment Plant (DWTP) in Niwot, Colorado. Burns & McDonnell permitted and designed and the upgrades to the DWTP. The DWTP includes conventional pretreatment with high-rate inclined plate settlers, MF/UF membranes, clearwell, and high service pumping to increase capacity from an 8 MGD to 10 MGD with the capability to expand to 16 MGD.

Additional facility components include an administration spaces including a laboratory, control center; chemical storage and feed for a coagulant, sodium permanganate, sodium hypochlorite, hydrochloric acid, hydrofluorosilicic acid, citric acid, powder activated carbon, caustic soda, and sodium bisulfite; and full site development including solids holding ponds, storm drainage, and raw water pipes.

The existing Dodd WTP utilized a soda ash feed system for finished water pH and alkalinity adjustment. The District's preference was to change to a sodium hydroxide feed system, both for consistency with the membrane cleaning chemicals used, as well as reducing their reliance on a dry chemical feed system. To make the transition from soda ash to caustic soda, Burns & McDonnell developed a desktop water quality model to identify the stability of the finished water. This model calculated water quality indices such as the Ryznar index, calcium carbonate precipitation potential, dissolved inorganic carbon, aggressiveness index, and Langelier saturation index to determine if changing pH adjustment methods would affect the stability of the water. The desktop model generated the design criteria for the chemical dosing systems, pretreatment with inclined plate settlers in front of the Pall Corporation ultrafiltration membrane system. Our team verified the desktop model chemical dosing rates with a series of jar tests.

The existing disinfection contact basin was abandoned and replaced with a larger basin. Our team worked with CDPHE to develop acceptable CT design criteria at the beginning of the DOVE initiative and was one of the first facilities in the state to meet the criteria.

CLIENT

- ▶ Left Hand Water District, Colorado
Chris Smith
(303) 530-4200
chrissmith@lefthandwater.org

COMPLETION DATES & VALUE

- ▶ Design Complete: 2015
- ▶ Construction Complete: 2016
- ▶ Design Fee: \$2,040,000
- ▶ Constructed Value: \$28.8 million

FIRM'S ROLE & SERVICES

- ▶ Design-Build Joint Venture with Garney Construction
- ▶ Preliminary Design, Final Design, Construction Phase Support

KEY STAFF

- ▶ Jason Schaefer, Project Manager & Lead Process Engineer
- ▶ Nikole Rachelson, Process
- ▶ Emily Huth, Process
- ▶ Nick Tessitore, Civil
- ▶ John Kienholz, Structural



We have no doubt that few teams could have met all of our objectives within such a compressed design and construction timeline. And you did it!

- Christopher Smith, General Manager, Left Hand Water District

Advanced Treatment at Plum Creek WPF | Castle Rock, CO



Castle Rock Water is taking a proactive approach to developing a sustainable, long-term water supply for its customers. Part of this approach includes developing a raw water supply and treatment system capable of meeting demands using 75% renewable sources. As the original designer of the Plum Creek Water Purification Facility (WPF), Burns & McDonnell planned for the addition of advanced treatment systems to the facility that will help the Town meet its renewable source goals.

The Town's strategy to meet these goals includes both planned indirect and direct potable reuse sources from the water reclamation facility. The Advanced Treatment Project includes the addition of additional systems to provide additional removal of giardia, viruses, and cryptosporium, while also targeting reductions in contaminants of emerging concern.

Our team provided piloting, design, and full-time construction observation services for the addition of raw water blending, biological filtration, advanced oxidation, UV, granular activated carbon, and residuals handling to the WPF. The facility is currently rated for 6 MGD but has been designed to expand to 12 MGD in the future.

The granular activated carbon system includes eight adsorption vessels, each filled with 40,000 pounds of direct activated GAC. The system targets emerging contaminants such as pharmaceuticals/ personal care products, as well providing a polishing step for total organic carbon.

The project is being completed using the same Guaranteed Maximum Price Construction Management delivery method that was used for the design and construction of the original facility. Like the original facility, the construction of the project has been divided into multiple work packages to expedite the schedule.

CLIENT & REFERENCE

- ▶ Town of Castle Rock, Colorado
Tim Friday, Engineering Manager
P: (720) 733-6030
E: tfriday@crgov.com

PLANT SIZE

- ▶ 6 MGD

COMPLETION DATES & VALUE

- ▶ Design Complete: 2018
- ▶ Construction Complete: 2021
- ▶ Design Fee: \$1,528,086
- ▶ Constructed Value: \$29 million

FIRM'S ROLE & SERVICES

- ▶ Design-Build Joint Venture with Garney Construction
- ▶ Piloting, Preliminary Design, Final Design, Construction Phase Support

KEY STAFF

- ▶ Jason Schaefer, Project Manager
- ▶ Emily Huth, Project Engineer
- ▶ Karla Kinser, Quality Control
- ▶ John Kienholz, Structural
- ▶ Nick Tessitore, Civil
- ▶ David Olsen, Mechanical

Broomfield WTF Expansion | Broomfield, CO



Burns & McDonnell provided design services to expand the Broomfield WTF's capacity from 20 MGD to 26 MGD, replace existing equipment at the end of its useful life, and bring the WTF into compliance with certain design criteria that have evolved since its original construction. In many cases the improvements also provide ease of future expansion to the WTF to reach its ultimate build out capacity of 32 MGD.

In addition to preparing construction plans and specifications, our team assisted Broomfield in evaluating potential contractors for CMGC services at the 30% design milestone. We prepared the necessary documentation to obtain all pre-construction related permits including CDPHE permit to construct, City and County of Broomfield (CCoB) building permit, CCoB PUD update, and '20-day letter' environmental clearance.

Improvements included expanding the raw water metering and chemical injection vault, replacing the existing rapid mix equipment, replacing existing vertical flocculators, adding a third stage of flocculation, replacing the existing PVC tube settlers with SST lamella plate settlers, adding three filter cells, and improving the existing solids handling and chemical storage/feed facilities.

The project team developed an early equipment procurement package and the filter building foundation to provide the CMGC contractor the ability to start these elements of the work early and meet CCoB's desired timeline. The existing WTF can only be taken offline for a few days at a time and only during low demand season, so coordinating design and construction activities was critical to the project's success.

The solids handling improvements eliminated a significant maintenance issue with an existing circular (hosed) solids collection system with minor piping improvements and equipment improvements and avoiding costly basin modifications, or addition. The chemical system improvements relocated existing pre-treatment chemicals into a new building, closer to the point of application, provide a permanent home for new PAC feed equipment, and provide space for a future chemical of choice. A new soda ash storage and feed building was added much closer to its injection point, reducing the maintenance previously associated with a long run of feed piping. The existing Aqua Ammonia storage and feed system was replaced by liquid ammonium sulfate, reducing safety concerns for WTF staff. The chemical systems remaining in the existing facility were re-partitioned and their feed equipment separated to further enhance working conditions for WTF staff.

CLIENT & REFERENCE

- ▶ City & County of Broomfield, Colorado
Ronda Jo Ackerman Alford
P: (303) 464-5807
E: ralford@broomfield.org

PLANT SIZE

- ▶ 26 MGD

COMPLETION DATES & VALUE

- ▶ Design Complete: 2018
- ▶ Construction Complete: 2020
- ▶ Design Fee: \$1,012,884
- ▶ Constructed Value: \$16 million

FIRM'S ROLE & SERVICES

- ▶ Prime Consultant
- ▶ Preliminary Design, Final Design, Construction Phase Support

KEY STAFF

- ▶ Jason Schaefer, Project Manager
- ▶ Brett Pugh, Quality Control
- ▶ John Kienholz, Structural
- ▶ Nick Tessitore, Civil
- ▶ David Olsen, Mechanical

More Local WTP Expansions & Retrofits Than Any Other Team

The projects shown in the table below presented a wide variety of design and construction challenges as well as extensive permitting requirements. You can be confident that we will mitigate your project's challenges because we have consistently done so on similar projects for local clients. Our approach to design is centered on working with your stakeholders and operators to maximize your budget, and ultimately deliver a facility that will be easy and safe to operate for many years.

 New Water Treatment Facility Designs & Major Expansions <i>DB = Design-Build</i> <i>CMAR = Construction Manager at Risk</i> <i>EPC = Engineer-Procure-Construct</i>	Construction Complete (Year)	Size (MGD)	Delivery Method	Constructed Value (Approx. \$)	Colorado Project	New Facility	Expansion or Retrofit	Inclined Plate Settler Sedimentation	Membrane Filtration
Thornton Water Treatment Plant Replacement	2020	20	DB	\$100M					
Westminster Northwest WTP	2002	15	DB	\$18M					
Westminster Northwest WTP Expansion	2011	20	DB	\$3M					
Westminster Semper WTP Plate Settler Addition	2006	44	DB	\$2M					
TCMWC Maple Grove WTP Residuals Handling	2020	15.6	EPC	\$8.1M					
Castle Rock Plum Creek WPF Advanced Treatment	2020	6	CMAR	\$29M					
Castle Rock Plum Creek WPF	2013	6	CMAR	\$17M					
Left Hand Water District Dodd WTP Upgrades	2016	16	DB	\$29M					
Broomfield WTP Expansion	2020	26	CMAR	\$16M					
Mt. Carbon Metro. Dist. Morrison WTP Expansion	2022	1	EPC	\$13M					
Cherokee Metro. Dist. WRF TDS Reduction	2023	4.8	DB	\$42M					
Erie Lynn R. Morgan WTP Exp. (2)	2020	16	CMAR	\$12.8M					
Erie Lynn R. Morgan WTP Exp. (1)	2010	9.9	DB	\$13.1M					
Erie Lynn R. Morgan WTP Pressure Membrane Expansion	2014	9.9	EPC	\$340K					
Clifton Charles A. Strain WTP Pretreatment Imp.	2009	16	DB	\$6M					
Thornton Wes Brown WTP Exp.	2006	50	CMAR	\$57M					
Colo. Springs Util. FVA WTP TOC Removal	2017	18	DB	\$1M					
Denver Water Moffat WTP Repurposing	2022	150	DBB	\$12M					
Denver Water North Complex EI&C Upgrades	2017	-	EPC	\$6.4M					
Rapid City, SD Jackson Springs WTP	2013	8	DBB	\$20M					
Gillette, WY Pine Ridge Disinfection Facility	2016	10	DBB	\$5.75M					
Billings, MT West End WTP	2024	20	DBB	\$60M					

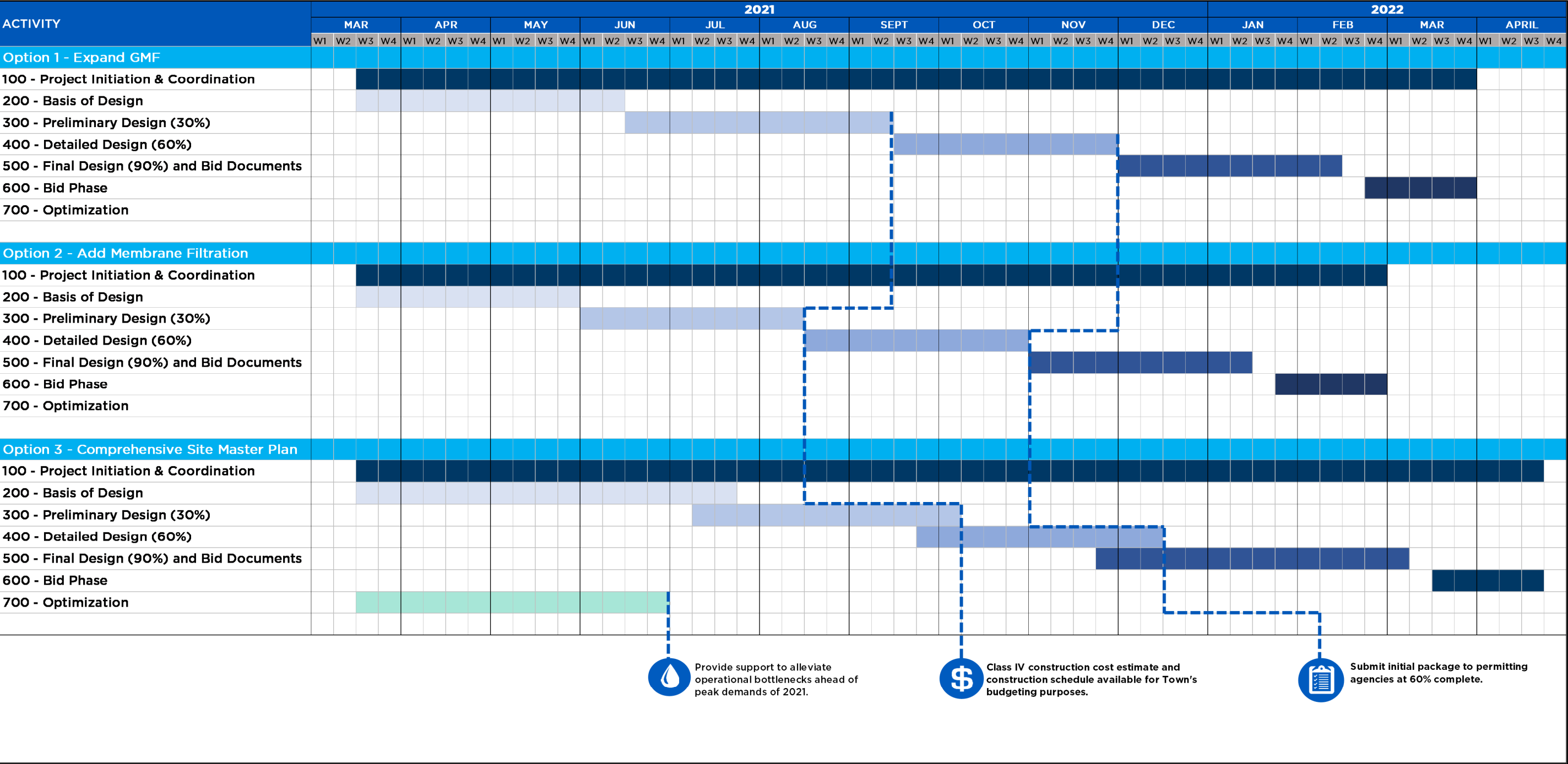
Section 6. Project Schedule

Three project schedules are included herein for your consideration, based on the options described in Section 4, and summarized below. The level of effort and duration varies based on the scope of each option. Our goal is to complete the basis of design and have a preliminary cost estimate to the Town for the late summer of 2021 for your budgeting purposes. The schedules below compare the duration of the major task series. Initial permitting submittals will occur with the 60% complete design packages. Permitting submittal review and approvals periods will vary by agency (Town, Weld County, CDPHE). Option 3 includes a parallel series of tasks to help give your operators some breathing room for the peak demand season of 2021.

Table 6.1: Basis of Schedule and Fee Summary

Approach	Option 1	Option 2	Option 3
Process Unit	Granular Media Filtration Expansion	Membrane Filtration Expansion	Comprehensive Site Master Plan
Lonetree Pump Station & Pipeline	Remain as is		
Town Lake Pump Station	Remain as is		
Raw Water Tank	Remain as is		
Chemical Storage	Remain in existing location	Add storage to the new Membrane Building	
Pretreatment Capacity	Existing DAF 10 MGD		Convert to SAF 12.5 MGD
Filtration	Expand existing Filter Building with 3 new GMF	Add new Membrane Building with 3 trains	
Taste & Odor Control	Maintain existing PAC system		Implement multi-phase approach. Lease to own GAC contactors in Membrane Building. Upgrades at Lonetree, Town Lake, and pretreatment. Future flexibility for T&O control.
Disinfection Compliance	Modify existing GST with baffles		Add new Disinfection Contact Basin sized for ultimate flows.
Treated Water Storage	Use existing GST		Convert GST to distribution storage
Distribution Pump Station	Add new below ground pump station with 3 pumps.		New at-grade pump station with vertical turbine pumps above a new DCB
Backwash Supply	Gravity from existing GST	Backwash from distribution system	
Backwash Waste	Modify existing pond footprint and recycle pump station for Filter Building expansion	No change	
Best Value Project Our initial analysis indicates that Options 1 and 2 result in similar estimated construction costs but limit the future flexibility and operational robustness provided by Option 3.			

Summary Schedule: Options 1, 2, and 3



Section 7. Alternative Delivery Option

Our fee and scope of work for Options 1, 2, and 3 assume that this project will be executed using traditional design-bid-build delivery. We would like to continue our previous discussions of an integrated Design-Build (DB) delivery with our construction partner, Garney Construction.

Burns & McDonnell executes a large percentage of our projects using DB and other integrated delivery methods because it brings great benefits to projects. We continuously work with local clients looking to meet tight deadlines while realizing cost savings on water projects.

An integrated delivery model is the most logical for this project because of the schedule savings it offers. This type of delivery also offers the benefit of efficient collaboration by directly aligning the design and construction team in project understanding and expectations.

Design-Build Team

As stated previously, our proposal is based on design-bid-build approach, as requested by the Town. **However, we are in a unique position to be able to offer the Town a complete DB proposal at the 60% design milestone.**

If the Town elects to pursue a design-build delivery model, we will complete the project with Garney as our construction partner. Burns & McDonnell will complete the engineering and permitting work with in-house staff, while Garney will act as the general contractor, self-performing critical work and managing subcontracted construction trades.

Our specialty in fast-track, integrated delivery projects is driven by strong project management capabilities and a collaborative approach of working with our client, subcontractors, and contractor from the very beginning, to develop an economical, constructible solution.

The Town will benefit from the added value of having both engineering and construction team members working together from the onset of the design. We gain alignment in purpose and understanding, and together, we work toward meeting the Town's goals. Additionally, we are able to achieve earlier price certainty, reduce costs, and expedite the schedule.

Benefits to the Town: Design-Build Delivery

1

One Point of Contact & One Contract

Streamlined project execution - everyone on the team works toward the project goals

2

Collaborative Approach

Design and construction team members work together to solve problems and look for value engineering opportunities

3

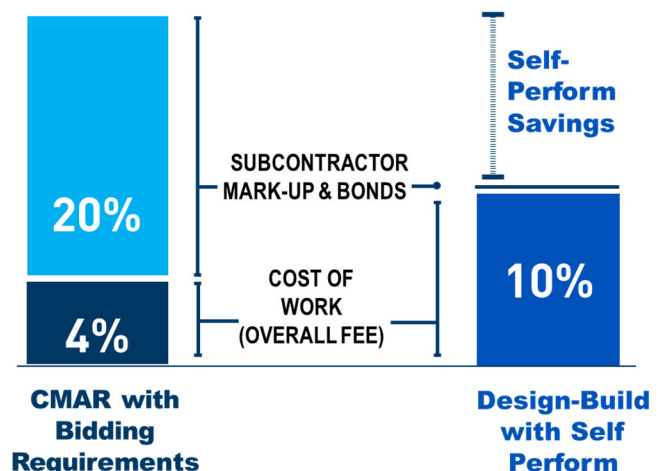
Earlier Price Certainty

Obtain a Guaranteed Maximum Price (GMP) before the design is complete

4

Accelerated Schedule

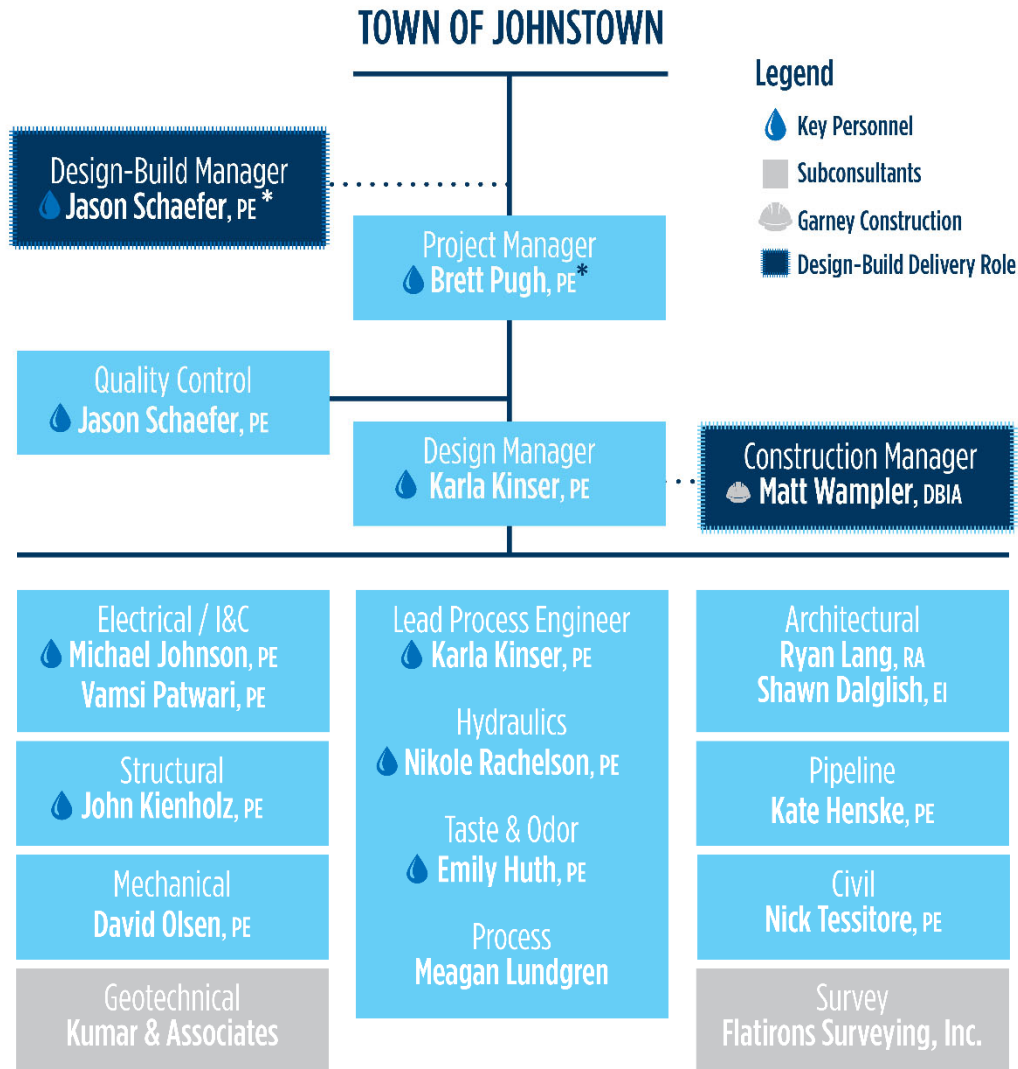
Use early work packages and procure long-lead time items before design is complete



Design-Build Organization

If the Town selects the design-build delivery model, we will transition seamlessly from design into construction, maintaining a consistent staffing structure and adding a design-build manager and construction resources.

You will have a consistent, single point of contact from the beginning of your project through commissioning. We will have one overall design-build manager for the project, a design manager for technical coordination, and a construction manager. We look forward to discussing the specifics and your preferences.



* There are many opportunities for synergy between the water treatment and wastewater treatment projects. If the same team executes both projects, there would be efficiencies gained from having the project manager be involved in both projects. We would like to discuss the possibilities with the Town. In addition to shared leadership, there would be benefits in terms of shared meetings, reporting, scheduling, and invoicing, which would further promote cost savings and streamline communications across both projects. Likewise, If the Town selects a design-build delivery model, we could also implement a consistent design-build manager across both projects.

Selecting a Delivery Method for Your Project

Our team will host a collaborative discussion with the Town during preliminary design to review project delivery options. The discussion will provide a summary of the benefits and challenges of each delivery method to determine the optimal solution for the Town. Important considerations include schedule, cost, seasonal water demands, and the Town's comfort level with integrated delivery.



BMcD / Garney Team Experience Summary

The Town will have the opportunity at the 60% milestone, with the GMP in hand, to select the integrated design-build proposal or just proceed with design and bid the project at final design. If integrated design-build delivery is selected as the path forward, the GMP will include the remaining engineering services and engineering construction services. Our team will be in a strong position to place purchase orders on long-lead time items that were recently bid during the development of the GMP, which will save time.

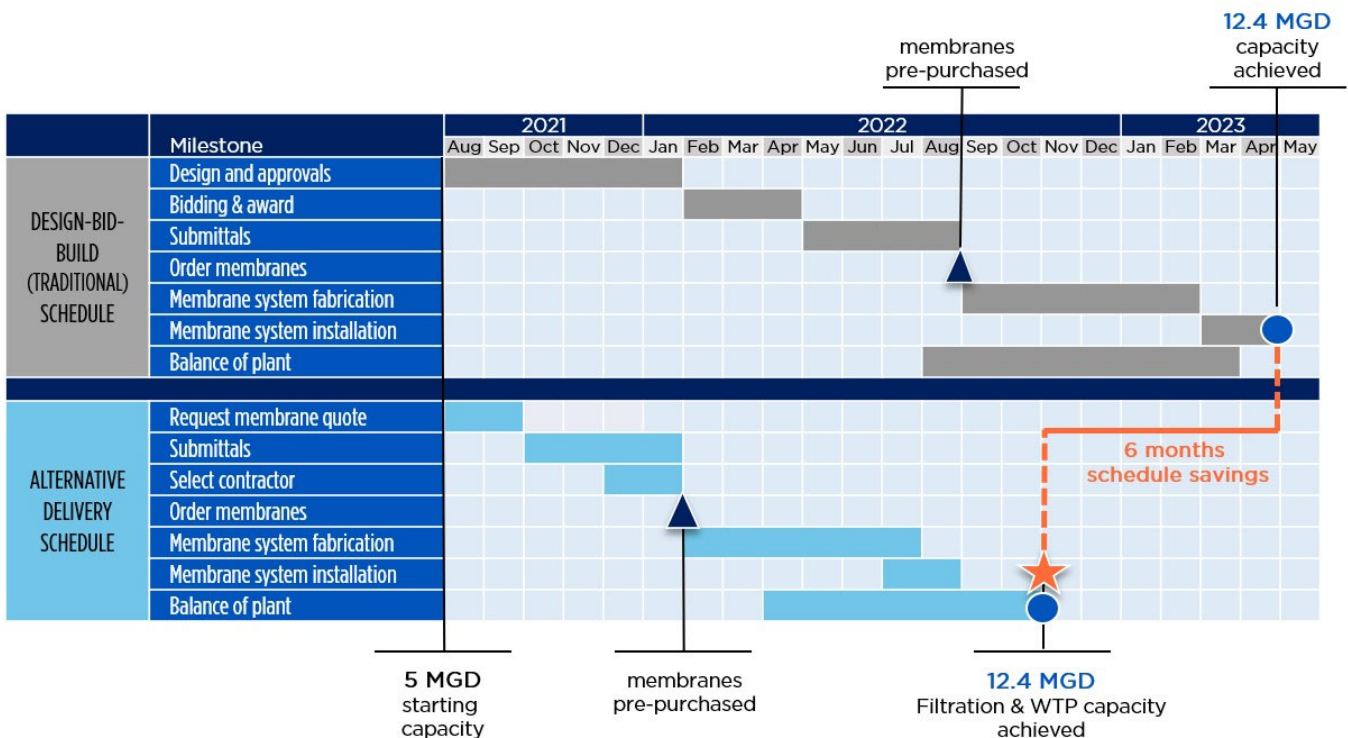


Figure 7-1. Potential Schedule Savings Resulting from Early Purchase of Long Lead Time Equipment in an Integrated Delivery Model

Our design-bid-build fee includes engineering services through to the bidding of construction contractors. An integrated design-build delivery fee does not require 90%, final documents or bid phase services.

The following table outlines the progression of the engineer's (Burns & McDonnell) activities from conceptual design to the bid phase, based on delivery method (DBB, Design-Build, and CMAR).

Table 7-1: Engineer's Role by Delivery Model			
Approach	Design-Bid-Build	Integrated Design-Build	Construction Management at Risk
Conceptual Design 15%	Prepare basis of design with Town input.	Evaluate and select best-value delivery model.	Issue request for qualifications (RFQ) for construction firms through public notification.
Preliminary Design 30%	Select preferred concept with Town. Engineer prepares estimates of construction schedule and costs with available resources.	Contractor engaged to provide pre-construction services - early input on constructability, sequencing, and costs.	Issue request for proposals (RFP) for shortlisted construction firms. Include 30% design for contractors to develop approach, schedule, cost estimate and their fee.
Detailed Design 60%	Advance design to 60%. Submit initial permitting documents. Update construction cost and schedule estimates.	Provide guaranteed maximum price (GMP) proposal to complete design and construction. Price certainty. <i>Engineer's fee does not exceed that listed for 60% design.</i>	Contractor engaged to provide constructability input, cost estimating, scheduling, alternative evaluation. Request quotes for trades and long-lead time equipment.
Final Design 90%	Respond to permitting agency comments. Advance design to best and final format. Prepare pre-bid estimate with project fully defined.	Place order long-lead time equipment to reduce schedule. Start early work package. Update GMP, as necessary, for changes between 60% and 90%.	Finalize supplier quotes and place orders
Bid Phase	Host pre-bid meeting. Respond to first questions from contractors. Comment on received bids. Revise scope or design if bids exceed budget.	Not required.	Not required.

ATTACHMENT A RESUMES

BRETT PUGH, PE

Project Manager



Brett is a senior project manager and professional civil engineer with more than 23 years of experience in project management, design, and construction, collaborative project delivery, and process commissioning. His design experience includes water treatment, wastewater treatment, distribution, and collection. Brett's surface water treatment facility design experience includes new

facilities and expansions using a variety of pretreatment and treatment technologies, including (but not limited to) dissolved air floatation, plate settlers, pressure membranes, and submerged membranes. He works with clients to holistically evaluate options for facility expansions based on their water quality goals, taste and odor concerns, redundancy needs, budget, ease of future expansion, and ease of operations/ maintenance.

EDUCATION

- ▶ BS, Civil Engineering

REGISTRATIONS

- ▶ Professional Engineer (CO, TX)

3 YEARS WITH BURNS & MCDONNELL

23 YEARS OF EXPERIENCE

Taste & Odor Project | Town of Johnstown

Johnstown, Colorado

Project manager for study to evaluate taste and odor control performance of the town's existing powdered activated carbon system at the Lone Tree Reservoir. Conducted jar testing to quantify Geosmin and MIB removals. Compared the PAC system performance with the strategies at other nearby water systems. Developed recommendations for multi-phase approach to taste and odor control at Lonetree Reservoir, Town Lake and at the WTP. Support the town with implementing short-term granular activated carbon system in preparation for summer 2021.

Lynn R. Morgan WTP Expansion | Town of Erie

Erie, Colorado

Project manager for the expansion of the evaluation and design of a 10 MGD WTP upgrade to increase the plant capacity to 17 MGD. The upgrade includes a pretreatment with flocculation and lamella plate sedimentation followed by submerged membrane filtration and a high service pump station expansion. The project included a feasibility study and detailed design of a 80 kW micro-turbine on the existing Northern Colorado Water's SWSP pipeline. Burns & McDonnell assisted the town with securing grant for the feasibility study as well as a matching grant for construction through the Renewable and Clean Energy Challenge program with the Colorado Department of Local Affairs. The project is being executed as a CMAR to expedite the construction and allow for contractor input during design. Construction was completed in July 2020.

Boxelder WWTP Expansion | Boxelder Sanitation District

Fort Collins, Colorado

Project manager for the expansion of the Boxelder WWTP. The District has seen significant development in their service area which has driven the need for expansion. The project doubles the phased isolation biological nutrient removal BNR secondary treatment process trains and brings the facility capacity to 4.6 MGD and 10,000 lbs of influent organic capacity. The project also includes upgrades to the headworks/grit systems, a new UV disinfection system, and aerobic digestion with slow-speed dewatering. The project is currently in construction using a CMAR delivery model and will be complete in August 2021.

BRETT PUGH, PE

(continued)

Dodd WTP Hydroelectric Project | Left Hand Water District

Niwot, Colorado

Project manager for the detailed design and construction administration of a 200 kW micro-turbine addition at the existing 16 MGD Dodd Water Treatment Plant. Left Hand Water District will receive a new raw water supply from Northern Colorado Water's SWSPII pipeline in early 2020. The high pressure in the pipeline made the addition of a micro-turbine feasibility. The generated power will be used at the Dodd WTP to reduce their annual energy bill by providing sustainable energy generation on site. The construction was completed in June 2020.

Morrison CO WTP Expansion | Mount Carbon Metropolitan District

Morrison, Colorado

Project manager. Mount Carbon Metropolitan District is a special district, responsible for supplying water and wastewater services to the Red Rocks Ranch development from the Town of Morrison's WTP. Raw water is sourced from a blend of Bear Creek and the Cooley Reservoir. The proposed design includes an expansion to the exiting pretreatment building. New pretreatment basins and chemical facilities will be installed. Two additional pressurized membrane trains will be installed for additional capacity and redundancy. The existing chlorine contact basin will remain in service with a new high service pump installed. Project tasks include water modeling, jar testing for iron, manganese and uranium removal and cost estimating.

Meyer Ranch Water Reuse Facility* | Randolph Todd Company

Near New Braunfels, Comal County, Texas

Design engineer for a 0.39 MGD wastewater treatment plant using a **membrane bioreactor** and UV disinfection. TCEQ requires a high-quality effluent because the wastewater facility is in the sensitive Edwards Aquifer Recharge Zone. Included a membrane bioreactor, UV disinfection and storage and distribution of Type I reclaimed water for irrigation. The equalization tank was sized to minimize peak hour and maximum daily flow rates to the MBR system to remain in compliance with TCEQ filtration rates.

Pottle Lake Water Treatment Plant* | Cape Breton Regional Municipality

North Sydney, Nova Scotia, Canada

Project manager for a \$12 million, 8 MGD surface water treatment plant using membrane filtration. The new facility is located next to the existing intake and high service pump station, which were maintained in the new system to reduce overall project cost. A two-stage, **submerged membrane system** was used to achieve 99 percent recovery of the raw water, thereby reducing the process wash water load on the nearby capacity limited sanitary sewer.

Longford Water Treatment Plant* | Northern Midlands Council

Longford, Tasmania, Australia

Project manager for the design-build of a \$5M surface water treatment plant for the Town of Longford, Tasmania. The Town of Longford received chlorinated water from a rapidly changing river water supply. Served as the project manager, design lead, and resident construction superintendent on the project. The facility utilizes enhanced coagulation, **dissolved air flotation** and gravity filtration. The building exterior includes architectural features to comply with the local historic town, built in the early 1800s.

* Denotes experience prior to Burns & McDonnell

JASON SCHAEFER, PE, ENV SP

Quality Control



Jason is a senior process engineer, project manager, and quality reviewer with experience managing, planning, optimizing, troubleshooting, designing, and constructing conventional and advanced water treatment facilities. He has 13 years of experience focused on major water treatment facility retrofits and new plants, using both traditional and collaborative project delivery

methods. He has extensive experience in pretreatment, treatment process selection, plant optimization, and design-build. Jason will provide knowledgeable guidance for taste and odor solutions, project scope development, and project delivery options.

Dodd Water Treatment Plant Upgrade | Left Hand Water District

Niwot, Colorado

Project manager and lead process engineer. BMcD worked as part of a design-build team with Garney Construction to upgrade to the Dodd Water Treatment Plant (DWTP) in Niwot, Colorado. BMcD permitted and designed and the upgrades to the DWTP. The DWTP includes conventional pretreatment with high-rate inclined plate settlers, MF/UF membranes, clearwell, and high service pumping to increase capacity from an 8 MGD to 10 MGD with the capability to expand to 16 MGD. Responsible for client interface and managing budget, design, inter-discipline coordination and construction phase services. Worked closely with operators to develop the design and to provide training.

Plum Creek WPF Advanced Treatment Project | Town of Castle Rock

Castle Rock, Colorado

Project manager. Responsible for client interface and managing budget, piloting, detailed design, inter-discipline coordination and construction phase services for this \$30M project, which is adding new treatment processes to the existing Plum Creek facility, also designed by our team. This project is being executed using a construction management at risk (CMAR) delivery method. The project includes the addition of multiple treatment processes, including pre-ozone, biofiltration, advanced oxidation with ozone, GAC adsorption, and UV disinfection.

Broomfield Water Treatment Plant Expansion | City and County of Broomfield

Broomfield, Colorado

Project manager . Worked on the detailed design to expand Broomfield's water treatment plant from 20 to 26 MGD, with hydraulic capacity for up to 32 MGD. The project includes modifications to the existing pre-treatment system, new chemical feed building, three new filters, solids stream modifications and chemical system upgrades. The project is being delivered using construction management at-risk to facilitate early project completion. The process evaluation included hydraulic profile, process flow diagram, equipment selection, sizing and layout, pipe sizing, chemical dosing, yard piping and operational review.

Thornton Water Treatment Plant Replacement Project | City of Thornton

Thornton, Colorado

Project manager. Responsible for daily client interface and managing budget, piloting, process design criteria development and confirmation, detailed design, inter-discipline coordination and construction phase services for this \$100M project. The

EDUCATION

- ▶ MS, Environmental and Civil Engineering
- ▶ BS, Civil Engineering

REGISTRATIONS

- ▶ Envision SP: Professional Engineer (CO, MT, OK, WY, ID)

13 YEARS WITH BURNS & MCDONNELL

13 YEARS OF EXPERIENCE

JASON SCHAEFER, PE, ENV SP

(continued)

project is being executed as a joint venture with Garney Construction, using a design-build delivery method. The water treatment plant will have an initial capacity of 20 MGD using conventional treatment processes, as well as the ability to treat two water sources, Standley Lake and South Platte River, with provisions for a third source. The process design includes traditional pretreatment, ozone, biofiltration, and disinfection.

Northwest Water Treatment Facility Expansion | City of Westminster

Westminster, Colorado

Project engineer. Responsible for the ultrafiltration membrane expansion for the City of Westminster's Northwest Water Treatment Facility. The project included the design and construction services for three new membrane filtration trains totaling 5.6 MGD additional capacity. As the process engineer, responsible for process design, periodic construction inspection, and regulatory approval. The project also included replacement of existing filtration piping, addition of filter-to-waste piping and HVAC improvements.

Plum Creek Water Purification Facility | Town of Castle Rock

Castle Rock, Colorado

Co-project manager and project engineer. Worked on the Town of Castle Rock's new 4.0 MGD Plum Creek Water Purification Facility (PCWPF). This project was completed utilizing a Construction Manager at Risk (CMAR) delivery method. The PCWPF includes aeration, conventional pretreatment with high-rate inclined plate settlers, greensand filtration, MF/UF membranes, chloramine disinfection, clearwell, and high service pumping. The PCWPF's raw water is GWUDI with provisions for future use of a surface water supply. The groundwater source contains high levels of iron and manganese thereby requiring the use of aeration and greensand filtration. Additional facility components include an administration building complete with a laboratory, control center, conference area, and maintenance area; chemical storage and feed; and full site development. Worked closely with operators to develop the design and to provide training.

Lynn R. Morgan Water Treatment Plant Expansion | Town of Erie

Erie, Colorado

Quality reviewer. Worked on the detailed design to expand the Lynn R. Water Treatment Plant from 9.9 MGD to 17 MGD. The upgrade includes a pretreatment with flocculation and lamella plate sedimentation followed by membrane filtration. The project is being executed as a CMAR to expedite the construction and allow for contractor input during design.

Wes Brown Water Treatment Plant Taste & Odor Conceptual Study | City of Thornton

Thornton, Colorado

Project manager and engineer. Worked on the optimization of Thornton's existing facility and an evaluation of potential new treatment options for the reduction of taste and odor causing Geosmin and 2-Methylisoborneol. Conducted a series of jar tests to evaluate the effectiveness of current process in reducing taste and odor compounds. The following chemicals were jar tested for taste and odor optimization: chlorine, three types of powder activated carbon, hydrochloric acid, and five types of coagulants. The potential new technologies evaluated included ozone, UV/hydrogen peroxide, and granular activated carbon.

Lynn R. Morgan Water Treatment Facility Taste & Odor Conceptual Study | Town of Erie

Erie, Colorado

Project manager and engineer. The project included the investigation of taste and odor reduction methods for implementation at the water treatment plant. The technologies evaluated included chlorine, ozone, potassium permanganate, chlorine dioxide, granular activated carbon, powder activated carbon, and UV/hydrogen peroxide. As a result of this study the Town installed a powder activated carbon feed system to reduce taste and odor compounds of their raw water.

KARLA KINSER, PE

Design Manager & Lead Process Engineer



Karla has 26 years of experience in water treatment, serving as a project engineer, lead process engineer, and filtration specialist. She has led the multi-discipline design effort for large water treatment plant expansions and retrofits nationwide. Karla specializes in water treatment and reuse with an extensive focus in membrane processes. Her project experience includes bench-

and pilot testing, process design, detailed design, startup, to troubleshooting operating plants for low-pressure (MF, UF, MBR) and high-pressure (NF, RO) membranes. She has been a global leader for membranes at three firms and worked for two low pressure membrane companies which has afforded her a unique understanding of operations of facilities and negotiation of warranties.

EDUCATION

- ▶ MS, Engineering
- ▶ BS, Civil Engineering
- ▶ BS, Natural Resource Management

REGISTRATIONS

- ▶ Professional Engineer: CO, TX

2 YEARS WITH BURNS & MCDONNELL

26 YEARS OF EXPERIENCE

Thornton WTP Replacement | City of Thornton

Thornton, Colorado

Quality Reviewer. This 20 MGD water treatment plant project is being executed as a design-build in partnership with Garney. The water treatment plant will have an initial capacity of 20 MGD using conventional treatment processes, as well as the ability to treat two water sources, Standley Lake and South Platte River, with provisions for a third source. The process design includes pretreatment with lamella plate settlers, ozone, biofiltration, and disinfection.

Plum Creek Water Purification Facility Advanced Treatment | Town of Castle Rock

Castle Rock, Colorado

Quality Reviewer. Provided quality review for the detailed design for this project, which is adding new treatment processes to the existing Plum Creek facility, also designed by our team. This project is being executed using a construction management at risk (CMAR) delivery method. The project includes the addition of multiple treatment processes, including pre-ozonation, biofiltration, advanced oxidation with ozone, GAC adsorption, and UV disinfection.

Lynn R. Morgan WTP Expansion | Town of Erie

Erie, Colorado

Treatment Specialist. This project included the evaluation and design of a 10 MGD WTP upgrade to increase the plant's treatment capacity to 16 MGD. The design of the plant includes a pretreatment with flocculation and lamella plate sedimentation followed by membrane filtration. The project is being executed as a CMAR to expedite the construction and allow for contractor input during design. Construction of the WTP expansion is 60% complete. The project included a financial analysis and study of installing a micro-turbine for their Northern Water Supply. The Town decided to move forward with the turbine design, which is currently at 60% complete.

Wes Brown WTP Train 8 Modifications | City of Thornton

Thornton, Colorado

Project Engineer. This project includes the conversion of a backwash recovery filtration train to a full process filter equivalent to Trains 1 through 7. Design, specifications, cost estimates, and a CDPHE permit application were prepared for

KARLA KINSER, PE

(continued)

the project. The project involved an increase to a filtrate pump, redesign of stainless-steel piping, reconnecting and modification of air scour piping, and electrical modification associated with these changes. The project utilized a shortened milestone delivery method to meet a fast-track schedule. Demolition and new design drawings were utilized to convey the modification to the contractor.

Council Bluff WTP Expansion* | Council Bluff Water Works

Iowa

Project engineer. This facility treats water from ground water wells near the Missouri River in western Iowa. The original plant was designed to produce 5 MGD, and the building design included space to increase the plant capacity to 10 MGD through the addition of new membrane trains. Due to increases in industrial demands, the capacity was increased in incremental phases to the ultimate 10 MGD capacity. Karla led the procurement and performed a detailed water quality analysis on the pretreatment system to optimize the permanganate addition upstream of the ultrafiltration.

Ridenour WTP Pilot Study and Plant Design* | City of Jacksonville

Jacksonville, Florida

Process Engineer. Responsible for the pilot testing and process design for the 20 MGD new water treatment plant. As part of the pilot test, multiple treatment trains were evaluated to treat a combination of groundwater and surface water. Processes considered included: ozone, air stripping, lime softening, multiple coagulants with flocculation/sedimentation, dual and mono-media filtration. The pilot was operated for approximately 9 months and led directly into preliminary and final design.

Claude Dyal Water Treatment Plant* | City of Cocoa

Cocoa, Florida

Project Engineer. Responsible for the pilot testing and subsequent process design of the new 48 MGD water treatment plant treating Taylor Creek Reservoir augmented by groundwater wells. Led the design of the pilot site, operated the pilot plant, and conducted multiple taste/odor tests for City staff. Processes piloted included lime softening, coagulation, floc/sed, dual media filters, ozone, and ultraviolet disinfection. The final design of the plant consisted of coagulation with lime, floc/sed, dual media filtration, and ozone.

Stevens WTP Plant Optimization* | Corpus Christi Public Utilities

Texas

Technical Leader. This project's objective was to optimize and evaluate multiple conventional processes for the water treatment plant, as well as the impacts on the distribution system water quality. The project involved a year-long pilot study evaluating flocculation, sedimentation, and filtration along with modeling and coupon testing of multiple locations in the distribution system for corrosion control.

North RO Water Treatment Plant (D-B)* | City of Cape Coral

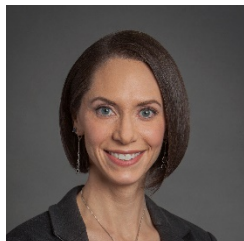
Florida

Project Technical Lead. Design-Build of a 12 MGD, expandable to 24 MGD water treatment plant. Led 20 engineers on a cross-functional team for preliminary and final design. Provided quality control and technical oversight during construction, final installation, and start-up. Project was completed in three years. Design of facility included well-field raw water supply, sand separators, cartridge filters, reverse osmosis, degasification, high service pumps, cleaning and chemical systems, brine injection wells, and an enhanced SCADA system to integrate with the original water treatment plant.

*Denotes experience prior to joining Burns & McDonnell

NIKOLE RACHELSON, PE

Hydraulics



Nikole is a senior process design engineer with experience in design and construction for a variety of water projects. Her design experience includes conventional treatment process design, pump station design, treatment plant hydraulics modeling and design, distribution system modeling, and other miscellaneous process components at water plants. Nikole has extensive experience with both water treatment plant and pump station hydraulics at facilities ranging from 1 to 215 MGD. Her experience includes design and analysis of hydraulics to optimize functionality, determine hydraulic capacity, accommodate complicated retrofits without impacting upstream processes, and maximize efficiency.

Moffat Rebuild Ralston Evaluation* | Denver Water

Denver, Colorado

Process design lead for [assessment of existing treatment plant hydraulics capacity](#). Responsible for creating a model of the existing treatment plant, performing a model calibration, determining the treatment plant's ultimate capacity, and suggesting areas for hydraulic improvements. Significant client interaction required, including multiple design progress presentations, and a hydraulics modeling/calibration learning session with treatment plant operations staff.

Soldier Canyon Filter Plant Conditions Assessment* | Soldier Canyon

Fort Collins, Colorado

Process design lead for [hydraulics analysis](#) of existing 45 MGD water treatment plant. Created a model of the existing infrastructure and utilized model output to identify the cause of plant flow distribution and capacity issues. Analyzed model output to predict the hydraulic behavior of the plant at increasing flows. Significant client interaction required during model development.

Moffat Water Treatment Plant Modifications | Denver Water

Lakewood, Colorado

Hydraulics. Moffat improvements include retrofitting the existing headworks facility to reduce incoming pressure and adjust pH and direct NTP supply to clearwells for storage. Moffat's NTP-related improvements are designed to facilitate construction during scheduled operational outages to minimize the impact on the distribution system. The project included a new sleeve valve, carbon dioxide dosing systems, 1,500 feet of 48-inch yard piping and structural modifications. Nikole performed [detailed hydraulic analyses to model the finished water piping performance during a range of operating conditions](#).

CSWTP Improvements* | Colorado City Metropolitan District

Colorado City, Colorado

Process design lead responsible for [hydraulics modeling and design](#), as part of detailed design for upgrades to an existing water treatment plant, including raw water pump station, finished water pump station, packaged membranes, RO and clear well disinfection.

North Complex Electrical, Instrumentation and Controls Upgrade | Denver Water

Denver, Colorado

Process engineer for an engineer-procure-construct (EPC) scope of work to interconnect five existing raw water reservoirs and the South Platte River at the DRWSP North Complex. The project includes a 32 MGD pump station preliminary design,

EDUCATION

- ▶ MS, Civil and Environmental Engineering
- ▶ BS, Environmental Engineering

REGISTRATIONS

- ▶ Licensed Professional Engineer (CO, AZ)
- ▶ Certified Construction Documents Technologist (CDT)

4 YEARS WITH BURNS & MCDONNELL

14 YEARS OF EXPERIENCE

NIKOLE RACHELSON, PE

(continued)

an extensive hydraulic analysis to develop and confirm operational scenarios and control strategies for the North Complex system, and various electrical/instrumentation/mechanical upgrades to existing infrastructure. [Completed the pump station preliminary design and the hydraulic evaluation.](#)

Price Park Improvements | City of Longmont

Longmont, Colorado

Project manager. The Price Park Improvements Project carries the 2016 study recommendations (also done by BMcD) into design. Phase 1 includes a tank sizing and operation study, which compares the 5 MG tank and pump station recommendations from the study to a larger eight (8) MG tank and upgraded pump station. [Hydraulic modeling](#) will determine the operational requirements of the new pump station. The two design alternatives will be evaluated from a design, constructability, and cost perspective to determine the design direction moving forward. Once the storage and pump station requirements are determined, Phase 1 will also include preliminary design. Phase 2 of the project will include detailed design based on the design decisions made in Phase 1.

Eaton Pump Station | City of Westminster

Thornton, Colorado

Project manager for a design-build pump station and waterline project. Project work included relocating a 5.5 MGD pump station, installing new waterline piping to reconnect pump station suction and discharge to the distribution system, and installing new waterline piping to feed the City's upcoming downtown redevelopment. The project also included a [hydraulic analysis of the pump station and surrounding infrastructure](#) to determine its capabilities during various normal and emergency operational scenarios.

Hydroelectric Project, Lynn R. Morgan WTP | Town of Erie

Erie, Colorado

Hydraulics and QC for the feasibility study, detailed design, and construction administration of an 80 kW micro-turbine addition at the existing 17 MGD Lynn R. Morgan Water Treatment Facility. Erie has received raw water from Northern Colorado Water's SWSP pipeline for nearly 20 years. The potential energy in this pipeline was dissipated through an existing buried sleeve valve vault. The addition of a hydroelectric generator proved feasibility after a study compared applicable turbine technologies, potential installation locations and several financial scenarios.

Cooley East Pump Station | City of Thornton

Thornton, Colorado

Lead process engineer for the pump station portion of the project, which includes a 9 MGD raw water pump station, approximately 3 miles of 36-inch raw waterline, 3 miles of 42-inch potable waterline, transmission, 1 mile of 8-inch potable and irrigation waterlines, 770 feet of 15-inch sewer relocation and 770 feet of 36-inch storm drain.

Pump Station Improvements and Irrigation System Master Plan* | Town of Superior

Superior, Colorado

Project manager and process design lead for the [hydraulic evaluation](#) of the Superior irrigation system, design of pump station upgrades, and construction following a design/build format. [Evaluation included hydraulic modeling and pump performance assessment, followed by recommended pump station upgrades to meet current and future capacity demands.](#) Pump station improvements included design of new high duty and booster pump stations.

**Denotes experience prior to joining Burns & McDonnell*

EMILY HUTH, PE

Process Engineer: Taste & Odor



Emily is a process design engineer with six years of experience focused on water treatment facility projects. Her experience includes piloting of filter loading rates, pretreatment, and filtration; and process designs that address taste and odor concerns in variable water sources. Emily's role on projects frequently includes inter-discipline design coordination, direct interface with the

client, and collaboration with the contractor. She has recent design-build experience on the Thornton WTP Replacement.

EDUCATION

- ▶ MS, Environmental Engineering,
- ▶ BS, Civil Engineering

REGISTRATIONS

- ▶ Professional Engineer (WY)

5 YEARS WITH BURNS & MCDONNELL

6 YEARS OF EXPERIENCE

Thornton Water Treatment Plant Replacement Project | City of Thornton

Thornton, Colorado

Process design lead. Responsible for discipline coordination and assisting in the design of chemical feed systems, ozone system, pretreatment, biological filtration, and process piping. In addition, assisted with data interpretation and experimental planning of a six-month pilot. The project is being executed as a design-build in partnership with Garney. The water treatment plant will have an initial capacity of 20 MGD using conventional treatment processes, as well as the ability to treat two water sources, Standley Lake and South Platte River, with provisions for a third source. The process design includes traditional pretreatment, ozone, biofiltration, and disinfection.

Dodd Water Treatment Plant Upgrade | Left Hand Water District

Niwot, Colorado

Process engineer. Burns & McDonnell worked as part of a design-build team with Garney Construction to upgrade to the Dodd Water Treatment Plant (DWTP). Designed conventional pre-treatment with a mechanical rapid mixer, horizontal paddle flocculators, high-rate inclined plate settlers, MF/UF membranes, clearwell and high service pumping to increase capacity from an 8 MGD to 10 MGD with the capability to expand to 16 MGD. Additional facility components included administration spaces such as a laboratory, control center; chemical storage and feed; and full site development for solids holding ponds, storm drainage, and raw water pipes. Construction phase service responsibilities included managing and reviewing submittals and RFIs, preparing operator Training materials, and assisting in the design of additional scope items. Start-up responsibilities included performing jar tests and generation of the start-up plan.

Pressure Zone 3 Expansion: Gregory Hill Pump Station and Tanks | City of Westminster

Westminster, Colorado

Project engineer. Responsible for the design of the Gregory Hill Pump Station and two 3 MG above ground storage tanks. The facility is part of a large pressure zone expansion project that will increase water storage capacity and water pressure within Zone 3 of the City of Westminster's water distribution system. The pump station includes five new VFD controlled pumps to achieve flowrates from 0.5 MGD to 13.8 MGD (with the capability of future expansion to 15.6 MGD) that will allow the City to meet the system's high flow demands and desired low flow outputs. The pump station building includes a separate electrical room, restroom, and the two storage tanks which include hydrodynamic mixing systems. Process design

EMILY HUTH, PE

(continued)

responsibilities included assistance in the design pump sizing, all pump station, storage tank, and yard process piping and accessories, general pump station and tank sizing, and preparation of drawings and specifications.

Wes Brown Water Treatment Plant Train 8 Modifications | City of Thornton

Thornton, Colorado

Process engineer who designed modifications to an existing membrane train at the Wes Brown Water Treatment Plant for the City of Thornton. The design converted Train 8 from a secondary recovery train to a forward flow operating train to match the other seven trains in the facility. Design responsibilities included discipline coordination, design of process components (new pump with variable frequency drive, stainless steel pump and blower piping modifications, instrumentation), and preparation of drawings and specifications.

Alternative Membrane Analysis and Pilot | City of Thornton

Thornton, Colorado

Process engineer who assisted with the evaluation of alternative membrane manufacturers for the Wes Brown Water Treatment Plant. An evaluation of alternative membrane manufacturers was performed to allow competitive bidding and replacement in the future was performed. Our team performed the evaluation, recommended an alternate manufacturer, developed technical specifications and assisted with procurement of membranes from the alternative manufacturer. A full-scale pilot evaluating the new membrane manufacturer with the existing is being performed.

East Gravel Lakes Pump Station Chemical Upgrades | City of Thornton

Thornton, Colorado

Assistant project manager who designed a sodium permanganate feed system at the East Gravel Lakes #4 Pump Station for the City of Thornton. The existing dry-feed potassium permanganate system was removed and converted to a liquid-feed sodium permanganate system including two chemical storage tanks, chemical metering pumps and accessories, new chemical feed piping and fill station, and an emergency eyewash with water heater. Construction phase service responsibilities included managing and reviewing submittals and RFIs.

Spurgeon WTP Chlorine Conversion | Left Hand Water District

Niwot, Colorado

Process engineer who designed a safe, cost effective, bulk sodium hypochlorite system to replace the existing chlorine gas system at the Spurgeon Water Treatment Plant. Our design utilized the District's existing chlorine gas building and piping, which reduced project costs and construction duration. The team designed two bulk sodium hypochlorite FRP tanks, which were installed in a newly constructed containment area within the existing chlorine gas room. Design responsibilities included preparing the Preliminary Engineering Report. Construction phase service responsibilities included managing and reviewing submittals and RFIs.

Wes Brown Water Treatment Plant High Service Pump Station Actuator Replacement | City of Thornton

Thornton, Colorado

Assistant project manager for replacement of valve actuators in the high service pump station in the Wes Brown Water Treatment Plant. The existing hydraulic valve actuators were removed and replaced with electric actuators powered by a separate uninterruptable power supply cabinet. Construction phase responsibilities include managing and reviewing submittals and RFIs.

MEAGAN LUNDGREN, EI

Process Engineer



Meagan is an assistant environmental engineer with experience in drinking water and wastewater unit operations design and analysis. Her areas of study have included water quality analysis and testing, field assessment and data collection, environmental chemistry, and contaminant fate and transport. Her role on projects includes assisting in the design of water and wastewater treatment and conveyance systems for municipal

applications. Her role includes system design, specification development, creating cost opinions, submittal review and interdisciplinary coordination.

EDUCATION

- ▶ BS, Environmental Engineering

REGISTRATIONS

- ▶ Engineer in Training: CO

1.5 YEARS WITH BURNS & MCDONNELL

1.5 YEARS OF EXPERIENCE

Taste & Odor Project | Town of Johnstown

Johnstown, Colorado

Process engineer for study to evaluate taste and odor control performance of the town's existing powdered activated carbon system at the Lone Tree Reservoir. Conducted jar testing to quantify Geosmin and MIB removals. Compared the PAC system performance with the strategies at other nearby water systems. Developed recommendations for multi-phase approach to taste and odor control at Lonetree Reservoir, Town Lake and at the WTP. Support the town with implementing short-term granular activated carbon system in preparation for summer 2021.

Plum Creek WPF Advanced Treatment Project | Town of Castle Rock, Colorado

Castle Rock, Colorado

Assistant process engineer. Worked on construction phase services on the renovation of the Plum Creek Water Purification Facility (WPF) Advanced Treatment Project. The project includes the addition of multiple treatment processes, including pre-ozonation, biofiltration, advanced oxidation with ozone, GAC adsorption, and UV disinfection for use in treatment of direct potable reuse. The facility is currently rated for 6 MGD but has been designed to expand to 12 MGD. The responsibilities during the construction phase of the project include interdisciplinary coordination and submittal review.

Lynn R. Morgan Water Treatment Plant Expansion | Town of Erie, Colorado

Erie, Colorado

Assistant process engineer. Worked on the evaluation of the current performance of the Lynn R. Morgan Water Treatment Facility as well as the evaluation of the facility's source waters. Responsibilities included reviewing performance and operations data to make recommendations on increased efficiency and performance at the plant.

Thornton Water Treatment Plant Replacement [Design-Build] | City of Thornton

Thornton, Colorado

Assistant process engineer for the replacement of the Thornton Treatment Plant (TTP). The project includes the design and construction of a new 20 MGD treatment plant including traditional pretreatment, ozone, biofiltration, and disinfection. Her responsibilities during the construction phase of this project included submittal review and compilation of a comprehensive operations and maintenance manual for the entire plant.

Wes Brown Water Treatment Plant Membrane Evaluation | City of Thornton

Thornton, Colorado

Assistant process engineer for the evaluation of the membrane system currently in place at the Wes Brown Treatment Plant. Responsibilities included reviewing performance and operations data to make recommendations on increased efficiency and performance at the plant.

KATE HENSKE, PE

Pipeline



Kate is a senior pipeline engineer with the demonstrated ability to not only ask the right questions, but to listen to stakeholders in order to communicate more clearly and concisely, which results in more collaborative, transparent, and successful projects – from start to finish. She has successfully managed a variety of water and wastewater pipeline projects and tasks throughout

the Rocky Mountain Region. Kate's water system experience includes design of major water distribution facilities including pipelines from 6 through 54-inches in diameter, pressure reducing valves, control valves, air release valves and master water meters; design of booster and well pump stations; site grading and piping for water storage tanks; and master planning, water alignments, and facility studies for residential and commercial areas including storage tank sizing.

EDUCATION

- ▶ BS, Civil and Environmental Engineering

REGISTRATIONS

- ▶ Professional Engineer (CO, WY, CA, TX)

15 YEARS WITH BURNS & MCDONNELL

32 YEARS OF EXPERIENCE

Pressure Zone 3 Expansion: 88th and 104th Waterline Replacements | City of Westminster

Westminster, Colorado

Pipeline lead. Worked on the conversion of a section of Pressure Zone 1 to Pressure Zone 3 in the vicinity of the Westminster Mall which is being revitalized into the downtown area for the City of Westminster. This work includes the design of multiple waterlines through the Westminster system including 1.5 miles of 16-inch waterline, 1.3 miles of 30-inch waterline, 1.2 miles of 20-inch waterline, and 0.3 miles of fiber optics cable. The waterlines are being replaced due to the higher pressures when the area converts to Pressure Zone 3. The controls are being moved from a tank that is scheduled to be demolished to an existing tank between which the fiber is required. The waterlines and fiber will be placed within existing ROW, through private property and under US 36. Coordination will be required with the City of Westminster, Adams County, Jefferson County and WYDOT. The work included planning, design, alignment selection and evaluation, public relations, material evaluations, and permitting.

Airport Road to Baron Court Waterline | Town of Erie

Erie, Colorado

Project manager. Worked on approximately 3,000 linear feet of 16 and 12-inch waterline. This waterline replaces the existing aging waterline and provides replacement prior to the streets being resurfaced as a result of a sanitary sewer project along the same alignment. The waterline will be placed within an existing casing, within existing ROW and through an acquired easement. There will be multiple surface reactivations, new fire hydrant installation and existing fire hydrant connections.

Union Boulevard Water Main Replacement Project | Colorado Springs Utilities

Colorado Springs, Colorado

Project manager. Worked on the design of approximately 8,300 linear feet of 8, 12 and 24-inch waterline in Union Boulevard from Academy Boulevard to Deliverance Drive, fire hydrant replacements, lateral replacement and service reconnections as part of CSU's Water Main Replacement Ahead of Paving Program in conjunction with the City of Colorado Springs' 2C pavement replacement initiative. Union Boulevard is a very busy road which is also congested with many utilities. Design permitting was required from the City of Colorado Springs for traffic control and potholing which took place at night. In addition to the design plans; potholing and erosion control plans were developed.

KATE HENSKE, PE

(continued)

Colorado Springs Utilities | Mesa Road Waterline

Colorado Springs, Colorado

Project manager. Managed the design of the replacement of 4,900 linear feet of 18-inch cast iron waterline with 12-inch PVC waterline, fire hydrant replacements, lateral connections, and service connections as part of CSU's Water Main Replacement Ahead of Paving Program in conjunction with the City of Colorado Springs' 2C pavement replacement initiative. This is a quick paced project and construction will be completed through the Construction Manager / General Contractor (CMGC) process for which coordination and assistance with Colorado Springs Utilities and the General Contractor will be required to establishing a guaranteed maximum price. The project also included developing a paired comparison analysis for connection options which include, adding to pressure reducing valves in the existing system, or connecting into the existing 42-inch PCCP main.

Raw Water Pump Station and Pipeline | Town of Erie

Erie, Colorado

Project engineer. Worked on over 7.5 miles of 30-inch water transmission piping in Boulder County from the Boulder Creek Supply Canal to Erie Lake. The waterline is placed in street right-of-way and there are numerous bores under the roads. The project also has a crossing with the Union Pacific Railroad. The tracks are not being used so it was agreed that the tracks could be removed and replaced during water line installation. Coordination was required with Boulder County, City of Boulder Open Space, CDOT, numerous ditch companies, and Union Pacific Railroad. Alignment was dictated by the Boulder County 1041 process.

WISE Local Infrastructure Project | Town of Castle Rock

Castle Rock, Colorado

Pipeline lead. Worked on over 5.3 miles of 30 and 36-inch water transmission piping in the Town of Castle Rock and Douglas County. The WISE Local Infrastructure delivers WISE water from Parker's Reuter Hess Reservoir to the Town of Castle Rock's water distribution system. The 5.3-mile pipeline provides a sustainable long-term water supply of the Town and other WISE providers (Dominion Water & Sanitation District). The project alignment is mostly within an existing Xcel energy power line easement, through private property and within Town of Castle Rock property. Special precautions were incorporated into the contract documents due to construction taking place near a high voltage power line. The waterline was designed for steel, ductile iron and PVC to allow for competition during the bidding phase. Coordination was required with the Town of Castle Rock, Xcel Energy, Douglas County, and CDPHE.

Broomfield Water Treatment Plant Expansion | City and County of Broomfield

Broomfield, Colorado

Project manager. Worked on design and permitting for approximately 1,970 linear feet of 24-inch potable waterline within the City and County of Broomfield. This project provided domestic waterline looping from the treatment plant to an existing 24-inch waterline. The project also included design for a 36-inch bored steel casing under the Farmer Irrigation Company which required extensive permitting.

Cooley East Pump Station & Pipeline | City of Thornton

Thornton, Colorado

Project manager for the 5 MGD firm capacity pump station and an 18-inch water conveyance pipeline, approximately 2,000 linear feet in length, with discharge structures at the Cooley West Reservoir and the South Platte River. There is a gravity discharge which consists of an overflow structure in the Cooley East Reservoir, 3 -24-inch discharge lines and a discharge structure at the South Platte River.

NICK TESSITORE, PE, LEED AP BD+C, ENV SP

Civil Engineer



With almost two decades of civil engineering experience, Nick specializes in site development, pavement design, drainage and stormwater design, project management, master planning, and construction inspection. He excels in preparing development site plans, utility routing, drainage development, and working with municipalities for zoning

development and all permitting.

Dodd Water Treatment Plant Upgrade | Left Hand Water District Niwot, Colorado

Lead civil engineer for the design and construction of the upgrades to the water treatment plant. The project provided upgrades to increase the WTP to a 10 MGD capacity, so the facility can reduce overall operations and maintenance requirements by improving treatment processes. The design consisted of access roads, fencing, grading, drainage, soil evaluation, permitting, erosion control measures, and site mobility. Major earthwork design involved raising and expanding the existing backwash ponds to an elevation above the current groundwater table and installing a geosynthetic clay liner. Other design activities include earthwork, utility coordination, survey, building and foundation placement, and drainage design.

Plum Creek Water Advanced Treatment Project | Town of Castle Rock Castle Rock, Colorado

Lead Civil Engineer for the design and construction services for the addition of advanced treatment processes to the existing Plum Creek Water Purification Facility (PCWPF). This project utilized the design/contract-build contracting method to select a general contractor to participate in a collaborative project delivery environment. Design activities required full site development including raw water piping, finished water, electric, natural gas, fiber optic communications, site access, and storm water mitigation. Other design consisted of grading, drainage, pavement design, soil evaluation, erosion control measures, yard piping, utility coordination, survey, and foundation placement.

Water Treatment Plant Replacement | City of Thornton Thornton, Colorado

Lead Civil Engineer for the design and construction for the new \$90M design-build water treatment facility project. The treatment plant will have an initial capacity of 20 MGD using conventional treatment processes, as well as the ability to treat two water sources, Stanley Lake and South Platte River. The process design includes raw water ozone, rapid mix, flocculation, sedimentation and biologically active filtration. Design activities required full site development including raw water piping, finished water, electric, natural gas, fiber optic communications, site access, yard piping, and storm water mitigation. Other design consisted of grading, drainage, pavement design, soil evaluation, erosion control measures, yard piping, utility coordination, survey, traffic maneuvering, security fencing, landscaping, and foundation placement.

Plum Creek Water Purification Facility | Town of Castle Rock Castle Rock, Colorado

Civil Engineer for the design and construction services for the new 4-MGD Plum Creek Water Purification Facility (PCWPF). This project utilized the design/contract-build contracting method to select a general contractor to participate in a

EDUCATION

- ▶ BS, Civil Engineering

REGISTRATIONS

- ▶ Professional Engineer (CO, KY, WY, UT, NM, KS, NV, OR, WA, MT, OK, PA, AL, TX, AZ, MO)
- ▶ LEED AP BD+C
- ▶ ENV SP

13 YEARS WITH BURNS & MCDONNELL

19 YEARS OF EXPERIENCE

NICK TESSITORE, PE, LEED AP BD+C, ENV SP

(continued)

collaborative project delivery environment. Design activities required full site development including raw water piping, finished water, electric, natural gas, fiber optic communications, site access, and storm water mitigation. Other design consisted of grading, drainage, pavement design, soil evaluation, erosion control measures, yard piping, utility coordination, survey, and foundation placement.

North Water Reclamation Facility Capacity Improvements | Town of Erie

Erie, Colorado

Lead Civil Engineer for the improvements to the NWRF plant to include a solids load out system truck containment, a new sulfuric acid tank building, and expansion of the splitter box. Overall design consisted of pavement, grading, drainage, soil evaluation, permitting, erosion control measures, and site mobility. Other design activities include earthwork, utility coordination, building and foundation placement, and storm drainage.

Stonegate Wastewater Facility Upgrades | Stonegate Village Metropolitan District

Parker, Colorado

Project Civil Engineer for the design of the upgrades to the wastewater treatment plant. The project provided upgrades to handle a 6.5 MGD capacity, so the facility can reliably meet the current permit limits and reduce overall operations and maintenance requirements by improving treatment processes. The design consisted of new access roads, fencing, grading, drainage, soil evaluation, permitting, erosion control measures, and site mobility. Other design activities include earthwork, utility coordination, survey, building and foundation placement, and drainage design.

Jackson Springs Water Treatment Plant | City of Rapid City

Rapid City, South Dakota

Project Civil Engineer for the construction phase of a new membrane filtration water treatment plant. The project provided a new treatment facility with 8 MGD capacity, a new surface water intake from Rapid Creek, a new raw water pumping station located outside the floodway, rapid mix, flocculation, sedimentation, membrane filtration, clearwell, high service station, and raw and finished water piping. Responsibilities during construction included submittal evaluation, quantity tracking, field coordination, and overall safety operations.

Wastewater Treatment Plant | Boxelder Sanitation District

Fort Collins, Colorado

Lead Civil Engineer for the design and construction services for the new 3-MGD mechanical wastewater treatment plant. This project utilized the design/contract-build contracting method to select a general contractor to participate in a collaborative project delivery environment. Design activities required full site development including yard piping, electric, natural gas, fiber optic communications, site access, and storm water mitigation. Other design consisted of grading, drainage, pavement design, soil evaluation, erosion control measures, yard piping, utility coordination, survey, and foundation placement.

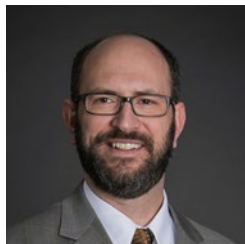
Research and Roxbury Pump Station Rechlorination Project | Colorado Springs Utilities

Colorado Springs, Colorado

Lead civil engineer. Worked on the design and retrofit of two new pump stations, one is located at the Research facility and the other is located at the Roxbury location in Colorado Springs, Colorado. Design tasks included the overall site design, grading, chemical truck access, structure excavation and backfill, stormwater design, and underground utility routing. Other design includes soil evaluation, erosion control measures, utility coordination, survey, and building and foundation placement.

MICHAEL JOHNSON, PE

Lead Electrical / I&C Engineer



Michael is a senior electrical and controls engineer. He has worked as a field engineer assisting in startup commissioning and system integration of control systems for industrial facilities and as a consulting engineer to develop conceptual designs, detailed designs, and specifications for electrical & control systems for municipal facilities.

EDUCATION

- ▶ BS, Electrical Engineering

REGISTRATIONS

- ▶ Professional Engineer (CO, KS, SD, WY)

20 YEARS WITH BURNS & MCDONNELL

20 YEARS OF EXPERIENCE

Maple Grove WTP Solids Handling Project | The Consolidated Mutual Water Company

Lakewood, Colorado

Lead electrical/I&C engineer responsible for the conceptual design, specifications and detailed design of the 480 VAC 3-phase electrical system including panels and cables for the lighting, mixing tanks, feed pumps, polymer skids and dewatering press skids power distribution. The overall scope of this project is solids handling improvements to an existing water treatment plant based on recommendations our team made during the previous solids study. The solids study included a detailed solids production evaluation, bench scale dewatering testing, pilot testing, and development of design alternatives for converting the existing system from drying beds to mechanical dewatering. Our team designed the plant improvements based on this study and is currently constructing the improvements.

Ft Lupton WWTP Upgrades | City of Fort Lupton, Colorado

Fort Lupton, Colorado

Electrical/I&C engineer. Provided detailed electrical design documents and construction EPC specifications and construction sequence planning for the upgrade of a single train wastewater facility to add an additional train and include future planning for a third train.

Pierre Wastewater Treatment Plant Upgrades | City of Pierre

Pierre, South Dakota

Electrical/I&C engineer. Coordinated multiple engineers for the design of Construction Contract documents and specifications for the electrical control system for a wastewater facility. Coordinated the new design to integrate with the existing plant infrastructure.

Wastewater Treatment Facility Expansion | City of Green River

Green River, Wyoming

Electrical/I&C engineer. Coordinated multiple engineers for the design of Construction Contract documents and specifications for the electrical control system for a wastewater facility. Reviewed the department standard specifications for suitability for the type of contract., Reviewed the department standard specifications for suitability for the type of contract.

Actuator Replacement at Wes Brown WTP | City of Thornton

Thornton, Colorado

Electrical/I&C engineer. Provided work packages for the replacement of hydraulic actuators to a construction partner. Provided minimal design with sufficient instruction to contractor for critical components to minimize engineering expenses.

MICHAEL JOHNSON, PE

(continued)

Plum Creek Wastewater Treatment Facility Expansion | Plum Creek Water Reclamation Authority

Castle Rock, Colorado

Electrical/I&C engineer. Provided project support to the construction contractor for a wastewater treatment facility designed by Burns and McDonnell Water Department. Reviewed and revised the project cable schedule and electrical drawings, responded to Contractor RFI's, worked with Utility and Client to resolve compliance items. While at the same time learning Water Wastewater design criteria and design requirements.

Dodd WTP Hydroelectric Project | Left Hand Water District

Niwot, Colorado

Electrical/I&C engineer. Revised the electrical design of a hydro turbine located at the base the front range, to meet utility company requirements and performed compliance submittal reviews.

First Creek Lift Station Improvements | City of Aurora

Denver, Colorado

Electrical/I&C engineer. The First Creek Lift Station will be abandoned once a new interceptor to a new Metro North WWTP is completed. Until that time, the lift station will pump both the Second and First Creek flows to the existing Aurora WWTP. This project increases the capacity of the FCLS to 3.0 MGD to handle the flows from both service areas. This project retrofitted the existing submersible lift station with large pumps, updated controls, new flow meter, and a bypass vault connection. The project also added a new 50' antenna mast and SCADA monitoring that communicates to the City's main monitoring system. Electrical detailed design specifications and drawings, Contract submittal reviews and construction support, answered RFI's, Attended Client Workshop & Factory Acceptance Testing. We were able to create an updated standard set of Burns and McDonnell contract drawings to meet City of Auroras preferred methods and procedures. We were able to incorporate SCADA Design manual and to meet very specific product interface and product testing requirements.

Skyline Pump Station Interconnect | City of Longmont

Longmont, Colorado

Electrical/I&C engineer. In order to meet emergency indoor water demands, the City of Longmont accepts intermittent water supplies from surrounding districts via interconnects in their system. In order to move this emergency interconnect water throughout their water distribution system, Burns & McDonnell designed an emergency interconnect in an existing pump station consisting of an end suction pump, piping, and associated updates to electrical and HVAC. The Burns & McDonnell team has also assisted the City with construction observations and inspections. Provided construction work package for the City to self perform the work. Addition of a zone to zone variable frequency drive transfer pump. Provided minimal design requirement, with sufficient critical design components.

Rock Creek Lift Station Odor Control Improvements | City and County of Broomfield, Colorado

Englewood, Colorado

Electrical/I&C engineer. Provide a Construction Contract specifications and detailed design drawings to replace the pump station pumps, MCC and to add odor control equipment. Specifically outlined a Construction sequence for the pump station to stay online while performing the work.

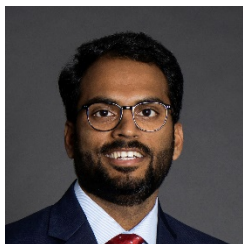
Cooley East Pump Station | City of Thornton, Colorado

Thornton, Colorado

Electrical/I&C engineer. Revised a pump station design, provided control narrative, specifications and drawing revisions. Answered Construction RFIs, and participated in factory acceptance test, site visits and walkdown.

VAMSI PATWARI, PE

Electrical / I&C Engineer



Vamsi is an electrical engineer with six years of experience in electrical design, analysis, and project coordination. He has specialized experience in industrial power and control systems.

Zenon PLC Upgrades at Wes Brown WTP | City of Thornton

Thornton, Colorado

Electrical engineer that provided engineering support for the replacement of one of the City's major PLC systems. This project is a conversion of the Zenon PLC at the Wes Brown Water Treatment Plant, including migration of software packages. Developed a design package for the PLC conversion, and coordinated between Suez, system integrator and City. Burns & McDonnell developed record documents after installation and startup of the upgraded PLC was completed.

Wastewater Treatment Plant Inspection and Engineering | City of Longmont, Colorado

Longmont, Colorado

Electrical engineer. Consulted with the Longmont WWTP regarding service water pressure, modifications to the biological treatment system, and pump design/replacement. Vamsi worked on a study to evaluate the existing emergency generators at both the Nelson Flanders Water Treatment Plant and the Longmont Wastewater Treatment Plant. The evaluation includes increasing the existing generator run times, new ATS/MTS, sectionalizer, and fuel storage. The study involved developing options for emergency power, evaluating each with monetary and non-monetary criteria, recommendations, and developing the design.

Green River Wastewater Treatment Plant Expansion | City of Green River

Green River, Wyoming

Electrical engineer and instrumentation/controls for expansion to the existing Green River Wastewater Treatment Plant. The project includes the replacement of the existing lagoon system with a 1.5 MGD BNR mechanical plant. The new facility includes a complete treatment process with headworks/grit, BNR secondary process, UV disinfection and aerobic digestion.

Plum Creek Water Reclamation Facility Expansion | Plum Creek Water Reclamation Authority

Castle Rock, Colorado

Electrical engineer that performed the evaluation and design of the closed transition emergency power system. This project includes the capacity expansion of the Plum Creek WWTP from 6.4 to 9.5 MGD. The primary purpose of the project is the capacity expansion and replacement of the solids stabilization system with an Autothermal Thermophilic Aerobic Digestion process (ATAD) process to create Class A biosolids.

Dodd WTP Hydroelectric Project | Left Hand Water District

Niwot, Colorado

Electrical engineer. Vamsi worked on a construction phase for a new Hydroelectric Facility. Reviewed shop drawings and design for the construction phase of this project. The overall scope of work included detailed design of a 200 kW micro-turbine at the 10 MGD Dodd Water Treatment Plant. The Dodd WTP receives raw water from Northern Colorado Water Conservation District's Boulder Feeder Canal as well as the new SWSPH. The Dodd micro turbine will take an average of 9

EDUCATION

- ▶ MS, Electrical Engineering (Industrial Electrical & Control Systems)
- ▶ Bachelor of Technology, Electrical and Electronics Engineering

REGISTRATIONS

- ▶ Professional Engineer (CO, TX)

1 YEAR WITH BURNS & MCDONNELL

6 YEARS OF EXPERIENCE

VAMSI PATWARI, PE

(continued)

cubic feet per second (cfs) of raw water from SWSPII at a pressure range between 85 and 195 psi. The financial analysis provided by BMCD indicates a viable payback for the micro turbine project. An alternative delivery model was selected to reduce the overall project schedule by pre-purchasing long lead time equipment at 30% design.

Vac Pump Improvements at Wes Brown WTP | City of Thornton

Thornton, Colorado

Electrical engineer for the addition of vacuum pumps to serve the membranes in the Wes Brown Water Treatment Plant. Two 15 horsepower vacuum pumps will be installed to maintain water surface levels in the air/water separation vessels and maintain prime on the membrane permeate pumps. Vacuum pumps will be provided with integral variable frequency drives and controls.

South Water Reclamation Plant* | Albuquerque Bernalillo County Water Authority

Albuquerque, New Mexico

Electrical lead engineer for electrical medium voltage loop A&B design project. Reconfigured the existing two medium voltage loops throughout the facility to improve safety, reliability, and ease of maintenance by eliminating taps to connect downstream transformers. The two medium voltage loops are connected to existing 15-kV metal enclosed load interrupter switchgears (main-tier-main) via new 15-kV pad mount switchgears (S&C PME style) at various points throughout the facility. The downstream transformers are reconnected to be fed from individual fused switches by retrofitting the existing 15-kV metal enclosed load interrupter switchgears. All the medium voltage switches are configured with kirk keys to prevent from both loops being paralleled. Demolition of a 50 year old existing outdoor 15-kV service entrance switchgear and replacing with a 15-kV arc resistant service entrance switchgear in a new building along with providing medium voltage breaker controls, coordinating interconnection with the power utility for parallel operation and provide recommended relay settings in accordance with IEEE 1547. The design also included describing detailed construction sequence to minimize the outages through the facility while transferring the power to the new configuration.

West Gravel Lakes Pump Station Electrical Upgrade* | City of Thornton

Thornton, Colorado

Electrical engineer for the replacement of the electrical distribution equipment at the West Gravel Lakes pump station. The existing electrical equipment (indoor and outdoor MCC, disconnect switch and ATS, HP-3 panelboard in KMNO4 building) was identified to be replaced based on the previous arc flash study analysis report. Along with replacing this equipment, the design focused on simplifying the distribution scheme by adding a service entrance switchboard (SWBD-WGL). This also helped in reducing the arc flash energy levels at the MCCs. The design also focused on cost effective solutions in reconnecting HP-1 (Panelboard in PAC building) and HP-3 (Panelboard in KMNO4 building) to generator backup source (MCC-WGL-B).

Zone 3/4 Pump Station MCC and VFD Upgrades | City of Thornton

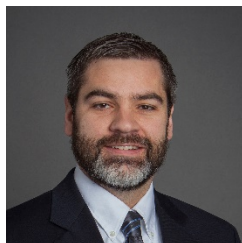
Thornton, Colorado

Project manager and electrical engineer that developed the design and specifications for the replacement of two motor control center (MCC) switchboards and the installation of two new variable frequency drives (VFDs) at two existing pumps in the Zone 3/4 Pump Station. The MCCs to be replaced include the existing north Square D MCC and the existing south Cutler Hammer MCC. New VFDs will be installed on pumps 3-2 and 3-3 at the pump station, which do not currently have VFDs.

*denotes experience prior to joining Burns & McDonnell

JOHN KIENHOLZ, PE

Structural Engineer



John is a senior structural engineer with more than 17 years of structural design experience for municipal, commercial, military, power generation, power distribution and industrial clients. His primary responsibilities include the design of steel, concrete, and masonry structures and substructures.

EDUCATION

- ▶ BS, Civil Engineering
- ▶ MS, Civil Engineering

REGISTRATIONS

- ▶ Professional Engineer: CO

14 YEARS WITH BURNS & MCDONNELL

17 YEARS OF EXPERIENCE

Advanced Treatment at Plum Creek PWF | Town of Castle Rock

Castle Rock, Colorado

Lead structural engineer for housing equipment responsible for advanced drinking water treatment equipment, capable of treating ground water, surface water, and wastewater treatment plant effluent for drinking water. Largest element consists of a masonry building with precast roof elements crating a 30-ft interior clear height for housing large granular activated carbon tanks. Project consists of a cast-in-place concrete buried vault and a partially buried solids storage tank.

Lynn R. Morgan Water Treatment Plant Expansion | Town of Erie, Colorado

Erie, Colorado

Quality review. Reviewed the structural design for the expansion of a 10 MGD WTP to increase the plant capacity to 17 MGD. The upgrade includes a pretreatment with flocculation and lamella plate sedimentation followed by membrane filtration and a high service pump station expansion. The project is being executed as a CMAR to expedite the construction and allow for contractor input during design. Construction was completed in July 2020.

Plum Creek Water Purification Facility | Town of Castle Rock

Castle Rock, Colorado

Structural engineer for new treatment facility housing pretreatment, membrane filtration and chemical storage processes and office space. Plum Creek is a complex building comprised of several wings, four different roof elevations and five structural systems (concrete, masonry, precast, metal joists and wood timbers.)

Jackson Springs Water Treatment Plant | City of Rapid City

Rapid City, South Dakota

Structural engineer that designed masonry superstructure and precast concrete roof for 113 feet by 226 feet treatment plant. Roof levels varied with bearing heights up to 25 feet and parapets up to 8 feet tall.

Wastewater Treatment Plant Expansion | Boxelder Sanitation District

Fort Collins, Colorado

Structural engineer that designed the concrete grit basin, anaerobic selector basin, oxidation ditches as well as the masonry building housing several pumps.

JOHN KIENHOLZ, PE

(continued)

Wastewater Treatment Plant Expansion | City of Green River

Green River, Wyoming

Lead structural engineer responsible for developing structural drawings and specifications for a new wastewater treatment facility. Structures include administration building, headworks/process building housing, grit separator structure, anaerobic selector basin, oxidation ditches, splitter structure, clarifiers, solids handling building, and UV treatment building.

North Water Reclamation Facility | Town of Erie

Erie, Colorado

Structural engineer that designed the UV/Dewatering facility for the treatment plant. Design consisted of a masonry building with precast double-tee roof. Concrete foundation was on drilled shafts with basins for the UV process and a structural slab for the dewatering equipment. This project was awarded the 2011 Rocky Mountain Design-Build Institute of America Water/Wastewater Project of the Year. It also received a 2013 ACEC-CO Honor Award (Waste and Storm Water Category).

Wastewater Treatment Facility | Fairplay Sanitation District

Fairplay, Colorado

Structural engineer that designed masonry building housing blower room, electrical room, and headworks for the new wastewater treatment facility. Operations started in January 2009 and the project was awarded the National Design-Build Institute of America's 2010 Water/Wastewater Project of the Year (<\$25M).

Tucson-Rogers Pump Station | City of Thornton, Colorado

Thornton, Colorado

OnSite resident engineer and representative. Worked on the City of Thornton on an eighteen month, six million-dollar (construction cost) project. Observed contractor activities and construction methods to verify the product delivered to the client met the contract drawings and specifications developed by the Engineer of Record (in this case, not Burns & McDonnell). The project was a pump station that could transfer water in either direction between the South Platte River and the reservoir.

Moffat WTP Decommissioning (Design Package 7) | Denver Water

Denver, Colorado

Structural support for work towards decommissioning the Moffat Water Treatment Plant and repurposing the finished water clear wells to become water storage tanks in their distribution system. Performed multiple tank inspections and co-authored the evaluation and Basis of Design report.

West Side Pump Stations [Countryside and Zone 5] | City of Westminster

Westminster, Colorado

Lead structural engineer. Worked on horizontal split-case pump house. Building consisted of a concrete foundation on drilled shafts, masonry walls with architectural elements, and hot-rolled steel roof trusses with metal deck diaphragm.

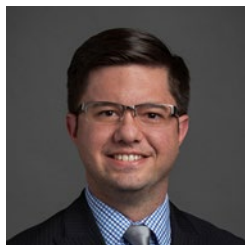
Chambers Reservoir Pump Station | Arapahoe County Water and Wastewater Authority

Parker, Colorado

OnSite engineer. Observed and inspected construction. The project consisted of a pump station for irrigation water.

RYAN LANG, RA, ENV SP

Lead Architect



With more than 16 years of experience in the field of architecture, Ryan has served as the lead project architect on a variety of municipal, industrial, commercial and public building projects. His involvement includes project management, construction administration, design, fast-tracked design-build, the preparation of the architectural plans and specifications, and 3D design.

EDUCATION

- ▶ BS, Architecture

REGISTRATIONS

- ▶ Envision SP: Registered Architect (AR, CO, FL, GA, IL, KS, LA, MO, NE, OK, SD, TN, TX, WY)

11 YEARS WITH BURNS & MCDONNELL

16 YEARS OF EXPERIENCE

Lynn R. Morgan WTP Expansion | Town of Erie

Erie, Colorado

Lead architect. Worked on the expansion of the Lynn R. Morgan Water Treatment Facility in Erie, Colorado. The project will increase the water treatment plant capacity from 9.9 to 16.7 MGD to serve increasing growth in the town. The project involves design of an additional pretreatment facility, the addition of new filtration membranes, additional yard piping and an increase in pump capacity. Responsibilities included the architectural design of the new pretreatment facility.

Pressure Zone 3 Expansion | City of Westminster

Westminster, Colorado

Lead architect. Worked on the new Gregory Hill Pump Station as part of the two 3 MG above ground tank and pump station project. The facility is part of a large pressure zone expansion project that will increase water storage capacity and water pressure within Zone 3 of the City of Westminster's water distribution system. Responsibilities included architectural design for the pump station.

K7/K10 Composite Elevated Water Storage Tanks | Water District No. 1 of Johnson County

Olathe, Kansas

Lead architect. Ryan led the design effort of three proposed water towers to extend the reach of the client. In doing so, the reliability of their water supply is increased. These towers are to be placed at two different sites; one being the intersection of K-7 and K-10, and the other being the intersection of 199th & Lackman. A primary goal of the project is to be unobtrusive to the natural environment, as the site is situated in a lesser populated area.

Lamar Pump Station Improvements | Water District No. 1 of Johnson County

Overland Park, Kansas

Lead architect. Involved in the design of the improvements to this existing pump station for Water District No. 1 of Johnson County. Improvements included: new louvers, baseboard and door hardware replacement, trolley and hoist replacement, and protective coatings.

RYAN LANG, RA, ENV SP

(continued)

Belinder 75th Nall & Brush Creek Pump Station | Johnson County Wastewater

Fairway, Kansas

Lead architect. Provided improvements at three pump stations in Kansas City. Minor architectural improvements were made at all three locations: 75th & Nall, Brush Creek, and Belinder & 57th. These improvements consisted of a door replacement, added windows and window shades, a downspout addition, new coatings, and improvements to a retaining wall. The work done was part of a package of improvements decided upon by the client.

Ridgway Pump Station Improvements | Water District No. 1 of Johnson County

Overland Park, Kansas

Architect. Involved with the design, bid, and construction phase improvements to this existing pump station for Water District No. 1 of Johnson County. Improvements included: stair replacement, trolley and hoist replacement, new louver installation, cultured stone veneer masonry cladding addition, and protective coatings. The focus of the exterior architecture of this pump station was to make the pump station blend into its surroundings. The interior focused on durability, unmanned longevity, and used high performance coatings to protect piping and electrical conduit.

Nall Avenue Pumping Station | Water District No. 1 of Johnson County

Leawood, Kansas

Architect. During the construction phase of the new 54 million gallon per day pump station for Water District No. 1 of Johnson County. The Pump Station is a concrete and brick masonry building with steel roof trusses supporting a metal deck roof. The Pump Station was designed to blend in with its upscale surroundings. As a recent win, we will be adding a second planned underground storage tank and associated capacity upgrade.

67th Street Pumping Station and Crouthers Pumping Station Improvements | Water District No. 1 of Johnson County

Kansas

Architect. Responsible for the improvements to these existing Pump Stations for Water District No. 1 of Johnson County. Improvements included asbestos and/or lead paint removal and overhead hoist additions/improvements.

67th Street Pumping Station and Woodson Pumping Station Improvements | Water District No. 1 of Johnson County

Kansas

Architect. During the construction phase of the new 54 million gallon per day pump station for Nall Avenue. The pump station is a concrete and brick masonry building with steel roof trusses supporting a metal deck roof. The pump station was designed to blend in with its upscale surroundings.

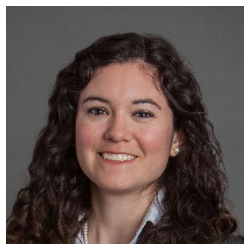
Lift Station Replacement | City of Olathe

Olathe, Kansas

Architect. Involved with the replacement of the Cedar Lake Lift Station in Olathe, Kansas. Part of Ryan's responsibilities included meeting with vendors to find the best suited materials for the project, as well as making color selections for the stone and roofing to match the existing surrounding Cedar Lake park area.

SHAWN DALGLISH, EIT

Architect



Shawn is a civil and structural engineer with five years of experience in water project design and construction. Her project experience varies from project conceptual design, project planning, and detailed design of concrete, masonry, and steel structures. Shawn has worked on several existing facility expansions as well as new facility design

and construction. She also has a background in architectural and interior design. Shawn is proficient in several structural and architectural design drafting software applications including RISA 3D, Visual Analysis, Revit, AutoCAD, and Photoshop.

EDUCATION

- ▶ ME, Civil/Structural Engineering
- ▶ BS, Civil Engineering

REGISTRATIONS

- ▶ Engineer-in-Training (TX)

5 YEARS WITH BURNS & MCDONNELL

5 YEARS OF EXPERIENCE

Lynn R. Morgan Water Treatment Plant Expansion | Town of Erie

Erie, Colorado

Structural design engineer and architect. Worked on the expansion of the Lynn R. Morgan Water Treatment Facility in Erie, Colorado. The project will increase the water treatment plant capacity from 9.9 to 16.7 MGD to serve increasing growth in the town. The project involves design of an additional pretreatment facility, the addition of new filtration membranes, additional yard piping and an increase in pump capacity. Responsibilities include structural and architectural design of the new pretreatment facility.

TDS Compliance Project at Water Reclamation Facility | Cherokee Metropolitan District

Colorado Springs, Colorado

Design Architect for the TDS Reduction Facility Project. Performed Code Review and analysis of the new structures on site including the Filter Building, Chemical Building, and Headworks Building. Coordinated building department review with local authorities. Performed Hazardous Materials analysis for the Chemical Building. Worked with the Engineering Project Manager and the client to match the exterior aesthetic of the new buildings to existing buildings at the facility. Reduced the overall construction cost of the project by working with the regional building department to approve two variances from the jurisdiction's stringent energy code requirements.

Boxelder Wastewater Treatment Facility Expansion | Boxelder Sanitation District

Fort Collins, Colorado

Structural design engineer and architect. Worked on a multi-structure, wastewater treatment facility to increase capacity of the existing wastewater treatment plant. The project involves design of a new headworks facility, oxidation ditch, secondary clarifiers, UV disinfection system, modified river discharge, aerobic digesters, dewatering system, and composting facility. Responsibilities include structural and architectural design of all above ground structures at the facility.

Plum Creek Wastewater Treatment Facility Expansion | Plum Creek Water Reclamation Authority

Castle Rock, Colorado

Structural design engineer and architect. Worked on the expansion and upgrade of the existing Plum Creek Water Reclamation Facility. The project involved the addition of a new process building which includes a headworks facility, thickening system, pump room, ThermAer tanks, and separate UV disinfection facility. Responsibilities included structural and architectural design of the above and below grade structures for the project.

SHAWN DALGLISH, EIT

(continued)

Wastewater Treatment Facility Expansion | City of Green River

Green River, Wyoming

Structural design engineer and architect. Worked on a multi-structure, wastewater treatment facility to replace the existing wastewater treatment plant. Project involves design of a new headworks facility, oxidation ditch, secondary clarifiers, UV disinfection system, modified river discharge, aerobic digesters, dewatering system, and composting facility. Responsibilities include structural and architectural design of all above ground structures at the facility.

Pierre Wastewater Treatment Plant Upgrades | City of Pierre

Pierre, South Dakota

Design architect. Worked on renovation and upgrades to a multi-structure, wastewater treatment facility in the City of Pierre. Project involves design of a new influent lift station, administration building upgrades, and modifications to an existing headworks facility. Responsibilities include architectural design of all above ground structures at the facility.

Dodd WTP Hydroelectric Project | Left Hand Water District

Niwot, Colorado

Structural design engineer. Worked on a new hydro turbine facility to be part of the overall water treatment plant capacity increase. The project purpose is to install a new hydro turbine on a new water line to be connected to the DODD Water Treatment Plant. The new hydro turbine will reduce flow into the plant while converting excess pressure into electricity. Responsibilities include foundation design, facility design, and structural design to accommodate vibrations of the turbine.

Pressure Zone 3 Expansion: Gregory Hill Pump Station and Tanks | City of Westminster

Westminster, Colorado

Structural design engineer and architect. Worked on the new Gregory Hill Pump Station as part of the two 3 MG above ground tank and pump station project. The facility is part of a large pressure zone expansion project that will increase water storage capacity and water pressure within Zone 3 of the City of Westminster's water distribution system. Responsibilities include structural and architectural design and construction phase services for the pump station.

West Side Pump Stations [Countryside and Zone 5] | City of Westminster

Westminster, Colorado

Structural design engineer and architect. Worked on the new West Side Pump Station as part of the 3 MG water storage tank rehabilitation and pump station project. The facility is part of a large pressure zone expansion project that will increase water storage capacity and water pressure within Zone 3 of the City of Westminster's water distribution system. Responsibilities include structural and architectural design of the pump station as well as construction phase services for the project.

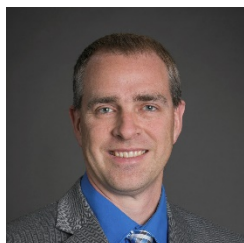
Erger's Pond Augmentation Stations | City of Brighton

Brighton, Colorado

Structural design engineer. Worked on the Augmentation Station at Erger's Pond. The project will utilize the existing reservoirs in Brighton to augment water supply out and fill with free river water to maximize raw water supply on hand for the surrounding community. The project involves design of a sediment resistant intake structure, augmentation pump station, and required electrical facilities. Responsibilities include structural and design below grade concrete intake structures, wet wells, and vaults and above grade electrical facilities.

DAVID OLSEN, PE

Mechanical Engineer



David is a mechanical engineer with 20 years of experience designing HVAC and plumbing systems for a variety of building types. He has recent water treatment plant experience and is currently working on projects for the Town of Castle Rock, City of Thornton and City & County of Broomfield.

EDUCATION

- ▶ BS, Mechanical Engineering

REGISTRATIONS

- ▶ Professional Engineer (CO, WY, MT, SD)

3 YEARS WITH BURNS & MCDONNELL

20 YEARS OF EXPERIENCE

Lynn R. Morgan Water Treatment Plant Expansion | Town of Erie

Erie, Colorado

Mechanical engineer. Designed and construction administration for the mechanical and plumbing for the expansion of this facility from 9.9 to 16 MGD.

Plum Creek WPF Advanced Treatment Project | Town of Castle Rock, Colorado

Castle Rock, Colorado

Mechanical engineer. Responsible for designing the HVAC and plumbing for a new advanced treatment building at the Plum Creek Water Purification Facility. This included doing building loads, equipment loads and calculating ventilation requirements. Then designing a system to meet these requirements. The plumbing included multiple hot water systems to meet the requirements of the process needs, emergency showers and lab requirements.

Broomfield Water Treatment Plant Expansion | City and County of Broomfield

Broomfield, Colorado

Mechanical engineer. Responsible for designing the HVAC and plumbing for a new chemical building and remodel of existing water treatment plant including office and lab space at the Broomfield Water Treatment Plant. This included doing building loads, equipment loads and calculating ventilation requirements. Then designing a system to meet these requirements. The plumbing included multiple hot water systems to meet the requirements of the process needs, emergency showers and lab requirements.

Thornton Water Treatment Plant Replacement Project | City of Thornton

Thornton, Colorado

Mechanical engineer. Design and construction services for a new 20 MGD water treatment plant that includes advanced treatment technologies for taste and odor removal. The facilities include many different types of rooms and equipment to meet the requirements of these rooms. The mechanical design included integration and controls for multiple rtu's and exhaust fans to meet the heating, cooling and ventilation of the various rooms.

Hydroelectric Project, Lynn R. Morgan Water Treatment Facility | Town of Erie

Erie, Colorado

Mechanical engineer for the detailed design of an 80 kW micro-turbine addition at the existing 17 MGD Lynn R. Morgan Water Treatment Facility. Erie has received raw water from Northern Colorado Water's SWSP pipeline for nearly 20 years. The potential energy in this pipeline was dissipated through an existing buried sleeve valve vault. The addition of a

DAVID OLSEN, PE

(continued)

hydroelectric generator proved feasibility after a study compared applicable turbine technologies, potential installation locations and several financial scenarios.

Maple Grove Water Treatment Solids Handling | The Consolidated Mutual Water Company

Lakewood, Colorado

Mechanical engineer. Responsible for design of the HVAC and plumbing for a new solids handling building for the existing water treatment plant. This included doing building loads, equipment loads and calculating ventilation requirements. Then designing a system to meet these requirements. The plumbing included multiple hot water systems to meet the requirements of the process needs and emergency showers.

TDS Compliance Project | Cherokee Metropolitan District

Colorado Springs, Colorado | Jan 2020 -

Mechanical engineer. Design HVAC and plumbing for 3 new buildings. This project required emergency shower/eye wash for a site that did not have adequate water (both quantity and quality), was able to come up solutions. This project has required multiple redesigns and complex coordination's with a tight timeframe to meet state mandates.

Boxelder Wastewater Treatment Facility Expansion | Boxelder Sanitation District

Fort Collins, Colorado

Mechanical engineer. Responsible for the equipment selection, system evaluation and design review. The Green River Wastewater Treatment Plant is a \$33M design-build project. The facilities include different types of rooms, buildings and equipment to meet the requirements of these rooms, including a Class 1 Div 1 space. The mechanical design included integration and controls for multiple rtu's and exhaust fans to meet the heating, cooling and ventilation of the various rooms.

Wastewater Treatment Facility Expansion | City of Green River

Green River, Wyoming

Mechanical engineer. Responsible for the equipment selection, system evaluation and design review. The Green River Wastewater Treatment Plant is a \$30M design-build project. The facilities include different types of rooms, buildings and equipment to meet the requirements of these rooms, including a Class 1 Div 1 space. The mechanical design included integration and controls for multiple rtu's and exhaust fans to meet the heating, cooling and ventilation of the various rooms.

Ft Lupton WWTP Upgrades | City of Fort Lupton, Colorado

Fort Lupton, Colorado

Mechanical engineer. Coordinate and design the mechanical and plumbing for the 3 remodeled buildings and 2 new buildings.

Pierre Wastewater Treatment Plant Upgrades | City of Pierre, South Dakota

Pierre, South Dakota

Mechanical engineer. Design and redesign the HVAC and plumbing for 6 buildings with use and equipment changes.



Cost Proposal

Three project fees are included herein for your consideration, based on the options described in our proposal and summarized below.

Option 3 includes added items that were identified in our multiple site visits and discussions with the Town but were not requested in the RFP. The additional elements in Option 3 are important to the operation and expansion of the WTP. Option 3 develops a clear expansion and replacement program that is flexible based on growth and budget constraints. ***Additional items listed in Option 3 may be removed from the scope if they are determined not necessary to meet the Town's goals.***

Option 3 also includes an optional parallel series of tasks to help give your operators some breathing room for the peak demand season of 2021.

Basis of Fee Summary			
Approach	Option 1	Option 2	Option 3
Process Unit	Granular Media Filtration Expansion	Membrane Filtration Expansion	Comprehensive Site Master Plan
Lonetree Pump Station & Pipeline	Remain as is		
Town Lake Pump Station	Remain as is		
Raw Water Tank	Remain as is		
Chemical Storage	Remain in existing location	Add storage to the new Membrane Building	
Pretreatment Capacity	Existing DAF 10 MGD		Convert to SAF 12.5 MGD
Filtration	Expand existing Filter Building with 3 new GMF	Add new Membrane Building with 3 trains	
Taste & Odor Control	Maintain existing PAC system. Town implement upgrades at Lonetree and Town Lake outside WTP expansion project.		Implement multi-phase approach. Lease to own GAC contactors in Membrane Building. Optimize T&O removal with SAF conversion. Future flexibility for T&O control.
Disinfection Compliance	Modify existing GST with baffles		Add new Disinfection Contact Basin sized for ultimate flows.
Treated Water Storage	Use existing GST		Convert GST to distribution storage
Distribution Pump Station	Add new below ground pump station with 3 pumps.		New at-grade pump station with vertical turbine pumps above a new DCB
Backwash Supply	Gravity from existing GST	Backwash from distribution system	
Backwash Waste	Modify existing pond footprint and recycle	No change	

	pump station for Filter Building expansion	
Electrical System	Use existing electrical service. Upgrade site lighting and security.	New electrical service for Membrane Building, DCB and DPS. Add second diesel generator. Upgrade site lighting and security
SCADA System	Scale existing system for GMF and DPS expansion by Town's existing SCADA contractor	Add control system nodes for Membrane Building, T&O system, DCB and new DPS.
Best Value Project Our initial analysis indicates that Options 1 and 2 result in similar estimated construction costs but limit the future flexibility and operational robustness provided by Option 3.		

Town of Johnstown

Water Treatment Plant Expansion from 5 to 10 mgd

Work Breakdown Structure and Fee Schedule - Option 1 GMF Expansion

Activity	Project Manager	Quality Control	Lead Process	Process	Structural	Architectural	Civil	Mechanical	Electrical, Instrumentation & Controls	Construction	CAD / Designer	BMcD Total Labor		Expenses	Sub- Consultants	Total Cost
	Pugh	Schaefer	Kinser	Rachelson Huth	Kienholz	Lang Dalglish	Tessitore	Olsen	Johnson Patwari	Herrington Other	Ellis					
	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Cost	Direct	Cost	
TASK SERIES 100 - Project Initiation & Coordination																
101 - Project Kick Off Meeting	4		4									8	2024	\$80		\$ 2,104
102 - Bi-Weekly Review Meetings	26											26	\$6,552	\$260		\$ 6,812
103 - Project, Risk and Resource Management, Schedule and Budget Controls	110												\$27,720	\$1,110		\$ 28,830
Sub-Total Series 100	140	0	4	0	0	0	0	0	0	0	0	34	\$36,296	\$1,450	\$0	\$37,746
TASK SERIES 200 - Review Existing Data & Basis of Design																
201 - Review Existing Records	2		4	8								14	\$3,234	\$130		\$ 3,364
202 - Develop Permitting Matrix	2			4								6	\$1,361	\$50		\$ 1,411
203 - Desktop Analysis ¹	2	1	2	12	2				2		16	37	\$6,296	\$250		\$ 6,546
204 - Workshop 1 - Filter Options Selection	4		4									8	\$2,024	\$80		\$ 2,104
205 - Water Characterization ²	2		4	8								14	\$3,234	\$130		\$ 3,364
206 - Pretreatment Capacity Analysis ³												0	\$0	\$0		\$ -
207 - Prepare 2 Layout Options for Selected Filter Type	2		4	12							16	34	\$5,658	\$230		\$ 5,888
208 - Taste & Odor Control Option Selection ⁴												0	\$0	\$0		\$ -
209 - Workshop 2 - Alternative Design Comparison ⁵	4		4									8	\$2,024	\$80		\$ 2,104
210 - Prepare Conceptual Design ⁶	4		8	30	8	6	12	2	20		40	130	\$23,245	\$930		\$ 24,175
211 - Workshop 3 - Review Conceptual Design	2		2	2								6	\$1,440	\$60		\$ 1,500
212 - Basis of Design Report ⁷	4	2	4	40	4	4	8	4	8	4	8	90	\$18,630	\$750		\$ 19,380
Sub-Total Series 200	28	3	36	116	14	10	20	6	30	4	80	347	\$67,145	\$2,690	\$0	\$69,835
TASK SERIES 300 - Preliminary Design 30%																
301 - Develop Preliminary Design 30%	16	2	24	90	60	40	32	16	40		60	380	\$75,950	\$3,040		\$ 78,990
302 - Topographic Survey							8					8	\$1,408	\$60	\$11,385	\$ 12,853
303 - Geotechnical Investigations					8							8	\$1,920	\$80	\$6,567	\$ 8,567
304 - Workshop 4 - Review Preliminary Design and Phasing	2		2						2			6	\$1,426	\$60		\$ 1,486
305 - Workshop 5 - Delivery Option Determination	2	2								2		6	\$1,516	\$60		\$ 1,576
Sub-Total Series 300	20	4	26	90	68	40	40	16	42	2	60	408	\$82,220	\$3,300	\$17,952	\$103,472
TASK SERIES 400 - Detailed Design 60%																
401 - Prepare 60% Design	16	2	32	140	90	48	40	32	80	8	120	608	\$118,658	\$4,750		\$ 123,408
402 - Utility Locates & Test Holes ⁸				8								8	\$1,714	\$70	\$10,000	\$ 11,784
403 - Review Meeting 1 - 60% Design	2		2						2			6	\$1,426	\$60		\$ 1,486
404 - Initial Permitting Support ⁹	12	2	4	24	4	4	24	2	4		8	88	\$17,753	\$710		\$ 18,463
Sub-Total Series 400	30	4	38	172	94	52	64	34	86	8	128	710	\$139,551	\$5,590	\$10,000	\$155,141
TASK SERIES 500 - Optimize Operations																
501 - Identify Optimization Tasks												0	\$0	\$0		\$ -
502 - Workshop 6 - Operations Investigation												0	\$0	\$0		\$ -
503 - WTP Operations Support												0	\$0	\$0		\$ -
504 - Procurement & Installation Support												0	\$0	\$0		\$ -
Sub-Total Series 500	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$0
Project Subtotals - Design Development to 60%	218	11	104	378	176	102	124	56	158	14	268	1499	\$325,212	\$13,030	\$27,952	\$366,194
TASK SERIES 600 - Final Design																
601 - Prepare 90% Design	20	2	32	120	80	32	40	20	100	8	120	574	\$111,150	\$4,450		\$ 115,600
602 - Review Meeting 2 - 90% Design	2		2									4	\$1,012	\$40		\$ 1,052
603 - Final Permitting Support	8			16		24						48	\$10,454	\$420		\$ 10,874
604 - Prepare Bid Documents	2	2	4	20	16	8	12	8	32		40	144	\$26,220	\$1,050		\$ 27,270
605 - Review Meeting 3 - Bid Documents	2		2									4	\$1,012	\$40		\$ 1,052
Sub-Total Series 600	34	4	40	156	96	64	52	28	132	8	160	774	\$149,848	\$6,000	\$0	\$155,848
TASK SERIES 700 - Bid Phase Support																
701 - Pre-Bid Meeting	2											2	\$504	\$20		\$ 524
702 - Bid Phase Support	4			30	2	4	2	2	6			50	\$10,780	\$430		\$ 11,210
703 - Review Bids	4											4	\$1,008	\$40		\$ 1,048
Sub-Total Series 700	10	0	0	30	2	4	2	2	6	0	0	56	\$12,292	\$490	\$0	\$12,782
Project Subtotals - Final Design & Bid Phase Support	44	4	40	186	98	68	54	30	138	8	160	830	\$162,140	\$6,490	\$0	\$168,630
Project Subtotals	262	15	144	564	274	170	178	86	296	22	428	2329	\$487,352	\$19,520	\$27,952	\$534,824
Project Total																\$534,824

Notes:

1. Review data provided by Town (record drawings, operating records). Conduct field visual assessment of existing assets to determine if assets suitable to integrate in expanded WTP.

2. Town to provide population projections as basis for future water demand calculations. Use existing water quality data.

3. Maintain current pretreatment capacity of 10 MGD. Perform desktop analysis to confirm anticipated removal percentages.

4. Maintain existing PAC system, add ultrasonic buoy to Town Lake. No new T&O control process.

5. Select process train for conceptual design.

6. Resolve layout on existing WTP site, estimate construction cost, schedule and phases.

7. Document decisions and design criteria, based on feedback at Workshop 3.

8. Includes allowance for 10 utility test holes at \$1,000 each.

9. Prepare initial submittals to CDPHE Water Quality Division, Town Planning and Building Permit, Weld County.

Town of Johnstown
Water Treatment Plant Expansion from 5 to 10 mgd

Work Breakdown Structure and Fee Schedule - Option 2 Membrane Filtration

Activity	Project Manager	Quality Control	Lead Process	Process	Structural	Architectural	Civil	Mechanical	Electrical, Instrumentation & Controls	Construction	CAD / Designer	BMcD Total Labor		Expenses	Sub- Consultants	Total Cost
	Pugh	Schaefer	Kinser	Rachelson Huth	Kienholz	Lang Dalglish	Tessitore	Olsen	Johnson Patwari	Herrington Other	Ellis					
	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Cost	Direct	Cost	
TASK SERIES 100 - Project Initiation & Coordination																
101 - Project Kick Off Meeting	4		4									8	2024	\$80		\$ 2,104
102 - Bi-Weekly Review Meetings	24											24	\$6,048	\$240		\$ 6,288
103 - Project, Risk and Resource Management, Schedule and Budget Controls	100												\$25,200	\$1,010		\$ 26,210
Sub-Total Series 100	128	0	4	0	0	0	0	0	0	0	0	32	\$33,272	\$1,330	\$0	\$34,602
TASK SERIES 200 - Review Existing Data & Basis of Design																
201 - Review Existing Records	2		4	8								14	\$3,234	\$130		\$ 3,364
202 - Develop Permitting Matrix	2			4								6	\$1,361	\$50		\$ 1,411
203 - Desktop Analysis ¹	2	1	2	12	2				2		16	37	\$6,296	\$250		\$ 6,546
204 - Workshop 1 - Filter Options Selection	4		4									8	\$2,024	\$80		\$ 2,104
205 - Water Characterization ²	2		4	8								14	\$3,234	\$130		\$ 3,364
206 - Pretreatment Capacity Analysis ³												0	\$0	\$0		\$ -
207 - Prepare 2 Layout Options for Selected Filter Type	2		4	12							16	34	\$5,658	\$230		\$ 5,888
208 - Taste & Odor Control Option Selection ⁴												0	\$0	\$0		\$ -
209 - Workshop 2 - Alternative Design Comparison ⁵	4		4									8	\$2,024	\$80		\$ 2,104
210 - Prepare Conceptual Design ⁶	4		8	20	8	6	12	2	24		40	124	\$21,930	\$880		\$ 22,810
211 - Workshop 3 - Review Conceptual Design	2		2	2								6	\$1,440	\$60		\$ 1,500
212 - Basis of Design Report ⁷	4	2	4	40	4	4	8	4	8	4	8	90	\$18,630	\$750		\$ 19,380
Sub-Total Series 200	28	3	36	106	14	10	20	6	34	4	80	341	\$65,830	\$2,640	\$0	\$68,470
TASK SERIES 300 - Preliminary Design 30%																
301 - Develop Preliminary Design	12	2	20	70	40	40	32	12	40		40	308	\$62,006	\$2,480		\$ 64,486
302 - Topographic Survey							8					8	\$1,408	\$60	\$11,385	\$ 12,853
303 - Geotechnical Investigations					8							8	\$1,920	\$80	\$6,567	\$ 8,567
304 - Workshop 4 - Review Preliminary Design and Phasing	2		2						2			6	\$1,426	\$60		\$ 1,486
305 - Workshop 5 - Delivery Option Determination	2	2								2		6	\$1,516	\$60		\$ 1,576
Sub-Total Series 300	16	4	22	70	48	40	40	12	42	2	40	336	\$68,276	\$2,740	\$17,952	\$88,968
TASK SERIES 400 - Detailed Design 60%																
401 - Prepare 60% Design	16	2	24	120	80	40	32	32	60	8	100	514	\$100,768	\$4,030		\$ 104,798
402 - Utility Locates & Test Holes ⁸				8								8	\$1,714	\$70	\$10,000	\$ 11,784
403 - Review Meeting 1 - 60% Design	2		2						2			6	\$1,426	\$60		\$ 1,486
404 - Initial Permitting Support ⁹	12	2	4	24	4	24	4	2	4		8	88	\$18,409	\$740		\$ 19,149
Sub-Total Series 400	30	4	30	152	84	64	36	34	66	8	108	616	\$122,316	\$4,900	\$10,000	\$137,216
TASK SERIES 500 - Optimize Operations																
501 - Identify Optimization Tasks												0	\$0	\$0		\$ -
502 - Workshop 6 - Operations Investigation												0	\$0	\$0		\$ -
503 - WTP Operations Support												0	\$0	\$0		\$ -
504 - Procurement & Installation Support												0	\$0	\$0		\$ -
Sub-Total Series 500	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$0
Project Subtotals - Design Development to 60%	202	11	92	328	146	114	96	52	142	14	228	1325	\$289,694	\$11,610	\$27,952	\$329,256
TASK SERIES 600 - Final Design																
601 - Prepare 90% Design	16	2	24	90	60	24	54	36	120	8	100	534	\$103,357	\$4,130		\$ 107,487
602 - Review Meeting 2 - 90% Design	2		2									4	\$1,012	\$40		\$ 1,052
603 - Final Permitting Support	8			16		24						48	\$10,454	\$420		\$ 10,874
604 - Prepare Bid Documents	2	2	4	20	16	8	12	8	32		40	144	\$26,220	\$1,050		\$ 27,270
605 - Review Meeting 3 - Bid Documents	2		2									4	\$1,012	\$40		\$ 1,052
Sub-Total Series 600	30	4	32	126	76	56	66	44	152	8	140	734	\$142,056	\$5,680	\$0	\$147,736
TASK SERIES 700 - Bid Phase Support																
701 - Pre-Bid Meeting	2											2	\$504	\$20		\$ 524
702 - Bid Phase Support	4			30	2	4	2	2	6			50	\$10,780	\$430		\$ 11,210
703 - Review Bids	4											4	\$1,008	\$40		\$ 1,048
Sub-Total Series 700	10	0	0	30	2	4	2	2	6	0	0	56	\$12,292	\$490	\$0	\$12,782
Project Subtotals - Final Design & Bid Phase Support	40	4	32	156	78	60	68	46	158	8	140	790	\$154,348	\$6,170	\$0	\$160,518
Project Subtotals	242	15	124	484	224	174	164	98	300	22	368	2115	\$444,042	\$17,780	\$27,952	\$489,774
Project Total																\$489,774

Notes:

1. Review data provided by Town (record drawings, operating records). Conduct field visual assessment of existing assets to determine if assets suitable to integrate in expanded WTP.

2. Town to provide population projections as basis for future water demand calculations. Use existing water quality data.

3. Maintain current pretreatment capacity of 10 MGD. Perform desktop analysis to confirm anticipated removal percentages.

4. Maintain existing PAC system, add ultrasonic buoy to Town Lake. No new T&O control process.

5. Select process train for conceptual design.

6. Resolve layout on existing WTP site, estimate construction cost, schedule and phases.

7. Document decisions and design criteria, based on feedback at Workshop 3.

8. Includes allowance for 10 utility test holes at \$1,000 each.

9. Prepare initial submittals to CDPHE Water Quality Division, Town Planning and Building Permit, Weld County.

Town of Johnstown

Water Treatment Plant Expansion from 5 to 10 mgd

Work Breakdown Structure and Fee Schedule - Option 3 Comprehensive Site Mater Plan

Activity	Project Manager	Quality Control	Lead Process	Process	Structural	Architectural	Civil	Mechanical	Electrical, Instrumentation & Controls	Construction	CAD / Designer	BMCD Total Labor		Expenses	Sub- Consultants	Total Cost
	Pugh	Schaefer	Kinser	Rachelson Huth	Kienholz	Lang Dalglish	Tessitore	Olsen	Johnson Patwari	Herrington Other	Ellis					
	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Cost	Direct	Cost	
TASK SERIES 100 - Project Initiation & Coordination																
101 - Project Kick Off Meeting	4		4									8	2024	\$80		\$ 2,104
102 - Bi-Weekly Review Meetings	30											30	\$7,560	\$300		\$ 7,860
103 - Project, Risk and Resource Management, Schedule and Budget Controls	120											120	\$30,240	\$1,210		\$ 31,450
Sub-Total Series 100	154	0	4	0	0	0	0	0	0	0	0	158	\$39,824	\$1,590	\$0	\$41,414
TASK SERIES 200 - Review Existing Data & Basis of Design																
201 - Review Existing Records	4		8	16								28	\$6,467	\$260		\$ 6,727
202 - Develop Permitting Matrix	2			4								6	\$1,361	\$50		\$ 1,411
203 - Desktop Analysis ¹	4	1	8	24	4				4		16	61	\$11,788	\$470		\$ 12,258
204 - Workshop 1 - Filter Options Selection	4		4									8	\$2,024	\$80		\$ 2,104
205 - Water Characterization ²	4		12	16								32	\$7,483	\$300	\$10,000	\$ 17,783
206 - Pretreatment Capacity Analysis ³	4		24	40								68	\$15,672	\$630		\$ 16,302
207 - Prepare 2 Layout Options for Selected Filter Type	4		4	24							16	48	\$8,733	\$350		\$ 9,083
208 - Taste & Odor Control Option Selection ⁴	12		16	32								60	\$13,942	\$560		\$ 14,502
209 - Workshop 3 - Taste & Odor Control Option Selection	4		4	4								12	\$2,881	\$120		\$ 3,001
210 - Disinfection & Distribution Pump Station Options Development ⁵	12		24	40	8				8			92	\$21,262	\$850		\$ 22,112
211 - Workshop 4 - Alternative Design Comparison ⁶	4		4									8	\$2,024	\$80		\$ 2,104
212 - Prepare Conceptual Design ⁷	8		16	60	16	8	32	4	40		40	224	\$43,142	\$1,730		\$ 44,872
213 - Prepare WTP Siting Options, Construction & Prioritization Phases ⁸	4		8	24	4				4	8		52	\$12,000	\$480		\$ 12,480
214 - Workshop 5 - Review Conceptual Design	4		4	4								12	\$2,881	\$120		\$ 3,001
212 - Basis of Design Report ⁹	4	2	4	40	4	4	8	4	8	4	8	90	\$18,630	\$750		\$ 19,380
Sub-Total Series 200	78	3	140	328	36	12	40	8	64	12	80	801	\$170,290	\$6,830	\$10,000	\$187,120
TASK SERIES 300 - Preliminary Design 30%																
301 - Develop Preliminary Design	32	2	40	180	80	40	24	32	80		120	630	\$124,372	\$4,970		\$ 129,342
302 - Topographic Survey							8					8	\$1,408	\$60	\$11,385	\$ 12,853
303 - Geotechnical Investigations					8							8	\$1,920	\$80	\$6,567	\$ 8,567
304 - Workshop 4 - Review Preliminary Design and Phasing	4		4						2			10	\$2,438	\$100		\$ 2,538
305 - Workshop 5 - Delivery Option Determination	2	2								2		6	\$1,516	\$60		\$ 1,576
306 - Preliminary Design Report	4	2	16	60	8	8	12	4	8	8		130	\$28,693	\$1,150		\$ 29,843
Sub-Total Series 300	42	6	60	240	96	48	44	36	90	10	120	792	\$160,346	\$6,420	\$17,952	\$184,718
TASK SERIES 400 - Detailed Design 60%																
401 - Prepare 60% Design	32	2	40	180	120	60	40	40	100	8	160	782	\$152,804	\$6,110		\$ 158,914
402 - Utility Locates & Test Holes ¹⁰				2								2	\$428	\$20	\$20,000	\$ 20,448
403 - Review Meeting 1 - 60% Design	2		2						2			6	\$1,426	\$60		\$ 1,486
404 - Initial Permitting Support ¹¹	12	2	4	24	4	4	4	2	4		8	68	\$14,233	\$570		\$ 14,803
Sub-Total Series 400	46	4	46	206	124	64	44	42	106	8	168	858	\$168,891	\$6,760	\$20,000	\$195,651
TASK SERIES 500 - Optimize Operations																
501 - Identify Optimization Tasks	8	2	8	24					4			46	\$10,520	\$420		\$ 10,940
502 - Workshop 6 - Operations Investigation	4		4	4								12	\$2,881	\$120		\$ 3,001
503 - WTP Operations Support	4		32	40								76	\$17,704	\$710		\$ 18,414
504 - Procurement & Installation Support	4		8	24	16			8	32			92	\$20,390	\$820		\$ 21,210
Sub-Total Series 500	20	2	52	92	16	0	0	8	36	0	0	226	\$51,495	\$2,070	\$0	\$53,565
Project Subtotals - Design Development to 60%	340	15	302	866	272	124	128	94	296	30	368	2835	\$590,847	\$23,670	\$47,952	\$662,469
TASK SERIES 600 - Final Design																
601 - Prepare 90% Design	24	2	32	140	100	40	32	24	80	8	160	642	\$122,164	\$4,890		\$ 127,054
602 - Review Meeting 2 - 90% Design	2		2									4	\$1,012	\$40		\$ 1,052
603 - Final Permitting Support	8			16		24						48	\$10,454	\$420		\$ 10,874
604 - Prepare Bid Documents	4	2	8	30	16	8	12	8	32		40	160	\$29,882	\$1,200		\$ 31,082
605 - Review Meeting 3 - Bid Documents	2		2									4	\$1,012	\$40		\$ 1,052
Sub-Total Series 600	40	4	44	186	116	72	44	32	112	8	200	858	\$164,524	\$6,590	\$0	\$171,114
TASK SERIES 700 - Bid Phase Support																
701 - Pre-Bid Meeting	2				30	2		2	6			2	\$504	\$20		\$ 524
702 - Bid Phase Support	4					4	2					50	\$10,780	\$430		\$ 11,210
703 - Review Bids	4											4	\$1,008	\$40		\$ 1,048
Sub-Total Series 700	10	0	0	30	2	4	2	2	6	0	0	56	\$12,292	\$490	\$0	\$12,782
Project Subtotals - Final Design & Bid Phase Support	50	4	44	216	118	76	46	34	118	8	200	914	\$176,816	\$7,080	\$0	\$183,896
Project Subtotals	390	19	346	1082	390	200	174	128	414	38	568	3749	\$767,664	\$30,750	\$47,952	\$846,366
Project Total																\$846,366

Notes:

- Review data provided by Town (record drawings, operating records). Conduct field visual assessment of existing assets to determine if assets suitable to integrate in expanded WTP.
- Town to provide population projections as basis for future water demand calculations. Use existing water quality data and conduct additional lab analysis to characterize water quality. Includes \$10,000 allowance for laboratory costs.
- Convert existing DAF to SAF. Send sample water to SAF vendor for jar testing.
- Prepare comparison of T&O options including GAC, Ozone, BAF. Prepare conceptual design for GAC system, leased to own system to incorporate in WTP expansion.
- Develop disinfection, distribution storage and pumping analysis, including design of new disinfection contact basin. Perform desktop analysis on corrosion impact to distribution system.
- Select process train for conceptual design.
- Resolve treatment train, layout on existing WTP site, estimate construction cost, schedule and phases.
- Prepare 3 concepts for WTP layout on the existing property and two additional properties.
- Document decisions and design criteria, based on feedback at Workshop. Select WTP site.
- Includes allowance for 10 utility test holes at \$1,000 each.
- Prepare initial submittals to CDPHE Water Quality Division, Town Planning and Building Permit, Weld County.



Professional Engineering Services Proposal

Town of Johnstown
Water Treatment Plant Expansion Design
February 2021

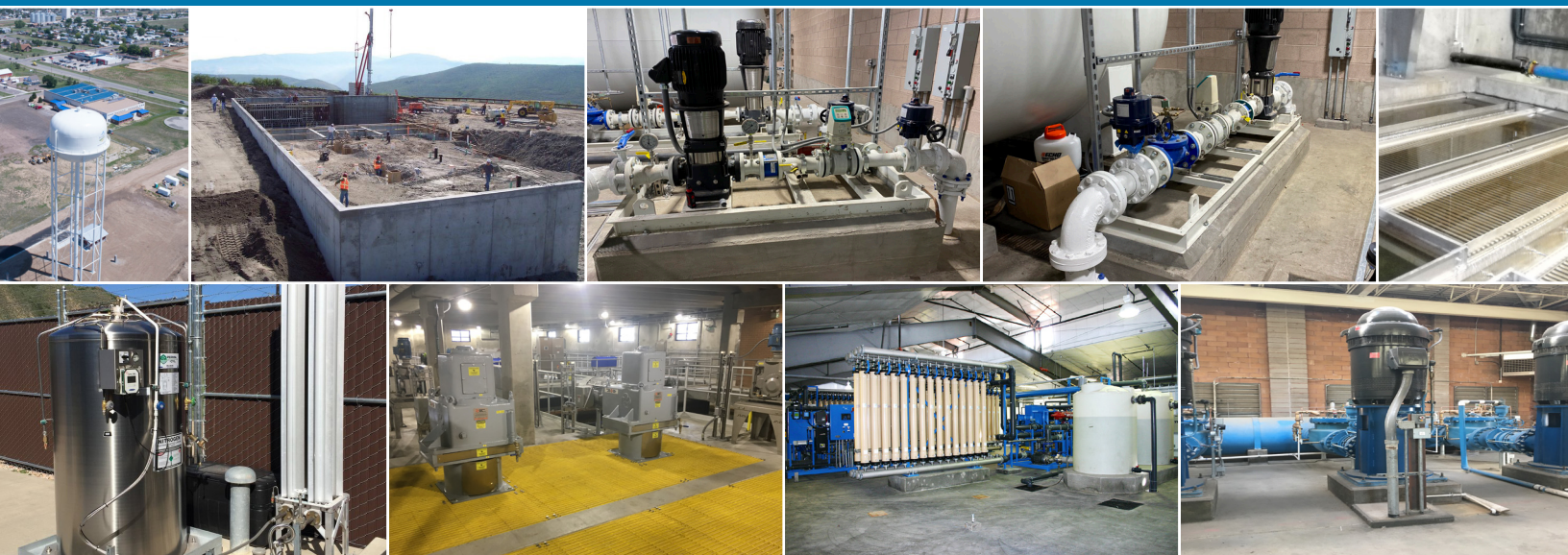


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Town of Johnstown Water Treatment Plant Expansion

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Marco Carani
Director of Public Works
Town of Johnstown
450 South Parish Avenue
Johnstown CO, 80534

February 5, 2021

RE: Letter of Transmittal
AQUA/SKM Professional Engineering Services Proposal for Expansion Design of the Johnstown Water Treatment Plant Expansion 5 to 10 MGD

Dear Marco,

Thank you for the opportunity to provide our proposal for the Expansion Design of the Town of Johnstown Water Treatment Plant. AQUA Engineering (AQUA) will engage and collaborate with the Town's staff and Ramey Environmental Compliance to develop a cost-effective and timely expansion project to address hydraulic and treatment capacity constraints and seasonal taste and odor issues. Our approach will emphasize the value of your existing facility, and we will design a plant that is easy to operate and maintain, that addresses current water quality concerns and prepares you for future expansions. We are an excellent fit for this project and will provide you and the Town with:

- ✓ Experience and capacity to deliver a high-quality project
- ✓ Our Dedicated "A-Team" staff made up of a combination of our in-house engineering disciplines, including electrical/controls engineering
- ✓ Innovative and cost-effective solutions to optimize the value of the existing WTP facilities
- ✓ A commitment to an aggressive completion schedule with the goal of achieving construction Substantial Completion by summer 2022

Experience and Capacity

AQUA has the engineering resources and experience to deliver this project. AQUA was founded in 1991 and has been delivering water and wastewater facility projects for 29 years. We are a full-service team of over 70 people and have all of the core wastewater engineering and construction management disciplines "in-house" including process design, civil, structural, mechanical, and system integration, controls, and electrical (ICE) engineering. AQUA's affiliate SKM has provided system controls engineering for multiple water treatment plants across the USA, including the Salt Lake City, UT WTP.

We assure the Town that we have the available technical staff and resources for not only this project, but also to continue our level of service and standard of care on the ongoing Low Point WWTP Expansion Project. We note that the "Johnstown Water Team" staff who will work on this project include additional AQUA staff members that are not involved in the Town's WWTP project with AQUA.

Dedicated A-Team includes Principals and Senior Engineers.

As shown on our fee estimate and staffing plan, AQUA Principal Engineers/firm owners Bob Frachetti,

Mr. Marco Carani | Director of Public Works
Town of Johnstown Water Treatment Plant Expansion
February 5, 2021

Darin Hawkes, and Ryan Pack will be actively involved on the Johnstown Water Team. In addition, our Project Manager and Lead Engineer will be Brian Daw. Brian has over 26 years of water treatment facility planning, design, and construction expertise and experience. Brian recently led the project management and engineering design for the City of Boulder's 40 MGD Betasso WTP Capital Improvements Project and the City of Westminster's Semper 65 MGD High Service Pump Station Reliability Project (while with his prior firm). Thus, Johnstown and REC will work hand-in-hand with AQUA's dedicated "A-Team" engineering staff and leadership.

Innovation and Cost-Effective Solutions

AQUA Engineering has a reputation and successful history of delivering cost-effective and innovative projects. In preparing our proposal, we developed preliminary engineering concepts and evaluated a variety of technologies and potential solutions. We are comfortable with the traditional approaches to expand capacity and address taste and odor; such as membrane or conventional filtration to increase plant capacity, and ozone/AOP, GAC, or UV/AOP for taste and odor treatment. We have already assessed conceptual layouts and costs for these established approaches and are prepared to review these with the Town during the alternative evaluation phase of the project.

However, we are also open-minded to consider alternative and innovative approaches to increase treatment capacity and address taste and odor. One such approach is ceramic ultrafiltration with advanced coagulation technology. As part of our preliminary technology assessment, we identified a technology provider/manufacturer named Purifics that can potentially address pre-treatment, taste and odor control, and expanded filtration capacity with one innovative process. (www.purifics.com) We received a detailed proposal from Purifics along with supporting information of its performance in comparison with polymeric membranes. We believe this innovative approach should be considered further with adequate demonstration testing before further consideration. This pilot testing would need to be done early in the project and extend into the summer to evaluate effectiveness under challenging raw water quality conditions.

Commitment to a Substantial Completion Goal of Summer 2022

We have developed a collaborative CMAR project delivery plan to reach project substantial completion by July 2022 – just in time for increased demand and in advance of most taste and odor issues.

Conclusion

AQUA is uniquely qualified for this project. We are already invested and engaged in the preliminary design and eager to continue.

Please contact either Bob Frchetti at (303) 995-7800 or Brian Daw at (303) 249-7510 with any questions about our qualifications or our concept ideas. We encourage you to contact our references.

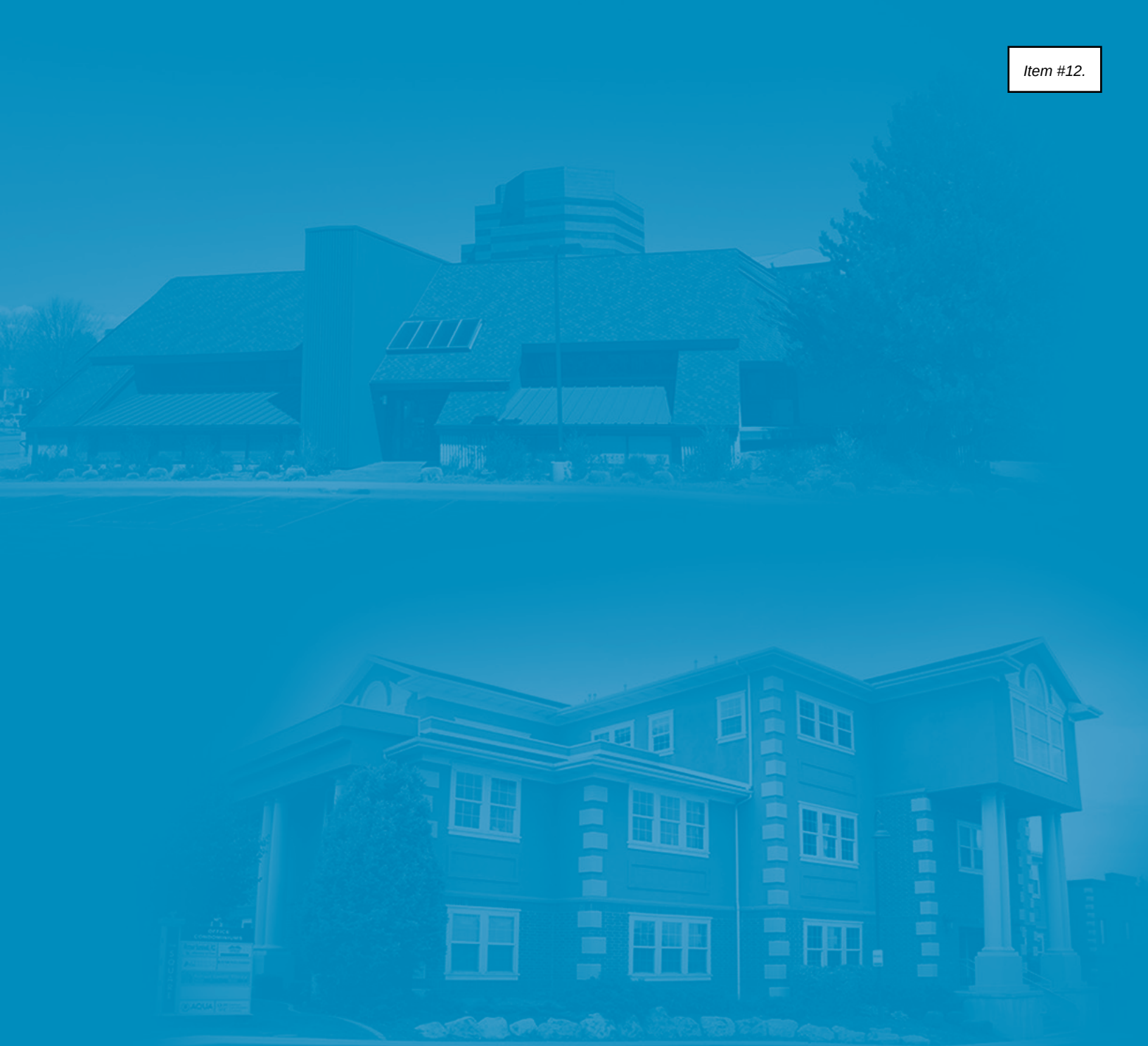
Sincerely,



Bob Frchetti, P.E.
Principal



Brian C. Daw, P.E.
Project Manager | Lead Engineer



Section 1

Identification of Proposer

The AQUA Engineering Group

We are the AQUA Engineering Group, an assembly of over 70 highly-qualified professionals unlike any other. We provide innovative engineering solutions for public and private sector markets nationwide. Our clients look to us for our quality services and our outstanding ability to effectively and efficiently solve complex engineering challenges that achieve sustainable results. AQUA is made up of a team of experienced engineering professionals, leaders, and associates who are experts in their disciplines and fully committed to helping our clients accomplish their project goals while protecting the environment and enhancing the quality of life for the people in our communities. We seek out opportunities to work with others who share our vision for success and promise to give you the best engineering experience possible on every project. Together, we can create a bright and prosperous future.



AQUA Engineering (AQUA) provides innovative engineering, operations, and construction solutions to clients nationwide. Since 1992, we have served the public and private sector. AQUA’s proven experience demonstrates our capacity and stability to deliver projects that are sustainable and operable. Our team consists of experienced professionals, designers, programmers, technicians, and associates who are capable of solving your needs and are fully committed to your success.

533 W 2600 S Suite 275
Bountiful, UT 84010
801.299.1327

5325 S Valentia Way
Greenwood Village, CO 80111
720.667.1250



SKM Engineering (SKM) was founded in 1989. SKM provides sound and proven electrical, instrumentation and control (EI&C) engineering, along with dependable and prompt service at the best value. The SKM team has the knowledge, training, and hands-on experience required to meet EI&C needs for your facilities. They apply a unique and fresh perspective and are recognized by clients for their ability to solve challenging technical problems quickly with simple and cost effective solutions. SKM provides services for over 100 clients throughout the US and Canada with offices in Utah and Colorado.

533 W 2600 S Suite 25
Bountiful, UT 84010
801.677.0011

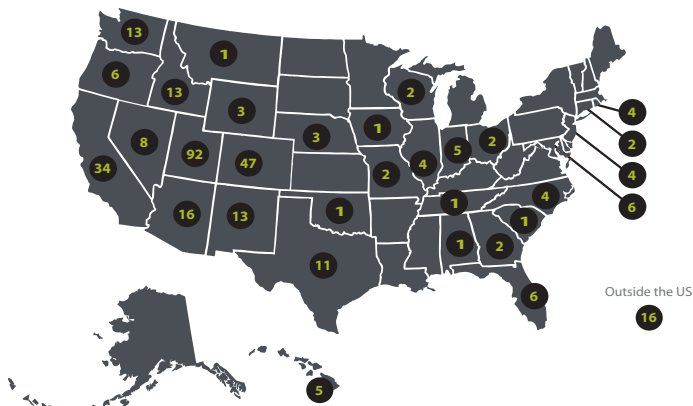


Aqua Environmental Services, Inc. (AES) is a division of the AQUA Engineering group, which provides operations consulting, start-up and commissioning services, and instrument calibration to many public and private sector clients. AES has developed a loyal base of clients in need of assistance with contract operations, small turnkey projects, facility management projects, and systems troubleshooting. With its low overhead, AES is able to offer services to many clients that would be difficult to provide with in-house staff, or in the case with small systems, with what would be costly full-time employees.

89 Monarch Dr
Bountiful, UT 84010
801.694.9106

Extensive Project Experience Relative to Your Needs

Over the years, we have worked on major design and engineering projects that have given us valuable experience with the processes and technologies necessary for completing work effectively and efficiently. We are honored by the trust and confidence our clients have in us and look to extend our track record of success in developing new facilities and in improving the performance of existing facilities for many years to come. On each and every project, we demonstrate our ability to provide excellent engineering services that make a difference for our clients and communities.



AQUA Group Project Sites

History of Excellence

Numbers often speak louder than words. We will bring you success in your projects, as we have with hundreds of our clients across the nation. By designing systems and facilities that perform at the highest level, we can promise you results and unmatched service satisfaction.

AQUA got to where it is today by consistently delivering excellent engineering results that made a difference for our clients and communities. We have created a culture that fosters success and have redefined what it means to be experts in design and engineering.

Proven Ability to Achieve Results

For nearly 3 decades, AQUA has helped clients, big and small, complete thousands of infrastructure engineering and community projects. We are recognized as the top engineering solutions provider because of how well we are able to solve unique project challenges, stay on-schedule and within budget, and achieve innovative and lasting results.



MRW Signal Hill WTP



Colorado River Resort WTP



Blanding WTP



Wasatch Resource Recovery



Tooele Solar Drying



Wolf Creek Water

Project Team Contact Information

Person	Role	Office	Email	Phone
Bob Frachetti, PE	Principal in Charge	AQUA Colorado	bob.frachetti@aquaeng.com	720-667-1251
L. Scott Rogers, PE	Principal	AQUA Utah	scott.rogers@aquaeng.com	801.683.1327
Brian Daw, PE	Project Manager	Colorado	briandaw@gmail.com	303.249.7510
Darin Hawkes, PE	Structural Engineer	AQUA Utah	darin.hawkes@aquaeng.com	801.683.3727
Nick Graue PE	Senior Project Engineer	AQUA Utah	nick.graue@aquaeng.com	801.683.3733
Craig Matsuda, PE	Senior Project Engineer	AQUA Colorado	craig.matsuda@aquaeng.com	720.667.1255
Eric Sahm, PE	Senior Project Engineer	AQUA Utah	eric.sahm@aquaeng.com	801.683.3729
Naho Garvin, PE	Project Engineer	AQUA Utah	naho.garvin@aquaeng.com	801.683.3741
Cody Vavra, EIT	Project Engineer	AQUA Colorado	cody.vavra@aquaeng.com	720.667.1254
Mike Maughan, EIT	Project Engineer	AQUA Utah	mike.maughan@aquaeng.com	801.683.3750
Mitchell Weldon, EIT	Project Engineer	AQUA Colorado	mittchell.weldon@aquaeng.com	720.667.3781
Ryan Pack, PE	EI&C Engineer	SKM Utah	ryan.pack@skmeng.com	801.683.3761
Bob Buckner, PE	Electrical Engineer	SKM Colorado	bob.buckner@skmeng.com	720.667.3749
Keith Rindt	CAD Designer	AQUA Colorado	keith.rindt@aquaeng.com	720-667-1250

Subconsultant Identification**Galloway**

5265 Ronald Reagan Blvd., Suite 210 Johnstown, CO 80534

P: 970.800.3300 | www.gallowayus.com



Galloway's mechanical team consists of the most knowledgeable, dedicated and talented individuals in the industry who truly care about your success. We offer thoughtful, creative design solutions for building systems – from alternative energy solutions and life-cycle costing, to construction load analysis. Through the use of both AutoCad and Revit BIM format, we provide design, engineering and energy modeling to support LEED certification, EPA Energy Star designation and ASHRAE 90.1 compliance requirements. Additional services include building audits, code compliance and peer review.

Personnel Contact Information

*Address information found at the top of firm introductions

Person	Role	Office	Email	Phone
Alicia Thorpe, PE	Sr. Mechanical Project Manager	Johnstown, CO	aliciathorpe@gallowayus.com	970.396.5719
Jay Cooper, PE	Mechanical Project Manager	Johnstown, CO	jaycooper@gallowayus.com	970-800-3300

Eidos Architects

5400 Greenwood Plaza Boulevard, Greenwood Village, CO 80111

P: 720.200.0630 | www.eidosarch.com



Eidos Architects provides complete architectural services to our clients from the start of programming for your facility through completion of construction and building occupancy. We also act as a team leader and project manager for our clients throughout their project, and as a collaborative team we bring the vision of our clients to a successful design solution that responds to the sometimes complex and varied needs of a project. We take pride in being good listeners and being responsive to our clients throughout the project process and meeting their needs within the constraints of their time schedules and budget.

Our clients want to be able to visualize their buildings before they are built and reach a better understanding of design concepts. We are continuously updating our 3D modeling capabilities to serve as a design tool and create more realistic and accurate presentations. We can also provide clients with physical models for display. Clients feel that our 3D models and movie animations help their fundraising efforts and simplify communications throughout a project.

Personnel Contact Information

*Address information found at the top of firm introductions

Person	Role	Office	Email	Phone
Lori Hanson, AIA	Architect	Greenwood Village, CO	lhanson@eidosarch.com	720.488.1303

Altura Land Consultants

6950 S. Tucson Way, Unit C Centennial, CO 80012

P: 720.488.1303 | www.altalandsurveying.com



Altura Land Consultants offers a wide range of Professional Land Surveying services, serving large and small projects alike. Our staff of licensed surveyors will work with you from the beginning of your project providing consultation to determine your needs and will be there all the way to the end providing the necessary services.

Personnel Contact Information

*Address information found at the top of firm introductions

Person	Role	Office	Email	Phone
Jesse Lugo, PLS	Surveyor	Centennial, CO	jesse@alturaland.com	720.488.1303

Kumar & Associates

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Kumar & Associates, Inc. (K+A) is an employee-owned consulting engineering firm providing professional and technical services in the areas of geotechnical engineering, environmental sciences, engineering geology, and construction observation and materials testing. The firm was established in 1989 and has a current staff of more than 150 professional engineers and geologists, environmental scientists, engineering technicians, and support personnel. Our offices are located in Denver (HQ), Parker, Colorado Springs, Fort Collins, Glenwood Springs, and Summit County, Colorado.

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Kahuna's Laser Scanning and Modeling Team specializes in supporting engineers and asset managers with BIM model data and reality capture. With roots in the energy infrastructure industry, Kahuna understands the value behind precise data in a timely and cost-effective manner. Our expertise and knowledge of geospatial survey technology and Revit/ 3D modeling software allows us to supplement your current scan team, or provide a full suite of laser scanning, point cloud, Revit and 3D modeling services.

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Section 2

Project Overview & Approach

Project Overview & Approach

Our team considered the Town's goals shared in the RFP and during the pre-submittal conference and reviewed related information to develop our understanding of the key project issues and develop our approach to working with the Town to plan, design and construct a successful project.

Our approach is based on our preliminary analysis of available information and cumulative experience along with initial coordination with treatment process equipment manufacturers. Based on our analysis and their input, we identified proposed improvements and their general design basis best suited to improve treated water quality to meet the Town's level of service goals.

AQUA will provide the Town of Johnstown (the Town) with a practical and cost-effective solution to meet the following objectives:

- ✓ Increase the WTP's rated treatment capacity to 10 to 12 million gallons per day (mgd) by increasing its' filtration capacity and pathogen removal (disinfection) capabilities.
- ✓ Develop and implement a taste and odor (T&O) control project.
- ✓ Increase the capacity for the Lonetree Raw Water Pump Station and transmission main.
- ✓ Plan for future capacity expansions and other opportunities to improve treatment performance and finished water quality.
- ✓ Reach Construction Substantial Completion for both the filtration upgrades and taste and odor facilities by Summer 2022.



Of these objectives, schedule is perhaps the most challenging. With this in mind, AQUA has already started preliminary engineering and has consulted with numerous equipment suppliers, contractors, and CDPHE. We understand the critical path elements required to complete the project by Summer 2022 and have developed an aggressive project delivery schedule. The schedule considers minimal time allowances for preliminary engineering and technology selection, regulatory reviews, equipment selection and procurement, equipment lead times, Final Design and CDPHE approval, and construction/ commissioning. Our schedule is based on a collaborative and coordinated effort between all involved parties that includes:

- Using a construction management at-risk (CMAR) delivery approach to allow on-site construction to start in 2021, in advance of equipment delivery. We will work with the Town to onboard a qualified CMAR contractor as soon as possible (April 2021) to participate in the preliminary and final design phases - with the intent of beginning strategic on-site construction activities starting in late fall 2021 to prepare for equipment delivery in early 2022 -with installation and commissioning occurring from January 2022 to July 2022.
- Working collaboratively with CDPHE to submit and obtain approval of long lead equipment so this equipment can be ordered earlier in the project schedule. This will involve a separate equipment package submittal to CDPHE for review and approval in advance of the typical Final Design submittal for construction approval.
- Preselect and order long lead process equipment as soon as CDPHE approves the equipment design criteria. We have been advised that filtration equipment lead times are at 20 weeks from purchase order, and taste and odor control equipment (such as ozone generators) lead times were quoted to be as long as 24 to 26 weeks. Thus, pre-selection of equipment along with an early submittal to CDPHE for approval, and timely purchase by the Town is required to meet a Summer 2022 completion date.

A detailed schedule is included in Section 6.

Introduction

We look forward to working with the Town to deliver a successful project that will upgrade and improve water treatment capabilities and improve customer satisfaction with the Town's drinking water. The AQUA Team will collaborate with the Town and your operations specialist, Ramey Environmental Compliance (REC), to identify, evaluate and select preferred alternatives for meeting the Town's level of service goals and improve potable water quality while considering the Town's unique considerations, needs and preferences.

To demonstrate our engineering and construction experience, the following sections highlight our:

- ✓ Understanding of the Town's goals.
- ✓ Technical Approach to partnering with the Town to provide for the informed selection of preferred WTP improvements; and
- ✓ Proposed Project Task Workflow outlining our Scope of Services and the Deliverables that will provide the Town with a roadmap for selecting and implementing WTP improvements.

We also outline value-added services that AQUA can offer the Town, including using CMAR as an alternative project delivery method and performing hydraulic modeling to verify distribution system capacity and responses during high demand periods.

Your project is an excellent fit for our team, and we will provide the Town with the experience, enthusiasm and expertise to successfully identify and implement a practical approach meeting the Town's expectations for a successful project. Our experience allows us to deliver an efficient and cost-effective scope and associated fee, and our innovative ideas will bring value to the Town's decision-making and budgeting for both capital costs and operations and maintenance costs.

Project Understanding

AQUA has reviewed the RFP document, the Town's latest Water System Master Plan (2015) and studied available facility design drawings to inform our approach. We also visited the WTP and reviewed operations with public works staff during the pre-submittal conference. We have a solid understanding of the existing facility and needs for the expansion project.

Figure 1 provides a general overview of the Town's water treatment system that highlights the WTP's processes along with the general project considerations summarized in the following paragraphs. We used general engineering assumptions to develop a "Hydraulic and Treatment Capacity Evaluation" to highlight the capacity constraints through the WTP processes shown in Figure 1. The Evaluation reflects the estimated "gap" (in mgd) which highlight key project considerations along with water quality factors as the initial basis for identifying the needed improvements to meet the Town's project goals:

- The Lonetree and Johnstown Reservoirs supply the Town's WTP and are subject to algal blooms and T&O occurrences that give rise to customer complaints during the high demand periods in the spring and summer. Geosmin and 2-methylisoborneol (MIB) concentrations have been observed by the Town to occur in excess of 100 ng/L. The project is to include a long-term strategy for managing T&O occurrences originating from algal blooms. Possible solutions include source water management approaches at the reservoirs and treatment process upgrades.
- The Lonetree Raw Water Pump Station currently provides a total capacity of



4.7 mgd (4.3 mgd firm capacity) for transferring raw water from the reservoir to the WTP. An existing 16-inch diameter, 10.6-mile transmission main conveys raw water to the WTP. The pump station and transmission capacity must be increased to provide a total capacity of 10 to 12 mgd to convey raw water to the expanded WTP.

- The Johnstown Reservoir Raw Water Pump Station and transmission main provides additional raw water supply capacity up to 6.7 mgd. Additional capacity for the pump station is not anticipated as part of the project.
- The existing pretreatment dissolved air flotation (DAF) process consists of two (2) 5-mgd trains that routinely produce settled water turbidity of 0.5 NTU or less. Rerating the DAF to provide an approved 12 mgd capacity may be possible based on discussions with the manufacturer's representative and CDPHE drinking water engineers.
- Two (2) mixed media filters provide a firm capacity of 3.1 mgd (with one filter out of service) and total capacity of 6.2 mgd. The filters were recently retrofitted with new anthracite coal, silica sand and garnet sand media and have historically produced reliable filtered water turbidity levels below 0.3 NTU. Filtration capacity will need to be increased to meet the Town's 10 to 12 mgd rated WTP capacity goal. Firm filtration capacity will need to be designed based on one filter being out of service (e.g., for backwashing) to achieve the firm rated capacity and meet redundancy requirements outlined in the CDPHE Potable Water Design Criteria.
- Sodium hypochlorite and sodium hydroxide are added to the filtered water wetwell below the existing filters for disinfection and pH adjustment, respectively. The DAF and mixed media filter processes provide removal credits of 2-log Cryptosporidium, 2.5-log Giardia and 2-log virus log reduction values (LRV) for meeting Colorado Primary Drinking Water Regulations. Chlorine disinfection currently provides an additional 0.5-log Giardia and 2-log virus LRV to meet regulatory requirements and may only need to provide for virus LRV with the proposed upgrades to the WTP.
- The high service pump station in the Filter Building transfers chlorinated filtered water into two (2) 750,000-gallon aboveground steel tanks (clearwells) that are operated in parallel to provide disinfection contact time for Giardia and viruses. The clearwells are estimated to provide 0.5-log Giardia LRV when operated at a minimum water level of 35 to 40-ft at a WTP flow of 6.2 mgd. The project will need to consider options for increasing disinfection capacity up to a maximum day flow of 12 mgd.
- Finished water is then routed from the clearwells to the Distribution System Pump Station which consists of two (2) 125-hp East Zone pumps and two (2) 250-hp West Zone pumps. With no storage tanks located in either Zone, the pumps are designed to meet instantaneous demand during peak hour events and fire flow requirements. The West Zone pumps can augment flow to the East Zone through a PRV along the common pump station discharge header to provide some additional capacity to the East Zone. The Town is designing a new elevated tank in the East Zone to provide additional storage and is evaluating operations of the existing North Tank to cycle its operational volume and minimize stagnation. With the increased demand in the system, the East Zone pumps will need to be replaced or expanded to provide adequate capacity.
- Three (3) emergency interconnects provide the Town with up to 8 mgd for short periods. It is not typical for a utility to rely on these connections to make up its treatment capacity. Based on CDPHE design policy,



a utility's WTP filtration capacity is rated at a maximum flow equal to its available filtration capacity with a single filter out of service, e.g., an "n+1" design. Interconnects are not typically relied on to offset the need for the WTP to be designed with suitable capacity to meet maximum day or peak hour demands in the Town's case. Our filtration solutions are intended to provide a maximum rated treatment capacity to meet the Town's maximum day demand based on CDPHE design policy.

As illustrated in Figure 1, the hydraulic and treatment capacity constraints outlined above provide the Town with a general overview of the limiting factors to be addressed during the project or in the near future.

Technical Approach

AQUA will design the Project improvements based on our collective treatment and facility experience, state-of-the-industry engineering practices and the professional standard of care consistent with the requirements of CDPHE's Policy 5 – Design Criteria for Potable Water Systems. In summary, AQUA's preliminary process design will expand the WTP to have a rated maximum daily flow capacity of 10 to 12 mgd of treatment capacity for meeting water quality, taste and odor and disinfection requirements. The specific rated treatment capacity will be confirmed upon review of the historical flow and raw water quality records provided by the Town.

Based on our review of the existing WTP design criteria, we have identified major project elements to inform the Town with our technical approach. Figure 2 illustrates options we've identified as potential improvements to manage T&O occurrences, increase filtration capacity, increase disinfection capacity and provide other potential value-added improvements.

The preliminary technical design alternatives we've developed will provide the Town with an updated, reliable, and resilient facility designed to meet challenging water quality conditions and accommodate future expansion. We've performed preliminary process calculations for sizing the proposed facilities and unit processes, and we are confident in the feasibility of the alternatives for meeting the Town's goals once water quality data can be provided by the Town. We also propose to prepare project enhancements that are not specifically requested in the RFP that help with meeting the desired capacity requirements.

Our conceptual designs are based on using existing facility infrastructure where advantageous and maximizing the functionality of the existing site features in anticipation of future expansions. Specifically, in addition to the filtration approaches requested in the RFP to expand the facility using conventional media filtration or pressure membrane microfiltration, we are suggesting that the Town consider two (2) additional membrane technologies.

We propose to evaluate the following treatment processes for the expansion of filtration capacity, managing T&O compounds and providing necessary disinfection to achieve adequate LRV for pathogens

Filtration Capacity Expansion: WTP filters serve as the primary barrier to pathogens in the source water. CDPHE design policy requires that the capacity of the filters be designed considering one filter out of service. Both conventional and membrane filtration are successfully used to meet the regulatory requirements for removing pathogens. For the Town's project, the following filter technologies are suitable for increasing the WTP's treatment capacity from 6.2 mgd up to 12 mgd:

- ✓ Conventional Media Filtration
- ✓ Pressure Membrane Micro/Ultrafiltration (MF/UF)
- ✓ Membrane Gravity UF
- ✓ Ceramic Membrane UF



Pressure membrane modules provide a compact footprint in comparison with conventional media filters.

Membrane filtration provides the advantage of a more compact footprint than conventional media filters. The compact footprint allows for installing a higher filtration capacity at the WTP or possibly reusing the existing filter basins to meet the Town's treatment capacity goals.

Of particular interest, we have contacted a ceramic membrane system manufacturer, Purifics, that has successfully piloted and designed their system for similar applications. Their continuous ultrafiltration (CUF) system anecdotally is capable of removing algae, reducing total organic carbon (TOC) and mitigating T&O issues. The design consists of an integral coagulant rapid-mix tank following by a ceramic ultrafiltration membrane, without the need for pretreatment flocculation and sedimentation (i.e., DAF). In challenge pilot testing, the unit exhibited 4 times the flux rate of polymeric membranes and greater TOC removal. While the supporting data is favorable, T&O compound removal was not directly tested, and we are uncertain if additional treatment is needed to reduce MIB and geosmin levels. **The manufacturer offered to arrange for a pilot unit to be delivered within 2 to 4 weeks. AQUA is prepared to coordinate a pilot-testing plan if the Town would like to consider this technology.**



Ceramic membranes have been demonstrated to operate at flux rates of 250 gfd compared with 30 to 40 gfd for polymeric membranes.

For a general comparison of the relative footprints of each filtration option, Figures 3-1 and 3-2 illustrate preliminary building sizes and their general arrangement on the WTP site. The membrane gravity UF system is proposed to be installed in the existing filter building, potentially lessening total project costs by reusing the existing filter cells. The capacity of the gravity UF filters may be limited to the lower end of the Town's preferred capacity, though the addition of planned storage in the distribution system and the membranes' pathogen removal capabilities may reduce the needed filtration capacity.

T&O Compound Control: Taste and odor occurrences regularly occur in the summer months when reservoir turnover is occurring, water temperatures increase, and sunlight increases. Algae releases geosmin and MIB that are the primary algal metabolites contributing to T&O complaints. Algal blooms also result in the release of cyanotoxins that are becoming a more prevalent water quality concern. These compounds are not currently regulated but are subject to CDPHE's health advisory requiring public notice of their potential health impacts in drinking water. The following treatment processes are proposed for the Town's consideration:

- ✓ Reservoir Surface Mixers
- ✓ Intermediate Ozone Addition
 - ✓ Ultraviolet (UV) Advanced Oxidation Process (AOP)
 - ✓ Granular Activated Carbon (GAC)



Treatment at the WTP using ozone, UV or GAC can successfully eliminate T&O compounds as well as be used to treat cyanotoxins. Ozone and UV also have the added benefit of providing disinfection LRV credits for Cryptosporidium, Giardia and viruses. As noted above, source water management practices such as using surface mixers may be an option to improve the water quality at the Town's reservoirs – we understand that the Town shares storage rights with other users, and this option may not be feasible.

Figure 3-3 illustrates the relative footprints for implementing ozone, UV and GAC at

the WTP site. Final locations will depend on the selected filtration option, with the goal to integrate the selected process into the WTP process train by taking advantage of existing structures and considering future capacity expansion of the WTP.

Disinfection Capacity: Removal and/or inactivation of pathogens is required to meet Safe Drinking Water Act treatment technique requirements, e.g., pathogen LRV. **The selection of the filtration and T&O treatment processes will contribute to removing pathogens and allow the Town to optimize its onsite storage in the Clearwell Tanks or consider options for locating additional storage in the distribution system and reduce congestion on the WTP site.** The following options outline how the Town can achieve required primary pathogen disinfection/removal:

- ✓ Membrane MF/UF provides 2.0-log LRV for Cryptosporidium and 3.0-log LRV for Giardia
- ✓ Ozone in addition to treating T&O compounds provides LRV credits for Cryptosporidium, Giardia and virus inactivation
- ✓ UV AOP in addition to treating T&O compounds, provides LRV credits for Cryptosporidium, Giardia and virus inactivation
- ✓ Chlorination provides adequate LRV credits for virus

Table 4.1 - Log removal compliance credit for membrane filtration

Giardia lamblia	3.0 - Log
Cryptosporidium	3.0 - Log
Viruses	no credit granted

CDPHE Policy 5 allows for membranes to be rated with up to 3-log removal for Crypto and Giardia, reducing the Town’s disinfection/inactivation requirements to 4-log virus which can be achieved in the existing Clearwell Tanks.

Based on the planned filtration expansion and the T&O treatment options, the proposed improvements will provide multiple barriers to pathogens and will achieve the necessary disinfection/removal to meet water treatment regulations. Ozone provides a robust barrier against pathogens, T&O, and other emerging contaminants including cyanotoxins. UV AOP doses to remove geosmin and MIB are greater than those required to achieve pathogen disinfection. GAC filtration is less operator-friendly due to its relatively quick exhaustion resulting from the strong uptake of organics including geosmin and MIB, and regular replacement or regeneration costs. GAC is recommended only to be considered as a polishing process downstream of either ozone or UV but is not necessary to meet treatment goals.

Discussion of Preliminary Design Concepts

The following information provides a brief review of our preliminary design concepts to illustrate how the treatment options presented above can be applied to the Town’s goals. The discussion is organized to reflect the Town’s water system from raw water sources through to the distribution system pump station. Figure 4 provides a general schematic of the proposed treatment improvements outlined below. Figures 3-4 and Figure 4 provide a general site arrangement and process schematic of the proposed treatment improvements outlined below.

Lonetree Reservoir and Raw Water Pump Station

- We acknowledge that there are hydraulic pumping and transmission capacity limitations for the pump station to provide up to 12 mgd of flow. We look forward to working with the Town to review the pump station conditions, evaluate the existing transmission main alignment and prepare a practical design to convey the required flow from the reservoir to the WTP.
- Our team includes conveyance engineers supported by civil, structural, electrical and controls engineers and designers that have completed similar projects.

Johnstown Reservoir and Raw Water Pump Station

- Surface-mounted mixers can be used to destratify the reservoir water column and improve water quality conditions to mitigate algal blooms.



- One manufacturer, SolarBee, has installed surface mixers in a Loveland, Colorado reservoir and the case study indicates a reduction in cyanobacteria and geosmin levels over the previous 4 years.
- Surface mixers can be solar-powered or submerged mixers fitted with air hoses to induce mixing along the thermocline in the reservoir. The mixing action assists with maintaining dissolved oxygen levels throughout the water column, encouraging “good” algae to grow and mitigating algal blooms that result in the release of geosmin, MIB and cyanotoxins.

Dissolved Air Flotation

- The DAF system provides a rated capacity of 10 mgd. Based on discussions with CDPHE drinking water engineers and with the manufacturer’s representative, the DAF system could be re-rated to a higher capacity.
- Re-rating can be based on results and observations of DAF performance at other utilities with similar water quality.
- Another option is to consider the manufacturer’s floc recirculation upgrade for increasing the rated capacity up to 12 mgd.

T&O Control

- Based on review of the project flows and elevated geosmin/MIB concentrations between 100 and 200 ng/L, ozone provides a reasonable multi-barrier approach to T&O control along with DAF. While DAF will remove the algal cells, the ozone will target the dissolved geosmin and MIB, and organic compounds including cyanotoxins.
- Combined with membrane or conventional filtration, ozone provides a multi-barrier approach to pathogen inactivation/removal at relatively lower doses than required for removing geosmin and MIB.
- Relatively short ozone contact times provide efficient disinfection and removal of organic compounds allowing for a relatively small footprint of the ozone contact basin (OCB). The dynamics of ozone injection require deep OCBs of 16-ft to 18-ft to provide efficient ozone transfer into the water. The demolition of the existing clarifiers will provide for a ready excavation to construct the OCBs.
- Adjacent to the OCB will be an ozone generator building designed to house the ozone generators.
- Generator options include modular generators and larger vessel generators. It is anticipated that ozone would be injected year-round, but it can also be turned off for periods of the year with appropriate preparation.
- The addition of the ozone equipment will merit a review of the existing emergency generator and evaluation of a new site-wide generator or daisy-chained electrical system to provide sufficient emergency power to continue producing potable water.

Membrane Gravity Filter

- As a cost-management approach for the project, installing membrane gravity filter modules into the existing filter cells would provide cost savings for the project. The membranes would double the filtration capacity in the footprint of the existing cells. In addition, the cells could be split into 4 total filters giving the Town flexibility for backwash sequencing and operating less equipment to meet production during low demand periods.
- The filter basement and gallery would be used to install ancillary equipment to the membrane system, i.e., air compressor and air blowers used for backwash.
- For the intermittent cleaning of the membranes using sodium hypochlorite or caustic soda, the existing bulk tanks will need



to be evaluated for supplying sufficient chemicals for the intermittent cleaning of the membranes.

- Replacing or adding new high-service pumps is necessary to augment the two (2) existing 2,600-gpm pumps to provide sufficient capacity for conveying up to 12 mgd to the clearwells from the filtered water wetwell.
- Separate chemical feed systems would be co-located with existing chemical feed pumps to maintain primary disinfection and pH adjustment in the clearwells.

Disinfection Clearwells

- The two (2) clearwells are sufficient for providing 4-log virus inactivation at low water levels of 15-ft or higher. With the addition of ozone and/or membrane filtration, the LRVs for *Cryptosporidium* and *Giardia* can be met without chlorine contact time.
- The noted disinfection capacity for virus only will provide the Town more operating flexibility for managing storage in the system without the risk of not meeting disinfection contact-time requirements.

Distribution System (DS) Pump Station

- The East DS pumps are currently undersized for meeting the estimated peak hour demand in the East Zone. The existing pumps, flow rates, operating pressures and motors can be used to identify potential pump upgrades or replacement options to meet current and future system demands.

SCADA | Electrical

- Our in-house team of over 20 electrical engineers and SCADA experts will work with the Town's integrator and process equipment and technology providers to ensure the facility has a modern SCADA system.
- Facility electrical system will be upgraded to incorporate additional electrical and equipment loads.

Project Plan

Our Project Plan includes a discussion of our collaborative project management approach to team with Town. The following detailed Table of our proposed Scope of Services and Deliverables demonstrates the elements of our approach.

The main Tasks in our Project Plan are:

1. Project Initiation and Coordination
2. Alternatives Evaluation
3. Preliminary Design Progress (CMAR, Basis of Design Report, Equipment Pre-Selection and Pre-Purchase, and 30% drawings)
4. 60% Design Progress (Final Draft Basis of Design Report and 60% drawings)
5. Final Design (Construction Plans & Specs) and CDPHE Construction Approval Application
6. Construction Management and Engineering (with As-Built Documentation) [Future Task]

Key elements of our Project Plan are highlighted below along with other value-added services:

- **Collaborative Communication and Workshops.** AQUA believes in interactive and collaborative communication. We thus propose to have at least monthly project meetings or workshops. The frequency and agenda for these meetings will depend on where we are in the project implementation process.
- **Technical Memorandums.** We propose to prepare Technical Memoranda during the planning and preliminary engineering phases of the project to document alternative evaluations, recommendations, and decisions. These memoranda will be the foundation for the Basis of Design Report and the Final Design.
- **Alternative Project Delivery.** AQUA understands the Town's desired schedule to complete construction

“ASAP” Bob and AQUA have helped other communities meet the desired schedule by using a Construction Manager at Risk (CMAR) project delivery method. Our value-added services under this task would be to guide the Town through the process of advertising for and selecting a qualified CMAR contractor. Our services would include preparing and administering a public CMAR RFP and selection process, and also providing a tested standard CMAR-Owner Agreement to the Town.

AQUA and particularly Bob Frachetti and Brian Daw are very experienced with and embrace alternative and integrated project delivery methods and value the timely project participation of a qualified general contractor as part of the design process. This appreciation for the value of an integrated owner-engineer-contractor team was learned first-hand during Bob Frachetti’s direct experience as a General Contractor and his years as Resident (Field) Engineer. Brian also has direct experience leading integrated project delivery teams. Bob and AQUA have a significant track-record of over 20 successful design-build and CMAR projects.

- **Cost Estimating and Constructability Review.** In recognition of the constructability and cost-estimating expertise of a qualified general contractor, we also offer the Town the value-added additional service for including an experienced General Contractor as a subcontractor to the AQUA team. Their input would provide the Town and AQUA early feedback on constructability, work sequencing, and scheduling; and more accurate construction cost estimates. AQUA has multiple relationships with contractors that will be leveraged should this approach be desired.
- **Hydraulic Modeling.** AQUA also recommends a hydraulic modeling effort to verify the impact of the storage tank currently under design on the firm (and total) capacity to be used for the WTP expansion. Combined with the proposed ozone and membrane filtration improvements, the new storage tank will provide operational storage for meeting peak hour demands along with the existing two (2) storage tanks at the WTP and reduce the instantaneous demand to the distribution system pump station and WTP. This “smoothing” of the production rate at the WTP will be beneficial for sizing distribution pumps and maintaining consistent operations at the WTP.

Scope of Services and Deliverables

Comments and Clarifications to the Scope, Schedule, and Fee

1. All customary WTP predesign and design engineering services including Civil, Architectural, Structural, Process, Mechanical/HVAC, Electrical, and Instrumentation and Controls are provided. Geotechnical and Survey Services are also included.
2. We will base the design drawings and associated basis of design report on the results of Task 200 – Alternatives Evaluation.
3. Bidding and Construction Phase Services: We have NOT included bidding assistance or construction phase services as a part of this proposal. Upon completion of the design we anticipate proposing for the addition of these services to our scope and fee. This approach allows the Town and AQUA to better assess the level of service required based on the final configuration of the WTP, the complexity involved with its construction, the type of bidding and construction delivery method selected and the costs associated with the level of service that is desired.
4. Permitting or CDPHE review fees are not included.

AQUA is open to modifying the Scope of Services to meet the Town’s need.

Our proposed Scope of Services and associated Deliverables are presented on the following page as a Task Workflow exhibit.

Task 100
Project Initiation/Coordination

Key Tasks

- Review Existing WTP Operations & Process Performance**
- Develop general understanding of WTP operations, existing systems and equipment, and water quality (WQ) characteristics
 - Review available WQ data and identify potential data gaps for sampling by Town

- Facilitate Project Kickoff Meeting**
- Review existing WTP operations and conditions
 - Brainstorm the Town’s objectives and critical success factors
 - Identify the Town’s desired level of service
 - Identify key operational goals and constraints

- Prepare TM #1 – Project Goals & Existing Conditions Summary**
- Outline project objectives, level of service, operational goals, and critical success factors
 - Summarize results of operations and treatment process reviews

- Coordinate Project Activities**
- Conduct regular progress meetings with the Town to review activities, schedule, and key findings; exchange ideas; coordinate activities; and identify issues/concerns to be addressed
 - Maintain Action Items and Decision Logs to summarize key responsibilities and decisions during the project
 - Monitor project scope, schedule and budget, and coordinate with team to proactively manage progress
 - Collaborate with the Town to identify projects issues/concerns and modify tasks, deliverables and schedule to meet the Town's expectations
 - Prepare monthly progress reports and invoices

- QAQC (*All Tasks)**
- Review deliverables for conformance with project requirements and industry standards

- Deliverables**
- Project Kickoff Meeting Agenda and Summary Notes
 - Technical Memo #1 – Project Goals and Existing Conditions Summary
 - Decision & Action Item Logs
 - Monthly Project Updates and Invoices

Task 200
Evaluate Alternatives

Key Tasks

- Conduct Draft Basis Site Visits & Data Reviews**
- Inventory existing treatment processes, equipment and ancillary systems
 - Record visual observations and collect field data, e.g., motor nameplate, pump capacities, switchgear capacity
 - Identify data gaps to obtain from Town
 - Prepare treatment and hydraulic capacity evaluation
 - Collaborate with the Town staff to identify process alternatives
 - Coordinate with the Town to solicit technology demonstrations by interested manufacturers
 - Coordinate bench-/pilot-scale testing requirements to establish design criteria treatment equipment
 - Conduct field investigations (site feature survey, subsurface geotechnical investigation, 3D LiDAR survey, subsurface utility survey, etc.)

- Evaluate Alternatives**
- Develop process schematics, flow balances, treatment performance and conceptual layouts
 - Review proposed alternatives with the Town to receive input and brainstorm potential solutions to concerns/issues
 - Develop planning level opinion of probable construction costs (OPCC) [AACE Class 5] and operational costs
 - Prepare TM #2 – Alternatives Evaluation with summary of alternatives considered and relative advantages of each

- Workshop No. 1**
- Present alternatives for review with Town
 - Facilitate the Town’s ranking of alternatives using weighted evaluation criteria and select preferred alternative
 - Discuss implementation of preferred alternative(s)

- Deliverables**
- Site Visits
 - Site Survey / 3D Facility Model of Existing Filter Building
 - Geotechnical Design Report
 - TM #2 – Alternatives Evaluation
 - Workshop No. 1 Agenda and Summary Notes
 - TM #2 Review Comment and Responses

Task 300
Preliminary Design

Key Tasks

- CMAR Procurement**
- Prequalify contractors to respond to a CMAR request for proposals (RFP)
 - Prepare and advertise RFP
 - Evaluate proposals and make recommendation for selecting CMAR
 - Assist Town with CMAR award letter

- Draft Basis of Design Report (BDR)**
- Develop design criteria summary for the evaluated filtration and T&O processes
 - Summarize proposed and preferred alternatives incorporated in the project
 - Define operational and equipment design criteria for evaluated equipment
 - Prepare summary permit matrix for coordinating phasing and regulatory reviews, i.e., CDPHE construction approval, grading permit, building permit

- Prepare 30% Progress Design Package**
- Solicit quotes and submittals from equipment vendors
 - Preselect filtration and T&O equipment manufacturers
 - Develop preliminary progress drawings of proposed improvements including site layouts, equipment arrangements, building elevations, electrical one-line diagrams, and process diagrams
 - Prepare table of contents for specifications in CSI format
 - Update OPCC (AACE Class 4)
 - Submit package to the Town for review
 - Submit preselected equipment packages and design criteria to CDPHE for review/approval

- Workshop No. 2a**
- Review filtration equipment quotes and recommendation of filtration supplier
 - Select filtration supplier/equipment

- Workshop No. 2b**
- Review T&O equipment quotes and recommendation of T&O process
 - Select T&O supplier/equipment

- Pre-Purchase Selected Equipment**
- Assist with development of pre-purchase contracts for selected equipment

- Deliverables**
- CMAR - RFP, Evaluation and Award
 - 30% Design Progress Review Package
 - Workshops No. 2a and 2b Agendas and Summary Notes
 - Preselected equipment packages.
 - Equipment Pre-Purchase (by Town)

Task 400
60% Progress Design

Key Tasks

- Prepare 60% Progress Design Package**
- Coordinate with Town to incorporate Town’s Contract for Construction and other Division 0 specifications in CSI format
 - Respond to the Town’s 30% review comments
 - Advance the design drawings to the 60% design progress level
 - Compile draft technical specifications for major equipment, e.g., for purchase by CMAR
 - Update BDR with specific engineering design criteria for structures, equipment and other design features included in the project
 - Submit package to the Town for review

- Workshop No. 3**
- Conduct review meeting to present preliminary site plan, facility layouts, and discuss key issues and receive direction from the Town
 - Present detailed progress plans for improvements including treatment process equipment, building sections, and electrical equipment
 - Review OPCC estimates and budgetary quotes from manufacturers
 - Discuss overall implementation plan for constructing project and sequencing of work

- Finalize BDR**
- Respond to the Town’s Draft BDR comments
 - Submit draft Final BDR to the Town for review
 - Facilitate introductory meeting with the Town and CDPHE to review proposed improvements, project schedule and applicable design criteria
 - Respond to technical comments provided by CDPHE

- Deliverables**
- 30% Design Review Comment-Response Log
 - Draft Final BDR
 - 60% Design Progress Review Package

Task 500
Final Design

Key Tasks

- Prepare Final Design Package**
- Respond to the Town’s 60% review comments
 - Provide final updates to and finalize BDR
 - Finalize design drawings
 - Finalize technical specifications
 - Submit final design review package to the Town for review
 - Incorporate the Town’s final design review comments after Workshop No. 4 into the final plans and specifications
 - Prepare final plans and specifications for Issue for Bid release to CMAR

- Prepare CDPHE Construction Approval Application**
- Prepare Construction Approval Permit application for submitting to CDPHE
 - Compile hard and electronic copies for authorization by the Town and submittal to CDPHE

- Workshop No. 4**
- Conduct review meeting to discuss remaining issues and receive direction from the Town
 - Review implementation plan for constructing project and sequencing of work

- Deliverables**
- 60% Design Review Comment-Response Log
 - CDPHE Meeting Summary Notes
 - Final BDR
 - Final Design Progress Review Package
 - CDPHE Construction Approval Permit Application
 - Issue for Bid Contract Documents, plans and specifications

Task 600
Construction Services

Key Tasks

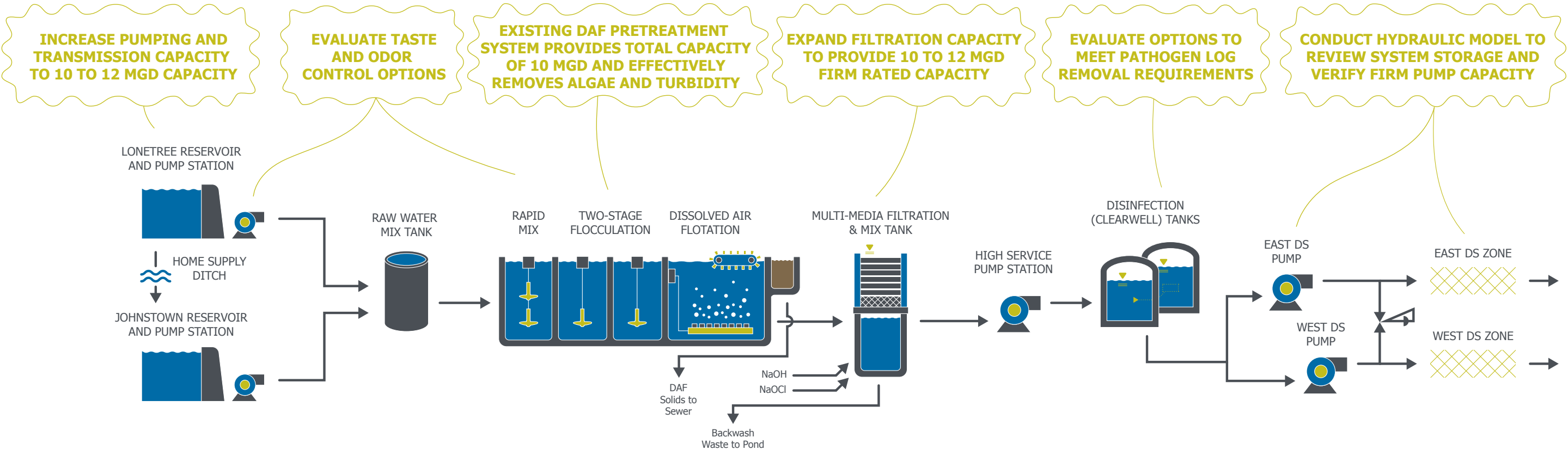
- Construction Engineering Services**
- Facilitate preconstruction conference with Town, AQUA, and CMAR team
 - Coordinate with the Town to manage electronic construction records
 - Facilitate bi-weekly progress meetings
 - Review CMAR’s monthly pay apps and redline markups to Contract Documents
 - Review shop drawing submittals/materials testing results
 - Clarify contract documents as needed
 - Review & respond to CMAR RFI/ PCO
 - Prepare recommended FO and WCDs for Town
 - Incorporate above responses/ changes to the contract into Change Orders

- Field Services**
- Onsite RPR to monitor/ observe work conforms to Contract
 - Regular engineering site visits to observe construction progress and
 - Review CMAR and manufacturer start-up and training activities
 - Operational overview for training and start-up

- Construction Closeout**
- Conduct punch list review
 - Conduct final completion walkthrough to resolve final punch list
 - Prepare record drawings
 - Conduct warranty and performance reviews of work
 - Prepare performance review memoranda for Town

- Deliverables**
- Pay Application Reviews
 - Submittal Review Comments
 - RFI and PCO Response
 - FO, WCD and CO for Town’s authorization
 - RPR and Engineering Observation Reports
 - Substantial/Final Completion Punch Lists
 - Warranty Review Visits and Memos

GENERAL PROJECT CONSIDERATIONS



HYDRAULIC/TREATMENT CAPACITY EVALUATION

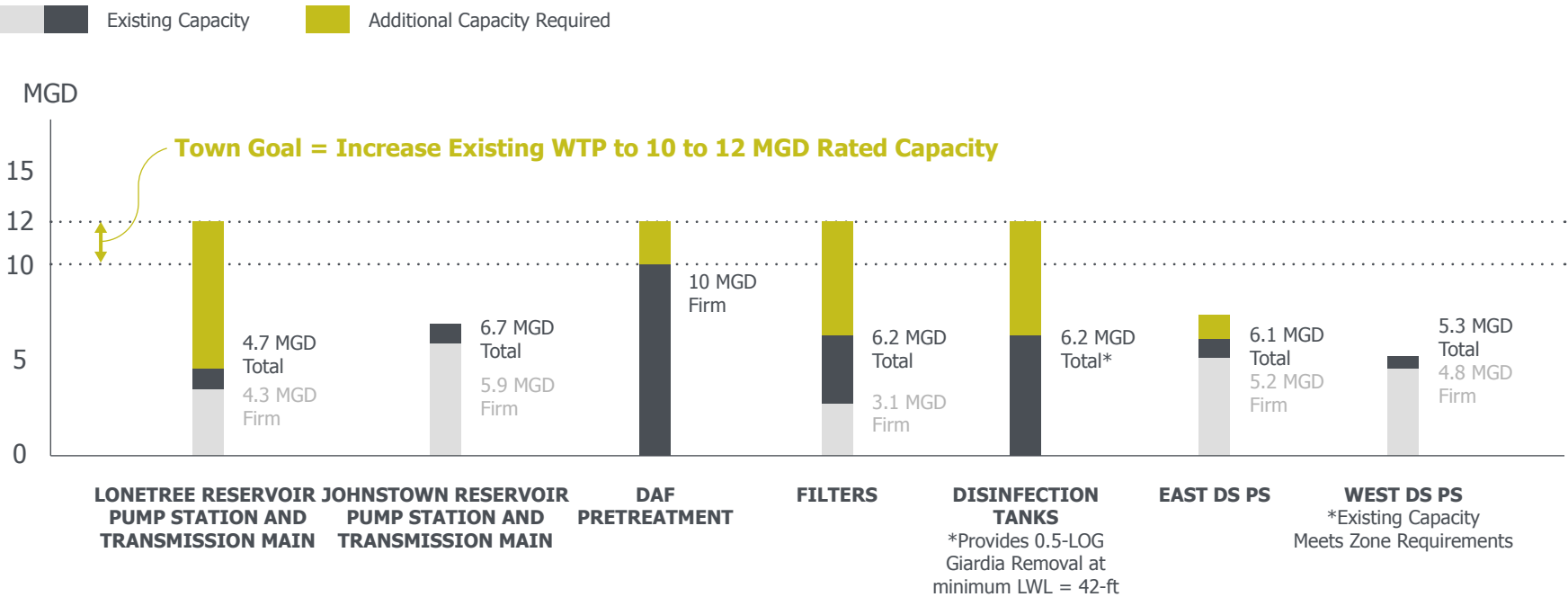
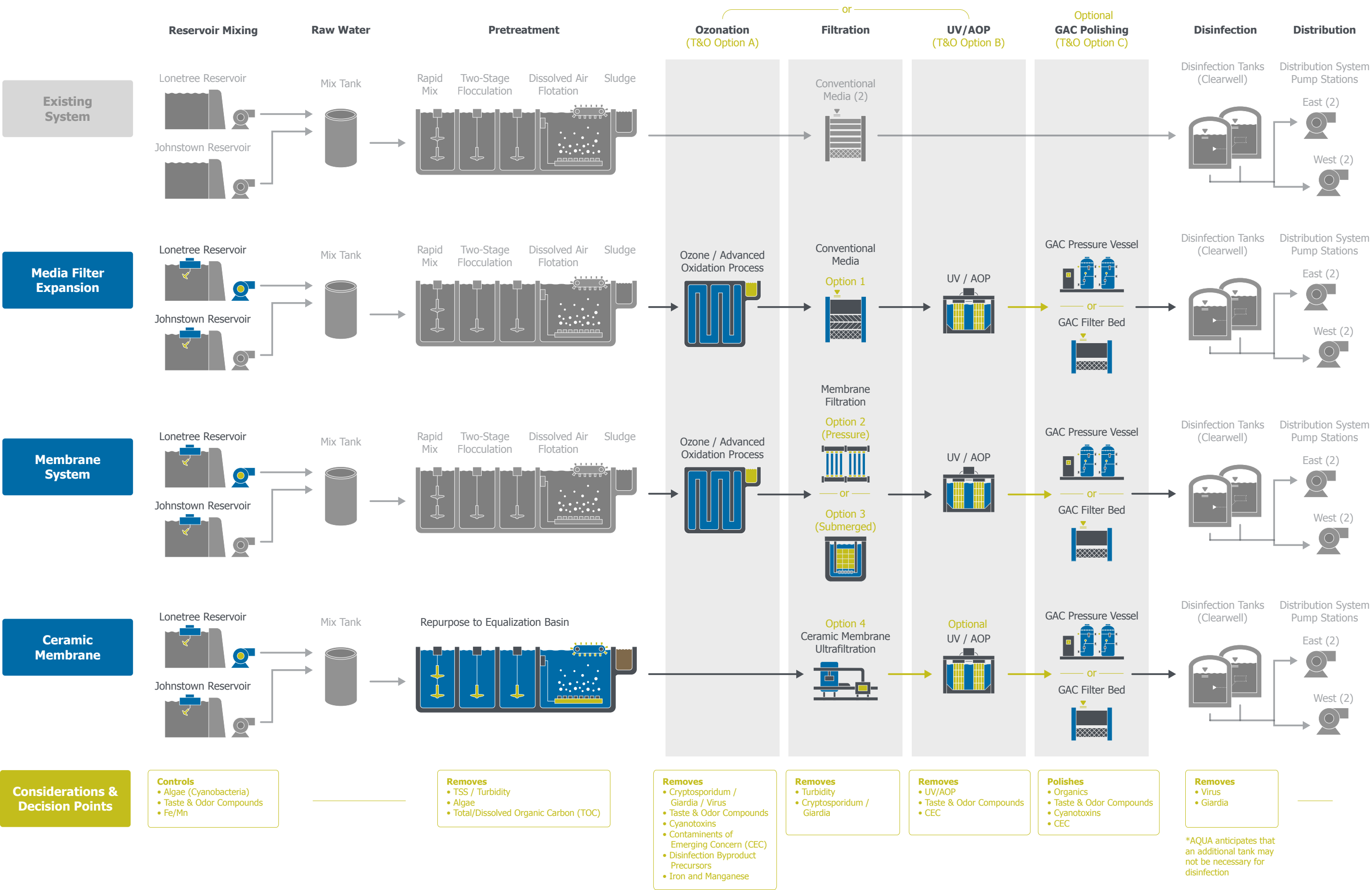


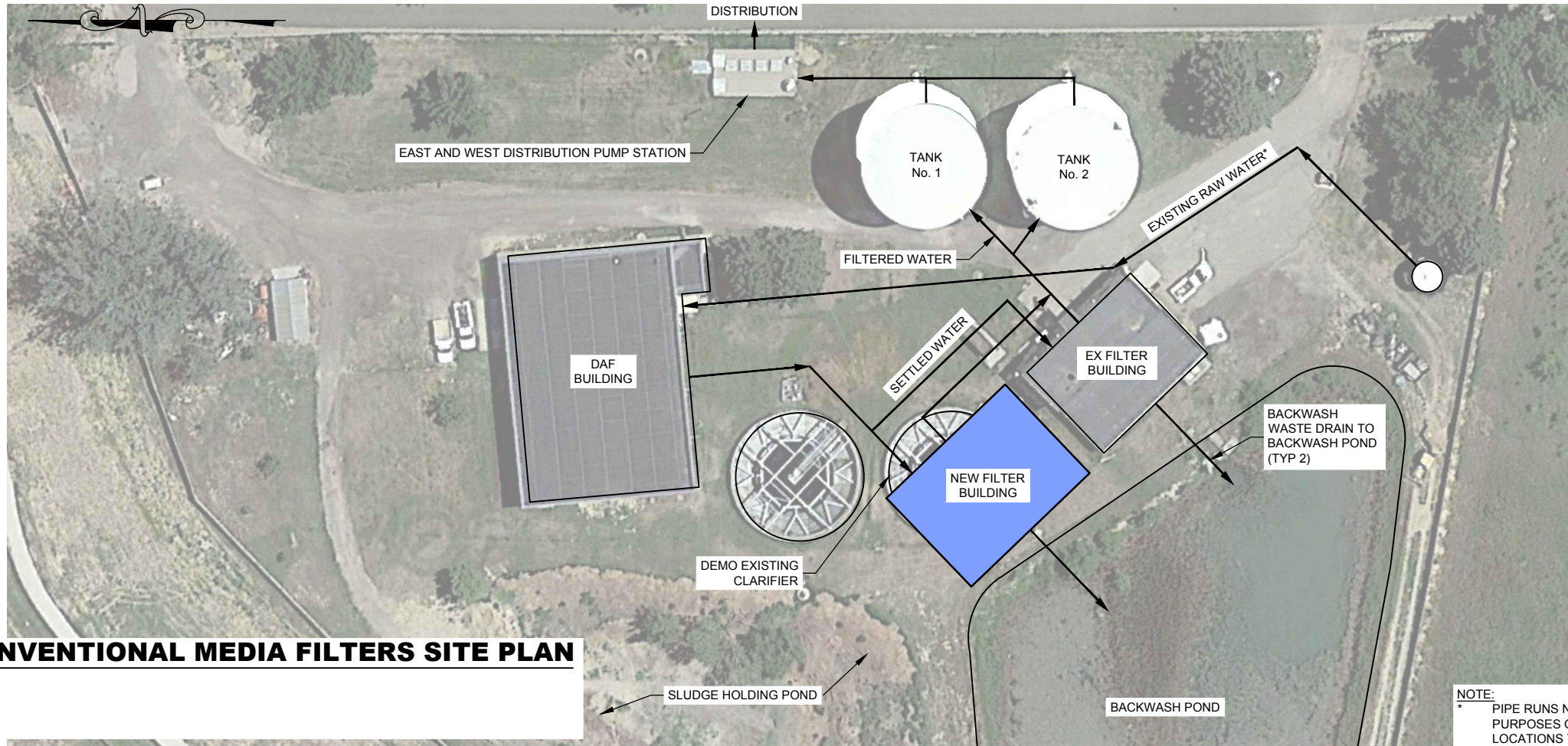
Figure 2 - Treatment Alternatives Evaluation Schematic



2/5/2021 C:\AUSERS\KEITH\AQUA ENGINEERING\001.3 003 JOHNSTOWN WTP EXPANSION - GENERAL\DRAWING\FIGURES\FIGURE 3-1.DWG

OPTION 1 - CONVENTIONAL MEDIA FILTERS SITE PLAN

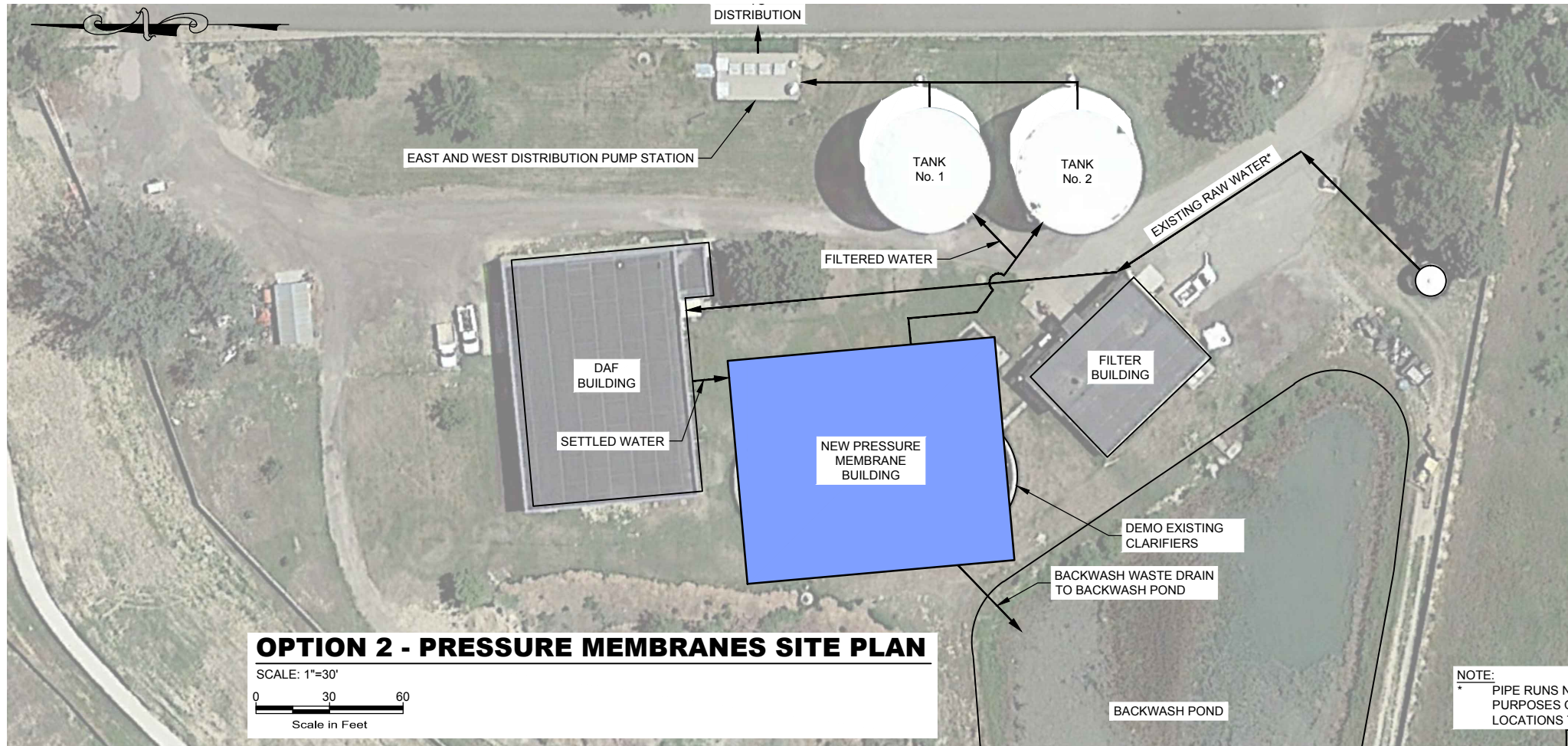
SCALE: 1"=30'
0 30 60
Scale in Feet



NOTE:
* PIPE RUNS NOTED FOR SCHEMATIC PURPOSES ONLY. BURIED PIPE LOCATIONS TO BE VERIFIED.

OPTION 2 - PRESSURE MEMBRANES SITE PLAN

SCALE: 1"=30'
0 30 60
Scale in Feet



NOTE:
* PIPE RUNS NOTED FOR SCHEMATIC PURPOSES ONLY. BURIED PIPE LOCATIONS TO BE VERIFIED.

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING

Item #12.

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TOWN OF JOHNSTOWN
WATER TREATMENT PLANT EXPANSION
23205 CO RD 13 JOHNSTOWN, CO 80534
CONVENTIONAL FILTER AND
PRESSURE MEMBRANE SITE PLAN



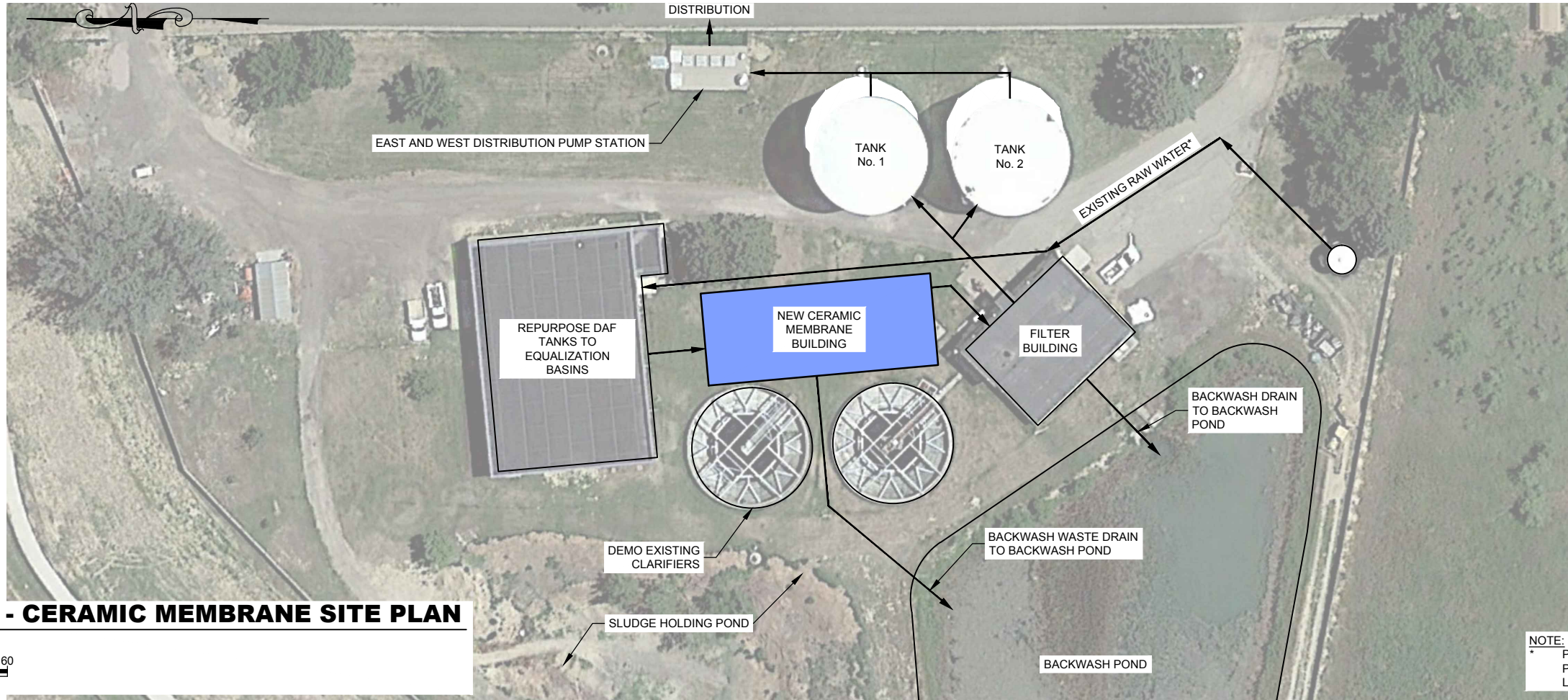
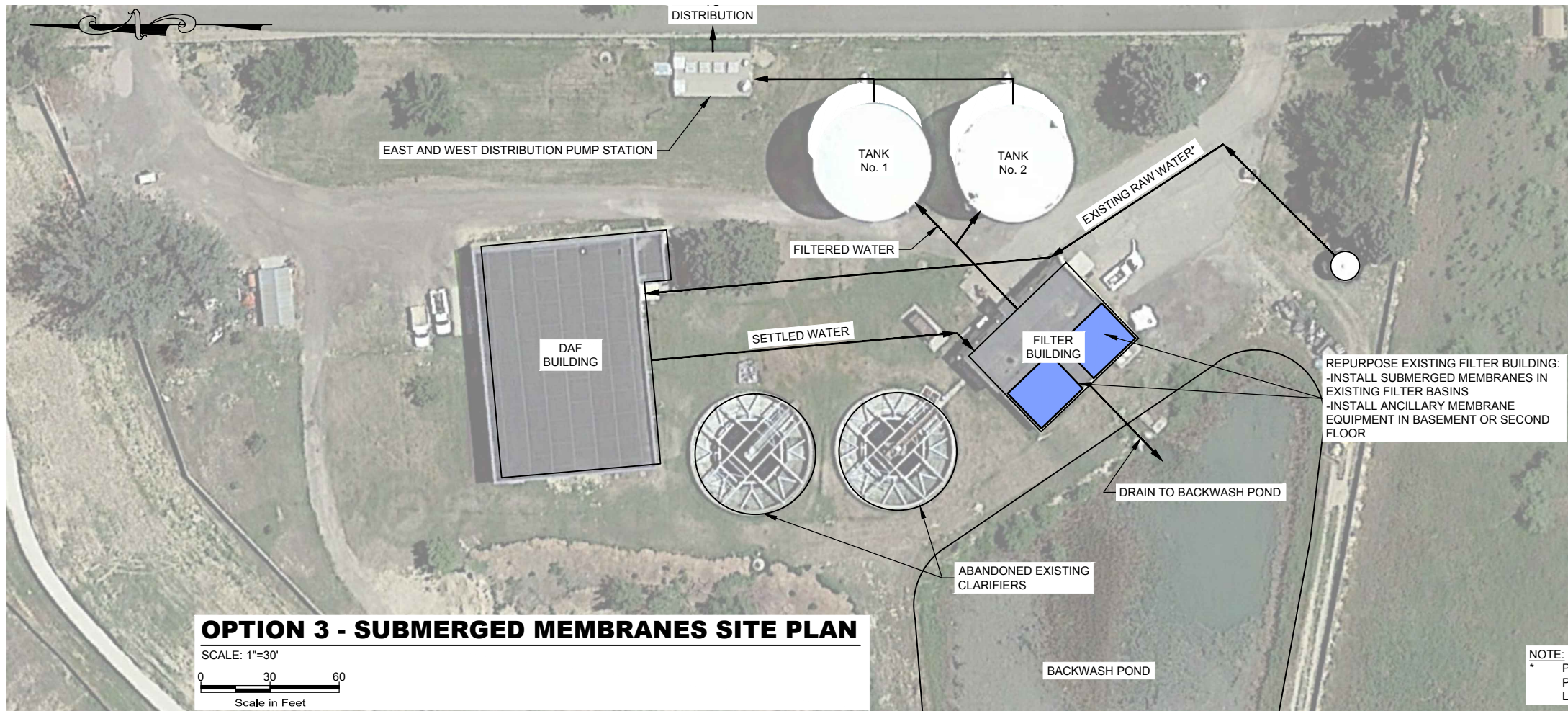
DRAWING NO.

FIGURE 2.1

SHEET OF

396

2/5/2021 C:\USERS\KEITH\AQUA ENGINEERING\001_3 003 JOHNSTOWN WTP EXPANSION - GENERAL\DRAWING\FIGURES\FIGURE 3-2.DWG



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REVISIONS				

TOWN OF JOHNSTOWN

WATER TREATMENT PLANT EXPANSION

23205 CO RD 13 JOHNSTOWN, CO 80534

MEMBRANE GRAVITY FILTER AND CERAMIC MEMBRANE SITE PLAN

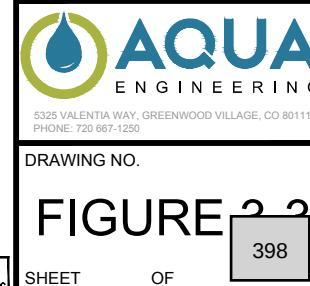
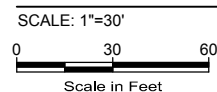
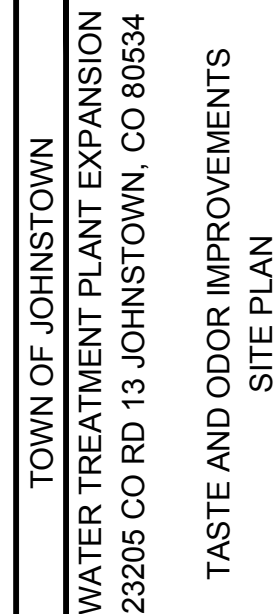
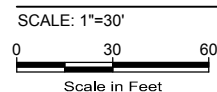
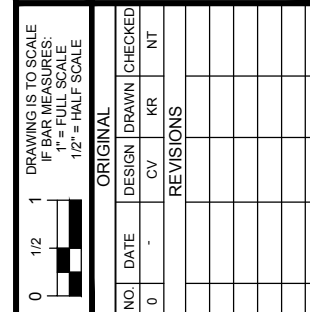
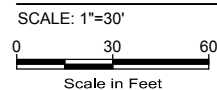


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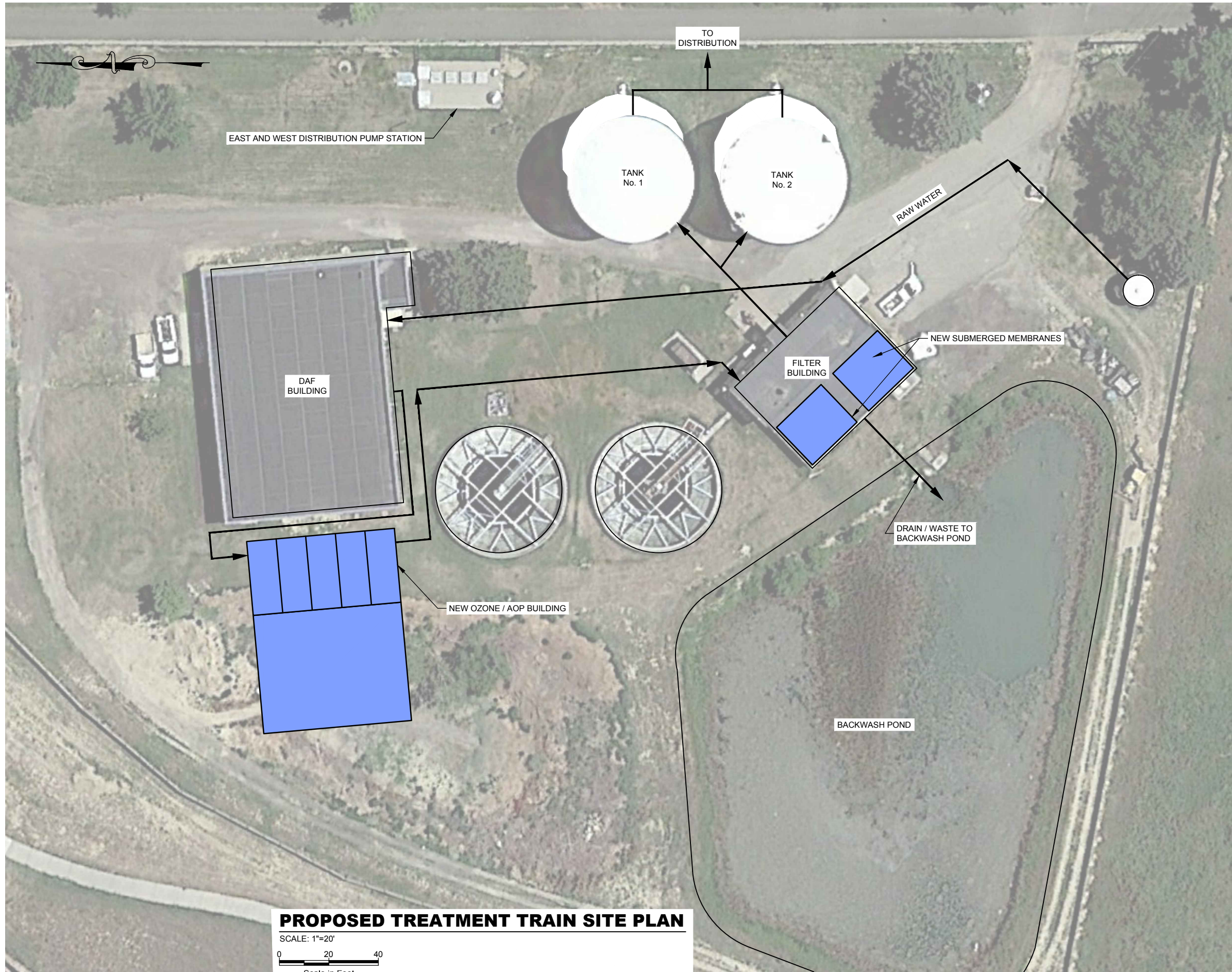
FIGURE 2.2

397

SHEET OF



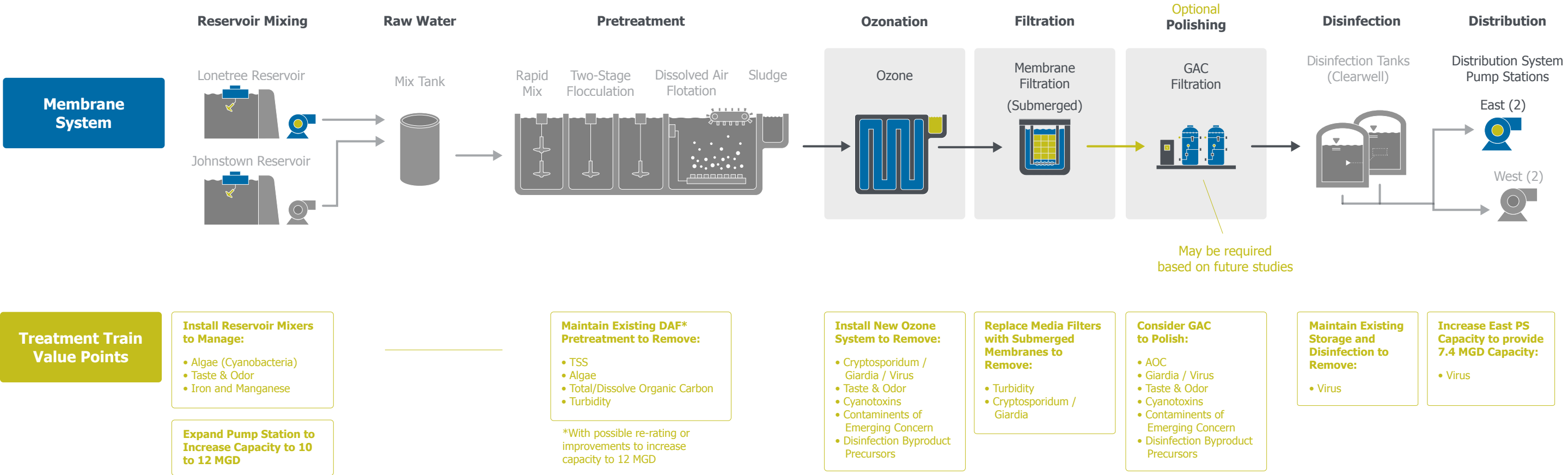
2/4/2021 C:\USERS\KEITH\AQUA ENGINEERING\001_3 003 JOHNSTOWN WTP EXPANSION - GENERAL\DRAWING\FIGURES\FIGURE 3-4.DWG

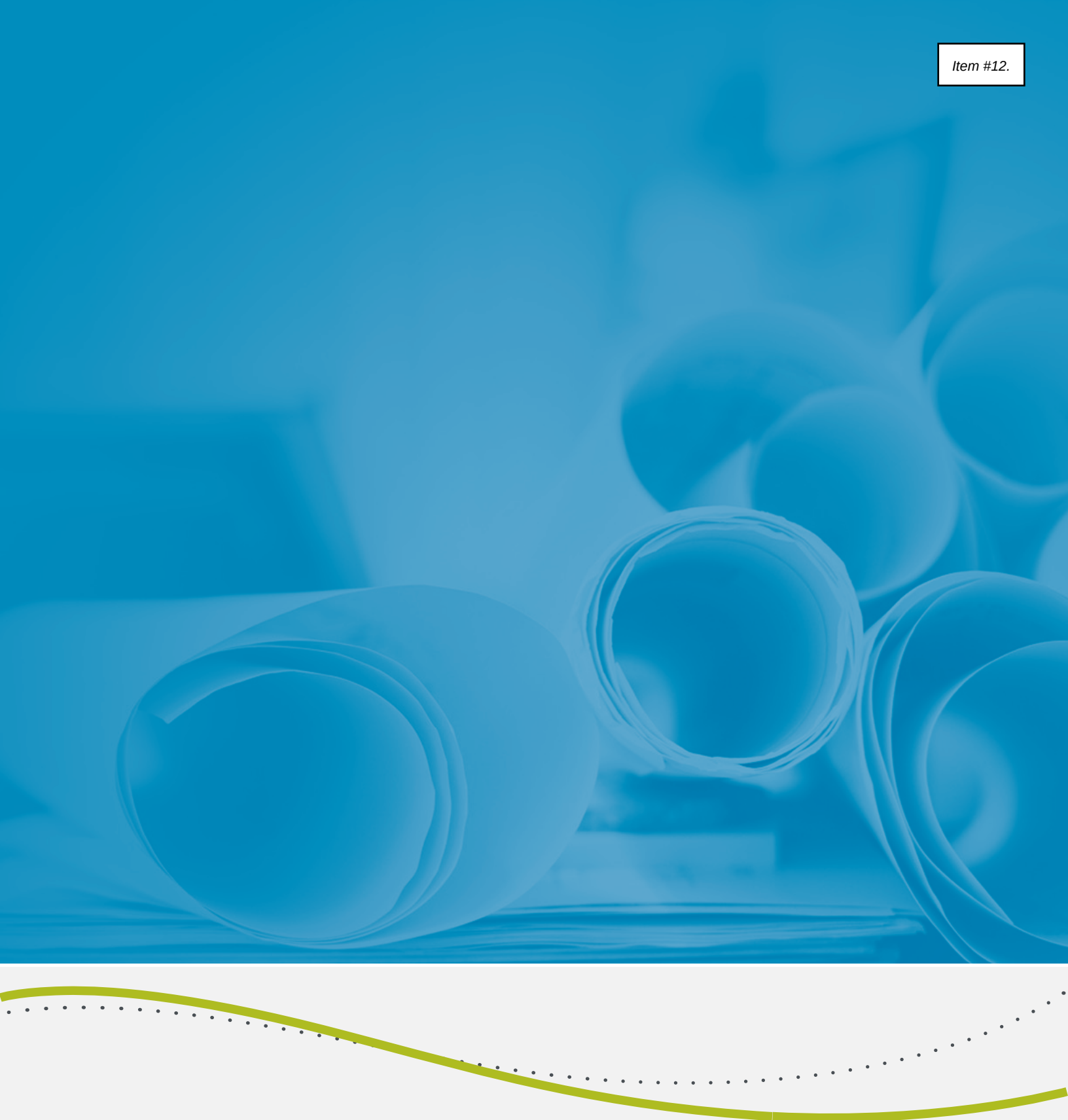


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Figure 4 - Proposed Treatment Train





Section 3

Management Approach

Collaborative Management Approach

AQUA recognizes that the most important success factor for any project is effective communication and collaboration between all stakeholders, accountability, and documentation of key decisions. This team development process must continue from the conceptual and planning stages of the project all the way through facility start-up and commissioning.

Our collaborative approach will take the Town of Johnstown from the very first meeting through the final and successful commissioning of the facility and will include the following elements:

- ✓ Clear understanding of the Project Objectives and Success Criteria.
- ✓ Development and acceptance of Project Work Plan and Critical Path Project Schedule.
- ✓ Regularly Scheduled Conference Calls between AQUA and the Town.
- ✓ Regularly Scheduled Coordination Meetings / Calls between AQUA's team members.
- ✓ Budget, Progress Tracking, and Progress Status Updates.
- ✓ Deliverable Review Meetings & Workshops with AQUA, the Town, and Ramey Environmental Compliance.



Project Management Tools

AQUA's approach to controlling project budget and schedule includes a pre-planning process to identify Project tasks, duration, and associated personnel efforts. A Work Plan will be used to establish the major tasks, deliverables, and task durations to confirm the project effort for each task. Microsoft Project will also be used to document the major components of the project and to tie the individual work tasks with the resource needs.

Cost Controls

The engineering budget for the scope of services will be tracked using our accounting software in combination with an internet cloud-based Microsoft Project Server with the work breakdown structure outlined in the Work Plan. Associated resource costs for major tasks are compared with the overall project schedule, to identify progress along with the fees incurred for the invoice period. In addition, costs will be controlled by using team members with significant experience or particular knowledge of the project to complete specific tasks.

Project Status Reporting System

The AQUA team will provide progress status updates and facilitate necessary discussions. AQUA will schedule and prepare an agenda for each meeting and administer the meeting. Meeting discussions will include a report on progress, present critical issues for discussion and decision-making. As a follow up to the meetings AQUA will prepare meeting notes.

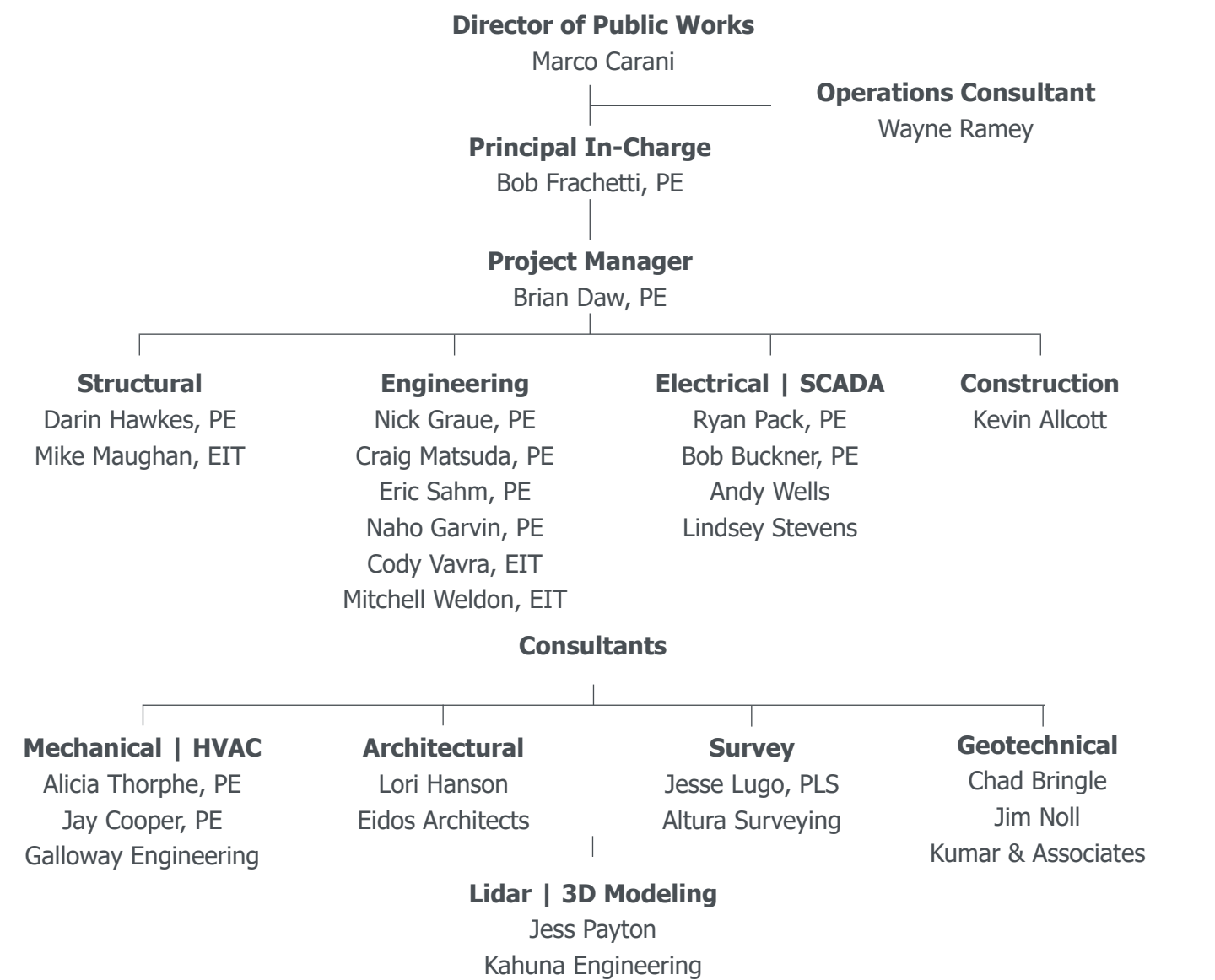


Section 4

Staff Qualifications

Your Water Treatment Team!

AQUA has assembled a team of experts and specialists to provide the Town with the right combination of skills and experience to meet the requirements and expectations associated with the Johnstown WTP Expansion project. Our proposed project team has similar experience locally and throughout the country, including upgrades and/or conventional capacity expansions. This team is readily available and prepared, fully committed, and passionate about working with the Town.



Key Personnel

Bio’s for our key personnel follow. Team Resumes are included in Appendix A for your reference.



Bob Frachetti, P.E. | Principal in Charge

Contact: bob.frachetti@aquaeng.com | 801.683.1251
Education: BS Civil and Environmental Engineering, Clarkson University, Potsdam NY
Licenses: Professional Engineer | CO, NM
Location: AQUA Colorado | 5325 S Valentia Way, Greenwood Village, CO 80111

Bob has over 29 years of project management and technical experience in virtually all areas of water and wastewater engineering including facilities planning, permitting, design, construction, facility commissioning, performance evaluations, and energy efficiency audits. His strengths include process modeling and design, technology and equipment selection, detailed design engineering, energy efficiency upgrades, hydraulics, and construction engineering and management. He also has significant experience with integrated project delivery methods including design-build, CMAR, and performance contracting.

Douglas Sullivan Acting PE W, WW & Stormwater City of Boulder 303.263.0708 Relationship: Client Reference	Daymon Johnson, Public Works Director, Town of Bennett 720.273.9528 Relationship: Client Reference	Parker Newbank III, Eagle River Water & Sanitation District 970.471.1326 Relationship: Client Reference
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Brian Daw, P.E., ENV SP | Project Manager

Contact: briandaw@gmail.com | 303.249.7510
Education: M.S Civil and Environmental Engineering, University of Colorado Boulder
B.S. Civil Engineering California Polytechnic State University, San Luis Obispo
Licenses: Professional Engineer | CO, CA

Located in Denver, Brian brings 25 years of civil engineering and project management experience with the evaluation, planning, design, and construction administration of water and wastewater treatment and infrastructure projects for municipal and industrial clients. Brian is a registered professional civil engineer specializing in potable water treatment including pretreatment, filtration and disinfection process design; residuals handling systems; chemical feed systems; and storage and distribution system modeling and conveyance design. He also has valuable experience guiding utilities with long-term planning efforts that address the variety of treatment, processes, distribution, storage, and general facility issues and improvements that small and large utilities face.

Brian’s project responsibilities regularly include leading multi-disciplined engineering teams during treatment evaluations used to identify and develop recommendations for implementing capital and operations projects.

Stephen Grooters, PE, CWP, ENV SP Engineering Services Manager City of Boulder 303.441.3242 Relationship: Client Reference	Julie Koehler, PE, ENV SP Utilities Engineering Manager City of Westminster 303.658.2178 Relationship: Client Reference	Scott O’Brien, CWP, Public Works Director Town of Dillon 970.262.3408 Relationship: Client Reference
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Darin Hawkes, P.E. | Principal | Structural Engineer

Contact: darin.hawkes@aquaeng.com | 801.683.3727
Education: B.S. Civil Engineering, University of Utah
Licenses: Professional Engineer | UT, CO
Location: AQUA Utah | 533 W 2600 S Suite 275, Bountiful, UT 84010

Mr. Hawkes’ has a vast amount of experience in various civil engineering disciplines. He specializes in difficult projects that often have space, access and/or extreme time constraints. He has developed a reputation for being able to view a problem from multiple angles to develop a solution that works for his client. His experience ranges from pumping system design, concrete storage tanks and open reservoir design, to large concrete water storage facilities and high elevation snowmaking reservoirs and dams. Many of his projects are provide as turn-key solutions for his clients with his direct involvement from conceptual design through contract administration and project close-out. As part of the AQUA team, he has lead and assisted in the completion of several System Capacity Analyses, Municipal Capital Facility Plans and large-scale Master Plans for both culinary water and wastewater.

Scott Morrison, General Manager,
Mountain Regional Water SSD
435.940.1916
Relationship: Client Reference

Ron Salvesen, City Administrator,
City of Hyrum
435.245.6033
Relationship: Client Reference

Chris Melville, City Manager
City of West Wendover
775.664.3084
Relationship: Client Reference



Nick Graue, P.E. | Senior Project Engineer

Contact: nick.graue@aquaeng.com | 801.683.3733
Education: B.S. Civil Engineering, University of Utah, 2013
Licenses: Professional Engineer | UT, CO
Location: AQUA Utah | 533 W 2600 S Suite 275, Bountiful, UT 84010

Mr. Graue is an intensely ambitious Professional Engineer and Project Manager backed by over a decade of experience in the Water and Energy sectors with a proven track record of successful project delivery and program implementation. Nick’s deep passion for natural resource conservation has steered him to managing engineering projects where technology can be leveraged to achieve a more sustainable infrastructure. Nick’s work experience involves the entire life cycle of engineering projects, from capital planning feasibility analyses and engineering design to contract administration, construction management, facility commissioning and operations consulting. Nick is particularly adept at managing multi-disciplinary projects where tight coordination between discipline leads is of paramount importance. Prior to his time with AQUA, Nick was employed by Park City, UT as Public Utilities Engineer where he managed the water system hydraulic model, GIS and asset management programs, performed water system master planning, and assisted in the planning, engineering and construction management of capital infrastructure projects.

Scott Morrison, General Manager,
Mountain Regional Water SSD
435.940.1916
Relationship: Client Reference

Ron Salvesen, City Administrator,
City of Hyrum
435.245.6033
Relationship: Client Reference

Chris Melville, City Manager
City of West Wendover
775.664.3084
Relationship: Client Reference


Ryan Pack, P.E. | Principal | Electrical/SCADA Engineer

Contact: ryan.pack@skmeng.com | 801.683.3761

Education: BS Electrical Engineering, University of Utah | MBA , Weber State University

Licenses: Professional Engineer | UT, ID, NV, WY, CO, HI, NM

Location: SKM | 533 W 2600 S Suite 25, Bountiful, UT 84010

Mr. Pack has experience with many components of SCADA and controls. He has worked with controls as simple as relay logic and PID loop controllers thru complex radio controlled SCADA systems. He has worked with many different programmable logic controllers and Operator interfaces including Allen Bradley, Control Microsystems, GE, Koyo, Modicon, Siemens, and others. He has utilized many software packages for human machine interface including Allen Bradley, GE Proficy (Intellution), Wonderware, and National Instruments Lookout. He has designed and installed new systems, replaced old systems, and expanded existing control systems. Mr. Pack has worked with many communications systems including radio, fiberoptics, ethernet, serial, and proprietary communications systems such as controlnet and profibus. He has conducted numerous path studies, for both licensed and non-licensed radio communications systems. He has designed and installed radio telemetry systems with over 50 remote sites.

Omar Hammoud
President APG Neuros
450-939-0799
Relationship: Client Reference

David Richards, Water Department
Engineer, City of Idaho Falls |
208.612.8471
Relationship: Client Reference

Matt Meyers, South Davis Sewer
District Engineer (WRR)
801.295.3469
Relationship: Client Reference


Kevin Allcott | Construction Engineer

Contact: kevin.allcott@aquaeng.com | 801.683.3724

Education: B.S. Construction Management, Boise State University

Location: AQUA Utah | 533 W 2600 S Suite 275, Bountiful, UT 84010

Mr. Allcott has over 32 years experience in the construction industry. As a construction manager for AQUA, Mr. Allcott specializes in construction oversight, contract administration, dispute resolution, and construction management. His experience has included trouble shooting, scheduling, contract dispute resolution and performance measurement systems implementation on projects ranging in value from \$2.5 to \$350 million. Mr. Allcott has developed sophisticated computer models of complex construction projects for use in project management as well as recovery plans. These models have also been used to determine cause and affect relationships between changes and increased costs. He has assisted in the defense of claims for additional compensation on several multi-million-dollar constructions projects.

Jeff Walker, Stellar J Corporation
360.518.5097
Relationship: Client Reference

Kathy Parker
208.869.7537
Relationship: Personal Reference

Mike Wright, Giza Development
801.809.3958
Relationship: Client Reference

Alicia Thorpe, PE | Sr. Mechanical Project Engineer

Contact: aliciathorpe@gallowayus.com | 970.800.3300
Education: Bachelor of Science in Architectural Engineering, University of Wyoming, 1997
Licenses: Professional Engineer | CO
Location: 5265 Ronald Reagan Blvd., Suite 210 Johnstown, CO 80524

Alicia offers more than 20 years of experience as a project manager in mechanical HVAC design. She is dedicated to building client relationships and providing the highest level of service. Alicia has worked extensively on a wide variety of projects, including commercial, municipal and educational facilities.

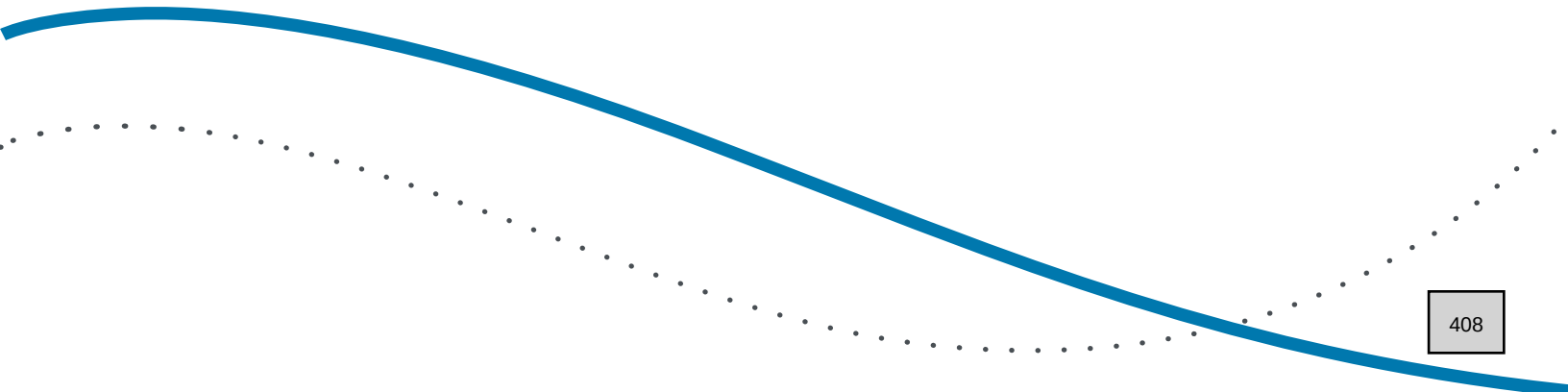
Tricia Quigley HDR, Inc. Phone: 303.565.7696 Relationship: Professional Reference	Mark Beebe HDR, Inc. Phone: 303.318.6353 Relationship: Professional Reference	Dean Smith Shears Adkins Rockmore Architects. 303.436.9551 Relationship: Professional Reference
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Jay Cooper, PE | Mechanical Project Engineer

Contact: jaycooper@gallowayus.com | 970.800.3300
Education: Bachelor of Science in Mechanical Engineering, Colorado State University, 2015
Licenses: Professional Engineer | CO
Location: 5265 Ronald Reagan Blvd., Suite 210 Johnstown, CO 80524

Jay offers five years of experience in mechanical engineering. Jay is a results-driven engineer who uses his knowledge of the building construction process for the benefit of all project stakeholders. He has efficiently designed mechanical and plumbing systems for a wide variety of clients, with a strong base of knowledge in multifamily, commercial and municipal projects. Jay has experience coordinating with internal and external team members to ensure a successful project.

Don Watkins Belford Watkins Group Phone: 970.212.1243 Relationship: Professional Reference	James Ohlson r4 Architects Phone: 970.224.0630. Relationship: Professional Reference	Kristin Tresner Shears Adkins Rockmore Architects Phone: 303.436.9551 Relationship: Professional Reference
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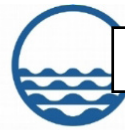


Section 5

Project Related Experience

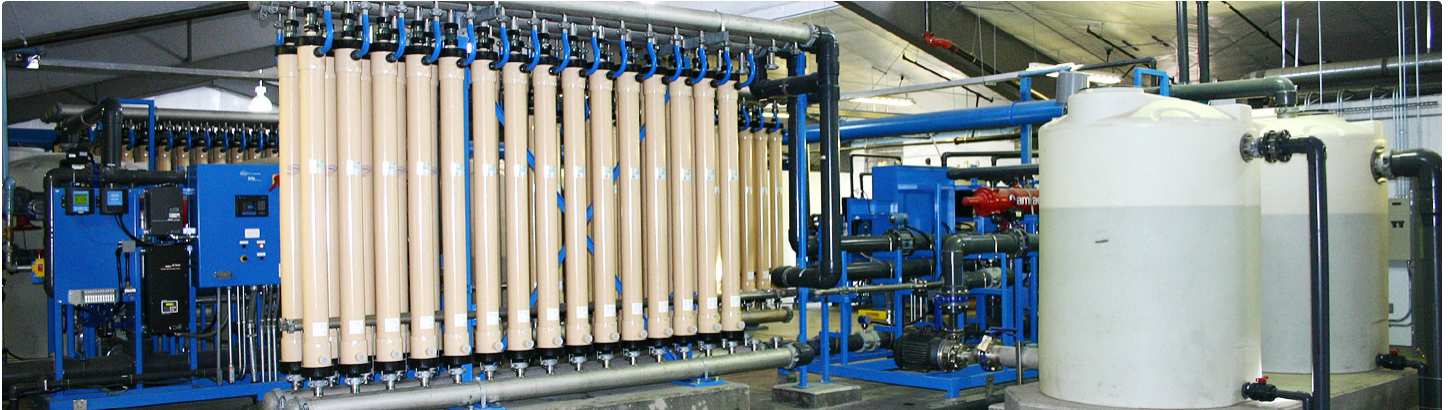
Mountain Regional Water District

Signal Hill Water Treatment Plant & Lost Creek Pipeline



Item #12.

MOUNTAIN REGIONAL WATER
SPECIAL SERVICE DISTRICT



Client: Mountain Regional Water Special Service District
Reference: Scott Morrison, General Manager
Contact: 435.940.1916 | E: scottm@mtregional.org
Location: Park City, Utah
Dates: 2002 - 2011
Capacity: 3MDG expandable to 6 MGD
Cost: \$141K (Design) | \$1.4M (Construction)
Firm: AQUA Engineering
Key Team: Scott Roger, PE, Darin Hawkes, PE, Ryan Pack, PE

- ✓ ACEC Award Winning Project
- ✓ One of the first Microfiltration Plants in Utah
- ✓ Design/Build
- ✓ 5.2 Miles of 24" Pipe
- ✓ Riverbank Infiltration System
- ✓ New Telemetry | SCADA

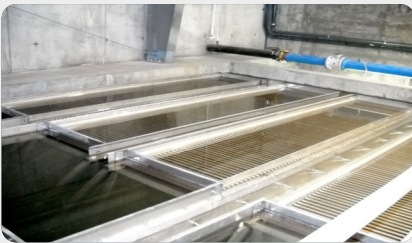


In 2002, AQUA Engineering was hired by Mountain Regional Water Special Services District (MRWSSD) to design the first phase (3 million gallon a day) of a 6 million gallon a day water treatment facility and to investigate options to access water from the Weber River. An alignment in Lost Creek Canyon was chosen for the pipeline, thus giving the project its name. Signal Hill in the Promontory Ranches Development was chosen as the site for the water treatment plant. Construction started in 2003 and the water plant received operational approval from the Utah Division of Drinking Water in February of 2005, marking the end of the \$14 million dollar project. AQUA Engineering teamed with Ames Construction of Salt Lake City on the design-build project which features the first riverbank, groundwater collection system in Utah. It includes a large, high-flow, high-pressure booster pump station with pumping capacity of over 3,000 gpm spread between six 350 horsepower pumps. The pump station was designed with expansion capabilities and has been upgraded since the initial construction to over 10,000 gpm to supply raw water to both MRWSSD and Park City's Quinn's Junction water treatment facility. A 5.2 mile, 24-inch diameter mortar lined, and coated-welded steel, ductile iron, and high-density poly-ethylene transmission pipeline connects the pump station to the water treatment facility. A 1,000-foot rise in elevation occurs along the alignment, which

Signal Hill Water Treatment Plant & Lost Creek Pipeline

passes through sensitive environmental areas, two highway crossings and one river crossing. The terminal reservoir was designed as a low-hazard impoundment and holds 40 acre-feet of water. The treatment plant is one of the first microfiltration membrane plants in the State of Utah and currently treats 4 million gallons of water per day. The riverbank infiltration system developed 1,480 acre-feet of water but has been replaced with a concrete surface diversion structure to supply river water to the plant.

In 2009 AQUA was hired to help the district expand the plant from its equipped capacity of 3 MGD to 4 MGD and to add granular activated carbon (GAC) vessels. The GAC vessels were implemented to control taste and color issues associated with tannic acids produced by decomposition of leaves and foliage entering the river during the change of seasons. The expansion was completed inside a new building addition to the primary structure. The initial design accounted for expansion of the primary clarification of the source water by implementing basins to which lamella plate clarifiers were added along with chemical dosing capabilities for primary treatment. Along with the addition of the clarifiers, sludge settling, collection, aerated storage and dewatering systems were added to the facility to manage and dispose of associated sludge.



Scope Summary

- ✓ Master planning
- ✓ Funding assistance
- ✓ Project Permitting
 - Utah DEQ (Division of Drinking Water & Division of Water Quality)
 - Army Corps of Engineers (Nationwide Permit Program)
 - Utah Stream Alterations
 - State Historic Preservation Organization (SHPO)
 - Utah Department of Transportation
- ✓ County permitting and approvals
- ✓ Construction Management & Observation
- ✓ Detailed design
- ✓ Bidding services (2009 Expansion Project)
- ✓ SCADA & Telemetry System
- ✓ Start-up services

Hooper Water Improvement District

Hooper Water Treatment Plant



Item #12.



The district previously drilled a well that produced about 2700 gpm but the customers complained of taste and odor issues. AQUA worked with the district and their engineer to identify the primary culprit for the taste and odor as iron and manganese. A Pureflow pilot was operated onsite to determine the treatability of the water. Chlorine was used to oxidize the iron and manganese and pressure filtration vessels were installed to filter the water. A backwash tank with a water recovery system was installed. The backwash water allows the iron and manganese settle to the bottom of the tank and the water on the top of the tank is fed back through the treatment system so there is a 99% recovery of the water pumped from the well. The solids are disposed of through the sanitary sewer system. AQUA's service included equipment procurement, bidding document preparation, including technical specifications, and drawings. AQUA also conducted limited construction management for the project.

Client: Hooper Water Improvement District
Reference: Scott Christiansen, District Manager
Contact: P: 801.985.1991 | E: scottsc@hooperwater.net
Location: Hooper, Utah
Dates: 2014 - 2020 (Design/Const. Mngmt)
2019 - 2020 (Construction)
Capacity ~4 MGD
Cost: \$205K (Design) | \$2.2M (Construction)
Firm: AQUA Engineering
Key Team: Brad Rasmussen, PE, Naho Garvin, PE, Lindsey Stevens

- ✓ Detailed design
- ✓ Bidding services
- ✓ Construction services
- ✓ Telemetry / SCADA maintenance





In 2008, AQUA Engineering consulted with Blanding City to design a 3 million gallon a day microfiltration water treatment plant and a new transmission line to the plant from a storage reservoir which facilitated gravity flow operation. In addition to the treatment plant and pipeline, a brand-new Telemetry and SCADA system was designed and installed throughout the City to connect the city's wells, flow monitoring, booster pumps, storage tanks, and irrigation pump system to the treatment plant system. The new treatment plant is located adjacent to the existing facility, directly north of Blanding City. Construction started in 2009 and the treatment plant was brought online in April of 2010, completing the \$2.6 million dollar project.

The treatment plant is one of few microfiltration treatment plants in the State of Utah, which treats 3 million gallons a day, and is easily expandable to treat 4 million gallons a day. No pumping is necessary to move water through the treatment plant. A new 16-inch transmission pipe supplies settled reservoir water via gravity flow to the new treatment plant. The treated effluent is stored offsite in a 1-million-gallon storage tank which feeds Blanding City.

Client: City of Blanding
Reference: Terry Ekker, City Engineer
Contact: P: 435.678.2791 x 3487 | E: tekker@blanding-ut.gov
Location: Blanding, Utah
Dates: 2009 - 2010 (Design) | 2009 - 2010 (Construction)
Capacity: 3 MGD
Cost: \$162K (Design) | \$2.6M (Construction)
Firm: AQUA Engineering
Key Team: Scott Rogers, PE, Darin Hawkes, PE

- | | |
|----------------------|-------------------------|
| ✓ Master planning | ✓ Start-up services |
| ✓ Funding assistance | ✓ Construction services |
| ✓ Detailed design | ✓ Telemetry / SCADA |
| ✓ Bidding services | maintenance |



City of Boulder

Betasso Water Treatment Facility Capital Improvements



Mr. Daw was responsible for developing and coordinating a multi-disciplined engineering assessment of the City's existing 40-mgd conventional surface water treatment plant and developing decision-support analysis to evaluate options to increase pretreatment capacity, update or replace aging filter equipment and media, implement residuals handling (dewatering) improvements, increase reliability and redundancy of the facility's electrical service and electrical distribution system, and migrate existing equipment from motor control centers exceeding their useful lives. A decision-support matrix was used to prioritize capital and maintenance improvements including new pretreatment basins using high-rate clarification modules; filtration upgrades including replacing existing filter multimedia with dual media, new surface wash systems, new filter valves and actuators, and new backwash troughs; and the implementation of a residuals dewatering system using a combined gravity belt thickener and belt filter press to achieve 16% to 18% solids and reduce the sludge hauling requirements for the City's operations. Brian led the multi-disciplined preliminary design, final design, bidding and construction administration of the \$32M project that was successfully completed in 2019 with <3% change orders and 10% under the engineering budget. Additional services were completed using the remaining budget to complete a 3D model of the entire facility and a CT-tracer study used to identify disinfection limitations in the WTP's aboveground steel clearwells/storage tanks.

Client:	City of Boulder
Contact:	Stephen Grooters, PE, Utilities Engineering Services Manager P: 303.441.3242 Jon Stoddard, Water Treatment Superintendent P: 720. 564.2303
Dates:	2014 - 2019
Capacity:	40 MGD
Location:	Boulder, Colorado
Design Cost:	\$2.4M
Construction Cost:	\$30M

City of Westminster

Semper High-Service Pump Station Reliability and Redundancy Improvements



WESTMINSTER
COLORADO



Mr. Daw was responsible for evaluating, developing and coordinating multi-disciplined assessment and design of electrical system and pumping reliability improvements for the 68-mgd Semper HSPS. The project includes hydraulic transient analysis and design of a new 32,000-gallon surge tank, conversion of a dual 2400V/480V onsite distribution system to 480V, replacing 2400V 600-hp pump motors, a new 1.75MW generator, and a new 36-inch discharge header as a secondary connection to the City's distribution system. Additional scope added by the client includes replacing VFDs, pumps, and critical valves at the Northwest and Reclaimed WTFs.

Client:	City of Westminster
Contact:	Julie Koehler, PE, Utilities Engineering Manager P: 303. 658.2178 Tom Scribner, Water Treatment Superintendent P: 303. 430.2447
Dates:	2017 - 2019
Capacity:	64 MGD
Location:	Boulder, Colorado
Design Cost:	\$1.27M
Construction Cost:	\$14M

SECTION 5 - PROJECT RELATED EXPERIENCE

Extensive Project Experience Relative to Your Needs Municipal & District Consulting Services

Each city, county, and service district has their own unique challenges as it strives to meet the needs of its rate payers. Our goal is to learn and become familiar with these challenges and to find solutions that best fit your circumstances and operations. We listen to your ideas and needs instead of imposing our solutions on you. AQUA has established a reputation for designing municipal infrastructure and facilities that are maintenance friendly and cost effective.

Services Include:

- | | | |
|----------------------------------|---------------------------------|----------------------------------|
| ✓ Mapping & Modeling Utilities | ✓ Transfer Facilities | ✓ Storm Drainage Systems |
| ✓ Master Planning | ✓ Capital Facility Planning and | ✓ Sewer Collection |
| ✓ Road Systems Design | Impact Fee Analysis | ✓ Water Distribution and Storage |
| ✓ Construction Standards | ✓ Subdivision & Land | ✓ Grants and Loans Applications |
| Development | Development | |
| ✓ Construction Specifications | ✓ Environmental Compliance | |
| ✓ Water Resources | ✓ Parks & Recreation | |
| ✓ Solid Waste Disposal Landfills | ✓ Streets & Boulevards | |

Hyrum City

Ron Salvesen, City Administrator, Hyrum City
P: 435.245.6033 | E: rsalvesen@hyrumcity.com

AQUA Engineering serves as the contract City Engineer for Hyrum City, Utah. As part of their responsibilities they have designed numerous improvements and additions to the City's water distribution, source and storage systems, as well as the City's wastewater collection system and treatment works. They have updated 1,000-3,000 feet of pipe each year since 2006, replacing outdated or undersized piping with 8" or larger pipe to meet State size, material, flow and pressure requirements. The 2011 Water Improvement Project included 3100 feet of 8-inch to 14-inch mainline, cased installation in UDOT right of way, coordination to avoid construction delays and traffic interruptions, as well as the replacement of all the services. It also included 2 PRV Stations. AQUA has designed numerous pump station for both potable, irrigation and wastewater conveyance including a 2100 gpm facility to pump treated wastewater effluent into the pressurized secondary irrigation system. This facility was design and permitted by AQUA.

Grantsville City

James Waltz, Public Works Director | Grantsville City
P: 435.884.0627 | E: jwaltz@grantsvilleut.gov

AQUA Engineering serves as the contract City Engineer for Grantsville City, Utah. As part of its duties AQUA has been responsible for the design of numerous improvements and additions to the City's water distribution system, streets and drainage network, and several municipal facility projects. AQUA has helped the City to design and construct thousands of feet of waterline from 8-inch to 16-inch, multiple PRVs, booster pump stations, groundwater development projects and disinfection facilities. In addition to the dozens of projects that AQUA has designed for the City, we have also implemented standard details and specifications for all projects occurring in City limits, and have assisted the City with review, approval, inspection of projects ranging from single family homes to multi-phase subdivisions and commercial business parks.

City of West Wendover

Chris Melville, City Manager | City of West Wendover
P: 775.664.3081 | E: cmelville@westwendovercity.com

AQUA Engineering serves as the contract city engineer for The City of West Wendover. AQUA reviews and inspects all new subdivision and site developments, improvement of existing developments, and also ensures compliance with Pollution Discharge Elimination System storm water and erosion control requirements. Our efforts also include project inspection and QA/QC as well as coordinating and working with planning commissions, city councils, and associated staff to make sure projects are designed and constructed correctly.

Elk Ridge City

David Jean, Public Works Director | Elk Ridge City
P: 801-423-2300 Ext. 5 | E: davidj@elkridgecity.org

AQUA Engineering serves as the contract city engineer for Elk Ridge City. AQUA reviews and inspects all new subdivision and site developments, improvement of existing developments, and also ensures compliance with Utah Pollution Discharge Elimination System storm water and erosion control requirements. Our efforts also include project inspection and QA/QC as well as coordinating and working with planning commissions, city councils, and associated staff to make sure projects are designed and constructed correctly. In addition to its' typical City Engineering duties, AQUA has helped Elk Ridge to design several projects ranging from water pipeline replacements, PRVs and booster pump stations, streets improvements and municipal facilities.

Mountain Regional Water District

Scott Morrison, General Manager | Mountain Regional
P: 435-645-2555

AQUA Engineering serves as contract District Engineer for Mountain Regional Water District. As the District Engineer, AQUA is responsible for assisting the district with water system master planning, design engineering and construction management services for various water system improvements projects. AQUA has completed several water system master plans and capital facility plans for the District as well as designed multiple pump stations, PRVs, storage tanks and an energy recovery facility and the district's flagship water treatment facility. Notable projects include the Signal Hill Water Treatment Plant, a 4MGD micro-filtration membrane plant; the Lost Canyon Booster Pump Station, a 4,000+ horsepower pumping facility that conveys 7,000 Acre-Feet of raw water to through 5 miles of high pressure welded steel pipe to the Snyderville Basin for regional water use by several water service districts including MRW; and the Silver Creek Tank and Pump Station which assists the District with its' sustainability goals by capturing the energy of water moving downhill through the use of micro-turbine, offsetting the District's energy costs by \$300,000 annually.

Emigration Improvement District

Eric Hawkes| Emigration Improvement District
P: 801-243-5741 | E: eric@ecid.org

AQUA Engineering has worked with Emigration Improvement District (EID) on various water related projects to improve water service and provide fire protection to the residents of Emigration Canyon. AQUA performed the initial water system evaluation and modeling followed by design and project management for the installation of 22,600 lineal feet of 8" water main along the main canyon road including fire hydrants, pressure reducing stations, connection to existing line, service laterals, and asphalt patching. Once this project was completed, the water model for the system was updated and calibrated based on actual fire flow tests at several fire hydrant locations. In addition, a fire hydrant map was generated for the Salt Lake County UFA.

Firm Experience Summary

- ✓ Over 200 Water & Wastewater Treatment Facilities
- ✓ National & International Experience
- ✓ Proven Record of Innovation, Efficiency, and Resource Recovery
- ✓ Reputation and successful history of efficient, cost-effective, and innovative projects
- ✓ Efficiency + Experience = low overhead, we can provide this high level of service and experience at very competitive billing rates.

Below is a select summary of our treatment plant clients by State, many with multiple projects:

Arizona

- Antelope Point Marina Wastewater Treatment Plant
- Big Park Water Reclamation Plant
- Black Canyon Arsenic WTP (3)
- Bullhead City Wastewater Treatment Plant
- Chino Valley Water Reclamation Facility
- Eagar Wastewater Lagoons
- Inscription Canyon Ranch Water Reclamation Facility
- Katherine Heights Wastewater Treatment System
- Page Wastewater Treatment Plant
- Parker Water Reclamation Plant
- Prescott City Airport Wastewater Treatment Plant
- Prescott Valley Water Reclamation Facility
- Wahweap Marina Wastewater Facility

California

- Beaumont Water Reclamation Facility
- California City Wastewater Treatment Plant
- Corona Water Reclamation Facility
- Heber Water Reclamation Facility
- Imperial Valley Water Reclamation Facility
- Las Gallinas Water Reclamation Facility
- Mesquite Lakes Water Reclamation
- Morongo Wastewater Treatment Plant
- Western Riverside County Regional Wastewater Authority
- Willow Creek Wastewater Treatment Facility

Canada

- Kamloops Wastewater Treatment Plant

Colorado

*Bob Frachetti, P.E. Colorado Principal Experience

- Bayfield Water Reclamation Facility
- Gem Village Wastewater Treatment Lagoons
- Avon Wastewater Treatment Facility Blower Control Project Eagle River Water & Sanitation District*
- Boulder County / Eldorado Springs Wastewater System *
- Briggsdale Water Storage Tank and Booster Pump Station*
- Broomfield Wastewater Treatment Facility Odor Control Assessment Study/Design*
- City of Boulder IBM Lift Station*
- City of Idaho Springs Wastewater Treatment Facility*
- Clearwater Water Reclamation Facility*
- Colorado Springs Utilities (CSU) Biogas Utilization Study
- Columbine Lake Water District*
- Dukes West MHP Water System Improvements*
- Gateway Village Water Storage Tank and Booster Pump Station*
- Henderson Mill Water Treatment Plant*
- Lake Forrest Mutual Water Company*
- Lookout Mountain Water District Membrane Filtration Upgrade*
- Mt Crested Butte Wastewater Treatment Facility Comprehensive Performance Evaluation (CPE)*
- Nederland Wastewater Treatment Facility*
- Plum Creek Wastewater Treatment Facility*
- Sludge Management Plan, 201 Facility Plan

Amendment Madison Metropolitan Sewerage District*

- Squaw Creek Wastewater Treatment Facility
- Eagle River Water and Sanitation District*
- St. Vrain Sanitation District Wastewater Treatment Facility*
- Tabernash Meadows Water & Sanitation District, Ground Water Well Permitting*
- Tabernash Meadows Water & Sanitation District Biosolids Handling Improvements*
- Town of Ault Wastewater Treatment Facility*
- Town of Bennett Wastewater Treatment Facility*
- Town of Bennett Water System Improvements*
- Town of Crested Butte Wastewater Treatment Facility*
- Town of Erie Wastewater Treatment Facility Facilities Plan and Comprehensive Performance Evaluation (CPE)*
- Town of Georgetown Wastewater Treatment Facility*
- Town of Georgetown Water Treatment Facility Improvements*
- Town of Kersey Wastewater Treatment Facility*
- Town of Lyons Wastewater Treatment Facility*
- Tri-Lakes Wastewater Treatment Facility*
- United Water & Sanitation District / Brannan Pit Raw Water Pump Station*
- Ute Lake Ranch Wastewater Reclamation Facility*
- Vail Wastewater Treatment Facility. Instrumentation Upgrades, Eagle River Water & Sanitation District*
- West Jefferson County Wastewater Treatment Facility*
- Wolf Creek Ski Area Wastewater Treatment Facility*

Hawaii

- Fort Shafter Water Reclamation Facility
- Pearl Harbor Water Reclamation
- Puako Water Reclamation

Idaho

- Cliffs Water Reclamation Facility Boise
- Franklin City Wastewater Treatment Plant
- Hailey Wastewater Treatment Plants
- Jerome City Wastewater Treatment Plant
- Jerome Pretreatment Facility
- Magic Valley Potato Process Water Treatment Facilities

(2)

- City Wastewater Treatment Plant
- Rexburg Wastewater Treatment Facility

Missouri

- Guys Foods Process Water Treatment Plant

New Mexico

- Edgewood Water Reclamation Facility
- Gallup Wastewater Treatment Plant
- Moriarty Wastewater Plant
- PaaKo Water Reclamation Facility
- Pinion Hills Wastewater Plant
- San Felipe Water Reclamation Facility
- Santa Rosa Wastewater Plant
- Springer Wastewater Plant
- Taos Wastewater Plant
- Tucumcari Wastewater Plant

Nevada

- Elko Wastewater Treatment Plant
- West Wendover Water Reclamation Facility

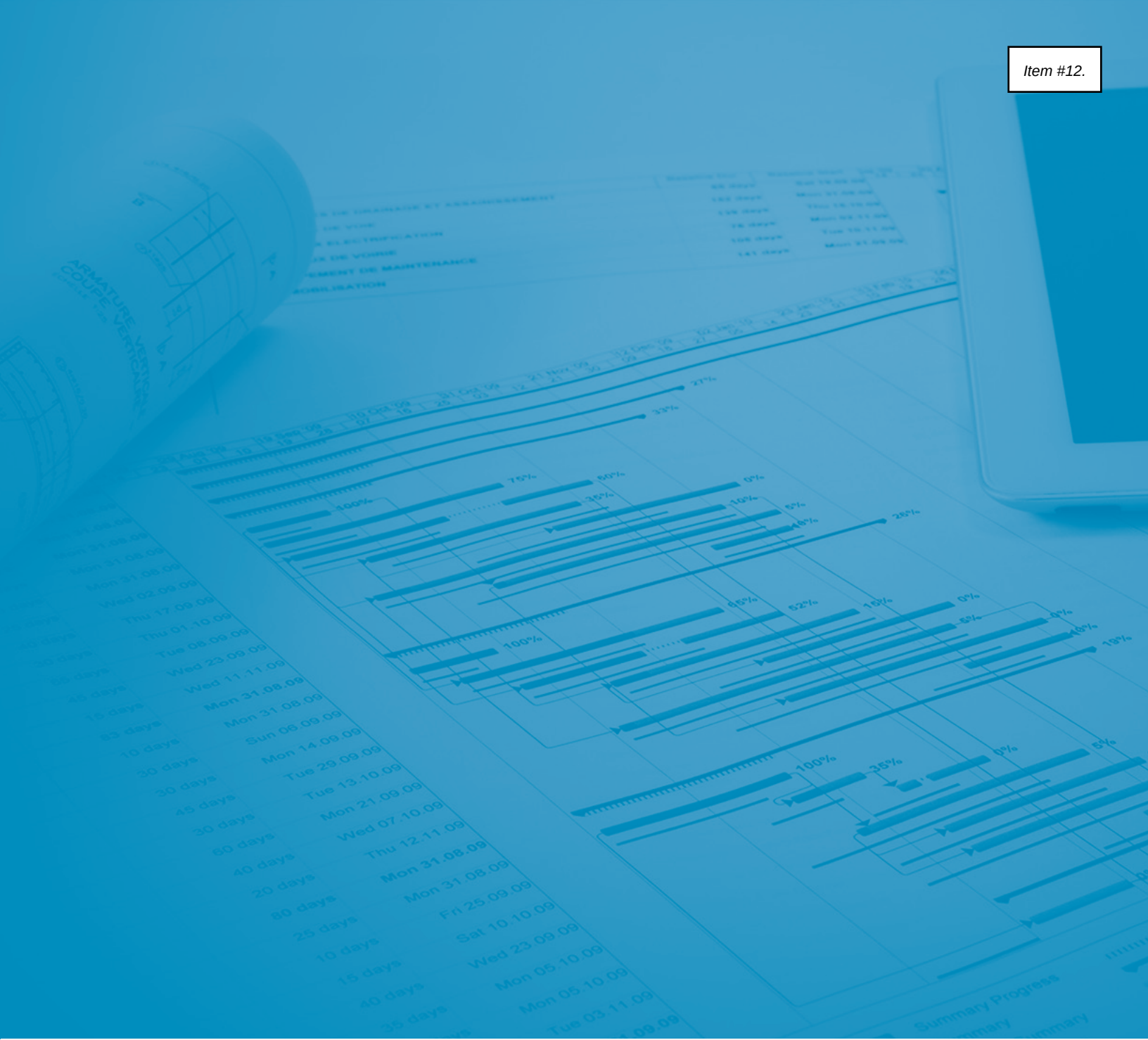
Utah

- Alta Water Treatment Plant
- Amangiri Wastewater Treatment Plant
- American Gourmet Process Water Treatment Plant
- Ananyu Water Reclamation Facility
- Ash Creek Wastewater Treatment Facility
- Bench Lake Water Reclamation Facility
- Bison Creek Water Reclamation Facility
- Blanding Water Treatment Plant
- Blue Mountain Energy Recover
- Bonneville Lime Slaking Facility
- Boundary Springs Water Treatment Facility
- Bountiful City Water Treatment Facility
- Brigham City Wastewater Treatment
- Bristlecone Water Reclamation Facility
- Brown's Canyon Water Treatment Plant
- Canyonlands by Night Water Plant
- Cedar City Wastewater Treatment Plant
- Central Davis County Sewer District Wastewater Treatment Plant

- Clover Club (Borden) Foods Process Water Treatment Facility
- Confluence Park Wastewater Treatment Plant
- Dameron Valley Wastewater Treatment Facility
- Dannon Yogurt Process Water Treatment Plant
- Day Break Water Treatment Facility
- Diamond Ranch Water & Wastewater Facility
- Diamond Ranches Wastewater Treatment Facility
- Diamond Ridges Wastewater Treatment Plant
- Driggs Wastewater Treatment Facility
- E.A. Miller Wastewater Treatment Plant
- East Zion's Special Service District – Wastewater Treatment Facility
- Elwood Wastewater Treatment
- Grantsville Wastewater Treatment Lagoons
- Green Hills Water Treatment
- H.C. Brill Foods Plant
- Heber Valley Water Reclamation Facility
- Hill Air Force Base Process Water Treatment Facility
- Hyclone Labs Pretreatment Facility
- Hyrum Wastewater Treatment Plant
- Jordanelle Water Treatment Plant
- Kennecott Mine Water Neutralization Treatment Facility
- Kennecott Refinery Wastewater Treatment Plant
- LDS Cannery Wastewater Treatment Plant
- Leeds Regional Water Reclamation Facility
- Lost Creek Water Treatment Project
- Magna Water Reclamation Facility
- Malt-O-Meal Pretreatment Facility
- Mancos Wastewater Facility
- Morgan Wastewater Treatment Facility
- Moroni Wastewater Treatment Plant
- Mosaic Water Reclamation Facility
- Mountain Green Wastewater Treatment Plant
- Nestle Pretreatment Facility
- Oakley Water Reclamation Facility
- Orem Wastewater Treatment Plant
- Pacific States Cast Iron Water Treatment
- Payson City Wastewater Treatment Plant
- Provo Wastewater Treatment
- Rainbow Ranch Water Treatment Facility Capitol Reef National Park
- Richmond Water Reclamation Facility
- Ruth's Diner Wastewater Treatment Plant – Emigration Canyon
- Salem Wastewater Treatment Lagoons
- Salt Lake City Airport Oil Skimming
- Salt Lake City Wastewater Treatment Plant
- Salt Lake Service Area #3 Water Treatment Plant
- Santaquin Wastewater Treatment Facility
- Shepherd's Egg Farm
- Silver Pointe Wastewater Plant
- Smith's Food King Dairy and Bakery Process Water Treatment Facility
- South Davis Co. Sewer Improvement Dist. North Wastewater Treatment Plant
- South Davis Co. Sewer Improvement Dist. South Wastewater Treatment Plant
- Spanish Fork Wastewater Treatment Plant
- Spring Creek Treatment Plant
- Springdale Wastewater Treatment Facility
- Springville Wastewater Treatment Facility
- Stansbury Wastewater Treatment Facility
- Stouffer Foods Process Water Treatment Plant
- Tooele Army Dept Process Water Treatment Plant
- Tooele Valley Water Reclamation Facility
- Tooele Wastewater Treatment Facility
- Tremonton Wastewater Treatment
- Tuhaye Ranch Wastewater Treatment
- United Park City Mines Water Treatment Facility
- Wasatch Resource Recovery Facility
- Wendover Wastewater Treatment Facility
- Wendover Water Treatment Plant
- West Point Dairy Wastewater Treatment Plant
- Western Quality Dairy
- Western Zirconium Process Wastewater Treatment
- Wolf Creek Water Reclamation Facility

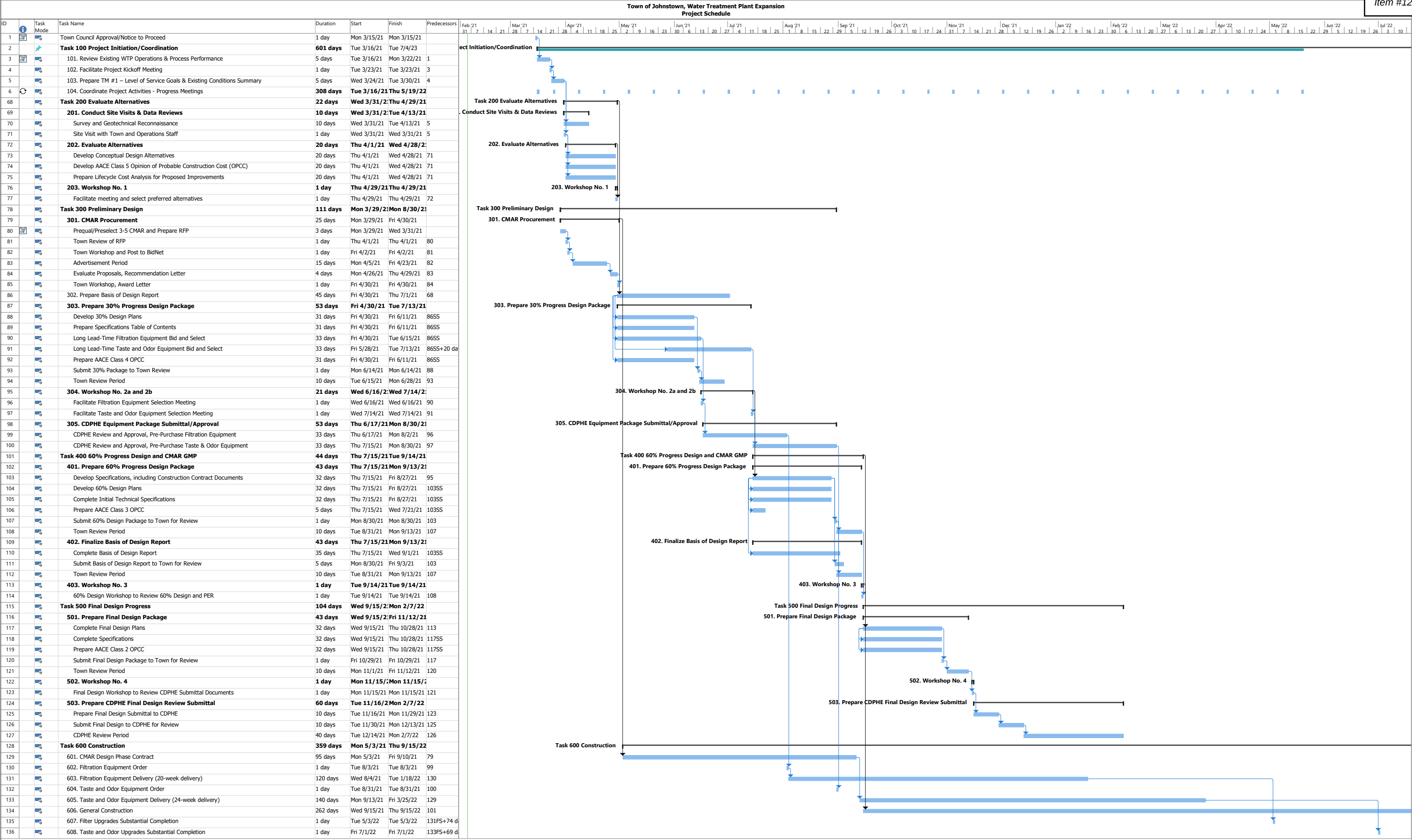
Wyoming

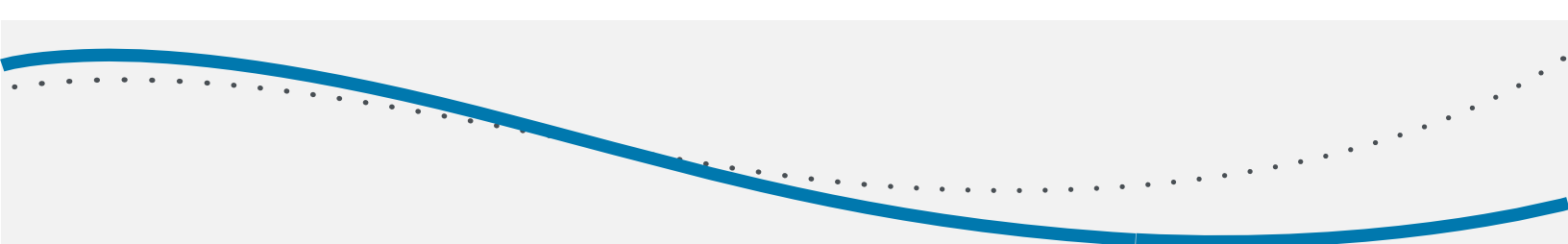
- Jona Well Field Water Treatment Plant



Section 6

Project Schedule





Appendix A | Resumes



Brian C. Daw. P.E | Project Manager

Phone: 801.683.3746 | **Email:** briandaw@gmail.com

Located in Denver, Brian brings 25 years of civil engineering and project management experience with the evaluation, planning, design, and construction administration of water and wastewater treatment and infrastructure projects for municipal and industrial clients. Brian is a registered professional civil engineer specializing in potable water treatment including pretreatment, filtration and disinfection process design; residuals handling systems; chemical feed systems; and storage and distribution system modeling and conveyance design. He also has valuable experience guiding utilities with long-term planning efforts that address the variety of treatment, processes, distribution, storage, and general facility issues and improvements that small and large utilities face.

Brian's project responsibilities regularly include leading multi-disciplined engineering teams during treatment evaluations used to identify and develop recommendations for implementing capital and operations projects. He also has a proven track record of maintaining transparency and well-documented records throughout the project lifecycle to facilitate decision-making and stakeholder records.

As Project Manager, Brian will diligently work with the Town to evaluate treatment options and related costs to assist you with identifying preferred approaches that meet the your operational and capital cost goals.

Project Experience

Project Manager | Betasso Water Treatment Facility Capital Improvements, City of Boulder (CO)

Brian was responsible for developing and coordinating a multi-disciplined engineering assessment of the City's existing 40-mgd conventional surface water treatment plant and developing decision-support analysis to evaluate options to increase pretreatment capacity, update or replace aging filter equipment and media, implement residuals handling (dewatering) improvements, increase reliability and redundancy of the facility's electrical service and electrical distribution system, and migrate existing equipment from motor control centers exceeding their useful lives. A decision-support matrix was used to prioritize capital and maintenance improvements including new pretreatment basins using high-rate clarification modules; filtration upgrades including replacing existing filter multimedia with dual media, new surface wash systems, new filter valves and actuators, and new backwash troughs; and the implementation of a residuals dewatering system using a combined gravity belt thickener and belt filter press to achieve 16% to 18% solids and reduce the sludge hauling requirements for the City's operations. Brian led the multi-disciplined preliminary design, final design, bidding and construction administration of the \$32M project that was successfully completed in 2019 with <3% change orders and 10% under the engineering budget. Additional services were completed using the remaining budget to complete a 3D model of the entire facility and a CT-tracer study used to identify disinfection limitations in the WTP's aboveground steel clearwells/storage tanks.

Project Manager | Semper High-Service Pump Station Reliability & Redundancy

Improvements, City of Westminster (CO). Brian was responsible for evaluating, developing and coordinating multi-disciplined assessment and design of electrical system and pumping reliability improvements for the 68-mgd Semper HSPS. The project includes hydraulic transient analysis and design of a new 32,000-gallon surge tank, conversion of a dual 2400V/480V onsite distribution system to 480V, replacing 2400V 600-hp pump motors, a new 1.75MW generator, and a new 36-inch discharge header as a secondary connection to the City's distribution system. Additional scope added by the client includes replacing VFDs, pumps, and critical valves at the Northwest and Reclaimed WTFs.

Project Manager | Advanced Water Treatment Water Quality Consulting Services, Town of Castle Rock (CO).

Brian was responsible for managing an ongoing on-call agreement with the Town to provide a variety of water quality consulting and engineering services focused on the integration of the Town's new advanced indirect potable reuse treatment plant. Services primarily consisted of evaluating the Town's water quality data to identify raw water, treatment process and finished water quality goals for the Town's integration of its new advanced treatment processes. Task orders included the evaluation of existing operating data to establish baseline performance for the treatment plant in meeting regulatory requirements; developing recommended water quality

Education

MS Civil & Environmental Engineering
University of Colorado – Boulder

BS Civil Engineering,
California Polytechnic State University

Registration

Professional Engineer:
CO, CA

Work Experience

25 Years

Expertise

- Water Treatment Planning, Design, and Construction Guidance
- Wastewater Collection and Treatment System Planning, Design, and Construction Oversight
- Cost-Benefit Analysis

Brian C. Daw. P.E | Project Manager

Project Experience continued

parameters and their respective concentrations/levels to be used for monitoring of taste and odor treatment processes, advanced oxidation (ozone) for removal of contaminants, biological filtration for removal of organics and emerging contaminants; granular activated carbon for water quality polishing for finished water distribution; and UV for disinfection and emerging contaminant removal. Other tasks included modeling intra-zone mixing and associated water quality in the distribution system, and providing the Town with technical support addressing customer questions regarding the indirect potable reuse and natural and anthropogenic contaminants.

Project Manager | Town of Dillon, Lead and Copper Rule Compliance Treatment Town of Dillon (CO).

Brian led the evaluation of corrosion control treatment alternatives in response to lead action-level exceedances observed in the Town's distribution system.

Project Manager | River Water Treatment and Pump Station Evaluation and Design, Confidential Client (WY).

Brian was responsible for leading the evaluation and alternatives analysis for a river water intake and treatment system that was subject to high particle loads from colloidal materials that had compromised an existing multimedia filtration and ion-exchange resin treatment system, resulting in the client's long-term lease of RO membrane filtration and ion-exchange equipment to meet treated water goals. The team analyzed ten (10) alternatives consisting of advanced treatment approaches to successfully identify a recommended treatment train incorporating ultrafiltration downstream of the media filters, purchase of a permanent RO membrane system and addition of a electrodeionization polisher to target remaining mineral contaminants.

Project Manager | Lead & Copper Rule Compliance Treatment Recommendations, Town of Dillon (CO).

Prepared a corrosion control treatment evaluation report in response to increased LCR sample concentrations observed in the Town's distribution system. The project included evaluating the Town's raw and distribution system water quality, and developing corrosion control strategies for minimizing LCR concentrations. Brian also led the coordination effort with CDPHE to identify reasonable, cost-effective approaches to managing LCR concerns observed within a concentration of multi-family residences. Brian was responsible for managing preparation of the plans and specifications for the recommended treatment option and guiding the recommendations through the CDPHE for approval.

Project Manager | City of Durango, College Mesa WTP Onsite Generation Disinfection System, Durango, CO.

The City of Durango requested assistance from HDR to prepare documentation required by the Colorado Department of Public Health and Environment for installing a temporary disinfection system consisting of a tablet feeder. The City is required to take their gas chlorine system off line. HDR was also asked to prepare documentation and transmit supporting information for the Construction Approval Application for the permanent installation of a MIOX disinfection system.

Project Manager | Town of Georgetown, WTF Improvements Project Georgetown, CO

Developed and coordinated a siting and treatment evaluation and decision-support analysis for capital improvements. The scope included distribution system hydraulic modeling and alternatives analysis of treatment facility and storage tank sites, conventional and membrane treatment processes, and pump station and distribution system improvements to replace outdated treatment processes and provide reliable potable water service. Prepared design documents for a new membrane filtration facility; microhydroelectric facility; rehabilitation of an existing 1.5-mg storage tank & foundation; and, a new pump station and 400,000-gallon storage tank with 2,200-lf main extension. The design phase was completed under strict deadline requirements enabling Town to secure loans made available through the American

Project Manager / Lead Engineer | Lookout Mountain Water District, Membrane Filtration Upgrade Project, Clear Creek County, CO Membrane filtration upgrades included process improvements for pretreatment of iron, manganese, and total organic carbon; installation of three Siemens Memcor membrane units (total capacity of 550 gpm); preparing regulatory applications; and, providing construction engineering services. The total project cost was \$1.25 million.

Project Engineer | Metro Wastewater Reclamation District, Chlorine Disinfection System Conversion, Central Treatment Plant (CTP), Denver, CO Project engineering responsible for leading multi-discipline engineering evaluation of alternatives and preliminary design for converting gaseous chemical storage and feed systems to bulk liquid systems for disinfection and dechlorination of 180-mgd wastewater discharge and constructing a new 4,000-gpm plant water pump station. Project was completed for approximately \$10 million. Responsibilities included managing multi-disciplined design team and cost-estimating team; facilitating client design meetings; developing bulk liquid storage facilities and chemical feed equipment; and developing a hydraulic model to evaluate alternative discharge scenarios under tight water elevations restrictions.



Bob Frachetti, PE | Principal

Phone: 303.995.7800 | **Email:** bob.frachetti@aquaeng.com

Bob has over 30 years of project management and technical experience in virtually all areas of water and wastewater engineering including facilities planning, permitting, design, construction, facility commissioning, performance evaluations, and energy efficiency audits. His strengths include process modeling and design, technology and equipment selection, detailed design engineering, energy efficiency upgrades, hydraulics, and construction engineering and management. He also has significant experience with integrated project delivery methods including design-build, CMAR, and performance contracting.

Project Experience

SELECT WATER ENGINEERING EXPERIENCE

Bennett On Call Engineering Services, 2017 - Current

Water Distribution System, Permitting Assistance, Davis Bacon Compliance Review, WWTF On Call Eng. Services, Water Storage Tank Evaluation, Lagoon & E. Interceptor, ISO Fire Flow Modeling, Cordella LS Immediate Improv., Reclaimed Water Permitting Evaluation, Renewable Water Supply Consulting

Indian Hill Water District On Call Engineering, Current

Engineering Analysis, Hydraulic Modeling, Water Master Planning, Project Management

Boulder County, CO San Souci Water Treatment Plant, 2020

Surface Water Treatment, Facility Planning, Design, Permitting, Project Management

Spring Valley Metro District #1, CO Arapahoe Well #2, 2020

Groundwater Development, Hydraulic Analysis, Design

Clear Water Metropolitan District, Water Treatment Storage & Distribution, 2018

Principal in Charge/Project Manager

Miller Ranch Pump Station Water Engineering, 2018

Principal in Charge/Project Manager

Town of Bennett Water System Improvements. Principal-in-Charge/ Project Manager. Managed and performed engineering for multiple projects including complete water system infrastructure audit and assessment, capital improvement plan, water system hydraulic model, new storage tank alternatives evaluation, multiple well house upgrades (pumps and SCADA), new groundwater well drilling, permitting, treatment, and connection to distribution system. Engineer of Record for new 0.5 MG elevated water storage tank and distribution system improvements project including planning, permitting, design, construction engineering.

Town of Georgetown WTF Improvements. Principal-in-charge for a \$3.6 million improvements project including a new 0.63 MGD membrane filtration facility; micro hydroelectric facility; replacement of an existing 1.5-mg storage tank; a new 1,500-gpm pump station; and a new 400,000-gallon welded steel storage tank with 2,000-lf distribution main extension. Design phase services were completed under strict deadline requirements enabling Town to secure \$3.34 million of loan forgiveness and 0% loans made available through the American Recovery and Reinvestment Act (ARRA) and Colorado state revolving funds.

Tabernash Meadows W&S District. Project Manager for new ground water well permitting and chlorination project.

Lookout Mountain Water District Membrane Filtration Upgrade. Principal-in-Charge for membrane filtration CL2 disinfection upgrades including process improvements for pretreatment of iron, manganese, and total organic carbon; installation of three Siemens Memcor membrane units (total capacity of 550 gpm); design of chlorine disinfection facilities; preparing regulatory applications; and, providing construction engineering services. The total project cost was \$1.25 million.

Education

BS Civil and Environmental Engineering, Clarkson University
Potsdam, New York, 1990

Graduate Level Coursework:

Syracuse University Environmental Chemistry and Analysis, 1992

SUNY Environmental Science and Forestry Water Pollution Engineering, 1992

Licensing

Professional Engineer Colorado, 1994
Professional Engineer, New Mexico, 2007 (inactive)

Work Experience

30 Years

Experience Highlights

- Project Manager/ Principal in Charge and Engineer of Record for numerous water and wastewater treatment facility projects
- Construction experience as a General Contractor and Resident Engineer
- Process design expertise and process equipment and technology specialist
- Alternative project delivery experience: design-build; CMAR; public private partnerships

Bob Frachetti, PE | Principal

Project Experience (continued)

Briggsdale Water Storage Tank and Booster Pump Station. Project Manager and lead design engineer for design and construction of a new bolted steel water storage tank and booster pump station. Project was funded by the USDA grant. Prepared Final Design (plans and specifications) and managed office and field engineering.

Gateway Village Water Storage Tank and Booster Pump Station. Project Manager for design and construction of new 0.5 MG bolted steel water storage tank and booster pump station.

United Water & Sanitation District / Brannan Pit Raw Water Pump Station. Project Manager / lead design engineer for 25 cfs raw water pumping station. Vertical turbine pumps and controls. 36" DIP discharge piping.

Lake Forrest Mutual Water Company. Project Manager / lead design engineer for RO water treatment system for fluoride removal.

Dukes West MHP Water System Improvements. Project Manager/ lead design engineer for well upgrades, chlorination, and storage tanks.

Henderson Mill Water WTP. Project Manager/ lead design engineer for new 0.25 MGD membrane water treatment plant.

Columbine Lake Water District. Project Manager/ lead design engineer for water treatment system upgrade to remove iron and manganese.



Darin Hawkes, PE | Principal

Phone: 801.683.3727 | **Email:** darin.hawkes@aquaeng.com

Mr. Hawkes' has a vast amount of experience in various civil engineering disciplines. He specializes in difficult projects that often have space, access and/or extreme time constraints. He has developed a reputation for being able to view a problem from multiple angles to develop a solution that works for his client. His experience ranges from pumping system design, concrete storage tanks and open reservoir design, to large concrete water storage facilities and high elevation snowmaking reservoirs and dams. Many of his projects are provided as turn-key solutions for his clients with his direct involvement from conceptual design through contract administration and project close-out. As part of the AQUA team, he has lead and assisted in numerous design projects, the completion of several System Capacity Analyses, Municipal Capital Facility Plans and large-scale Master Plans for both culinary water and wastewater.

Project Experience

Water Storage Facilities

Mountain Regional Water 2MG Rectangular Tank Design - 2016

Civil, Structural, Mechanical Design & Construction Management
Rectangular tank design, partially buried, conventionally reinforced concrete. Lead all aspects of civil engineering design and construction management services.

Promontory Ranch 1MG Concrete Tank Design - 2015

Civil, Structural, Mechanical Design & Construction Management
Circular tank design, partially buried, conventionally reinforced concrete, ridge-top site with difficult access. Lead all aspects of civil engineering design and construction management services.

Snowbird Snowmaking Reservoir Design - 2015

Civil, Structural, Mechanical Design & Construction Management
Open 10 MG lined reservoir, high altitude (10,200 msl), extreme access, blasting required, rock excavation. Lead all aspects of civil engineering design and construction management services.

Snowbasin Snowmaking Reservoir Design - 2014

Civil, Structural, Mechanical Design & Construction Management
Open 12 MG lined reservoir, high altitude (8,700 msl), extreme access, blasting required. Lead all aspects of civil engineering design and construction management services.

Owens Corning 225Kgal Fire Storage Tank Design - 2013

Civil, Structural, Mechanical Design & Construction Management
Circular tank design, partially buried, conventionally reinforced concrete with fire pump station structure built integral with the tank deck. Lead all aspects of civil engineering design and construction management services.

Hyrum City, Utah - 2MG Concrete Tank - 2011

Civil, Structural, Mechanical Design & Construction Management
Circular tank design, partially buried, conventionally reinforced concrete, space constraints required extensive hillside shoring using soil screws and retaining mesh. Lead all aspects of civil engineering design and construction management services.

Elk Ridge City, Utah - 1MG Prestressed Concrete Tank - 2008

Civil, Structural, Mechanical Design & Construction Management
Circular tank design, partially buried, prestressed reinforced concrete; assisted with structural design and construction management services.

Education

BS Civil Engineering,
University of Utah, 2003

Registration

Professional Engineer (Structural):
Utah

Work Experience

17 Years

Affiliations

ASCE

Expertise

- Hydro and Civil Structural Design (Storage Tanks, Retaining Walls, Platforms, etc.)
- Pumping System Design
- Industrial Facility Expansion, Remodel and Retrofit
- Hydraulic & Hydrologic
- Computer Modeling
- Facility Plans & Master Plans
- Water Resources Treatment

Darin Hawkes, PE | Principal

Project Experience (continued)

Pumping Stations

Deer Crest Booster Pump Station

Civil, Structural, Mechanical Design & Construction Management

Mountain Regional Water 2MG Tank Booster Pumping Station

Civil, Structural, Mechanical Design & Construction Management

Grantsville West Bench Booster Pumping Station

Civil, Structural, Mechanical Design & Construction Management

Mountain Regional Water Bear Hollow Booster Pumping Station

Civil, Structural, Mechanical Design & Construction Management

Mountain Regional Water Blackhawk Booster Pumping Station

Civil, Structural, Mechanical Design & Construction Management

Hyrum City Reclaimed Water Pumping Station

Civil, Structural, Mechanical Design & Construction Management

Master Plans, Capital Facility Plans, Planning Documents

Driggs Idaho Water System Facility Plan

CAD software water modeling, Planning and system characterization

Western Zirconium Chemical Milling Facility Site Feasibility Study

Construction Feasibility Review

Sage Glen Well Preliminary Engineering Report

Develop PER as required per Utah Division of Drinking Water Requirements

Pole Canyon Wet Utilities Master Plan

Planning, Survey coordination, CAD Utility Modelling, Cost analysis

West Wendover Nevada Culinary Water and Wastewater System Master Plan

Planning

Wells and Groundwater Development

Utah Valley University Irrigation Well

Civil, Structural, Mechanical Design & Construction Management

Utah Valley University South Well Overdrill

Civil, Structural, Mechanical Design & Construction Management

Utah Valley University Heat Exchange Wells

Civil, Structural, Mechanical Design & Construction Management



Kevin Allcott | Construction Manager

Phone: 801.683.3724 | **Email:** kevin.allcott@aquaeeng.com

Mr. Allcott has over 32 years experience in the construction industry. As a construction manager for AQUA, Mr. Allcott specializes in construction oversight, contract administration, dispute resolution, and construction management. His experience has included trouble shooting, scheduling, contract dispute resolution and performance measurement systems implementation on projects ranging in value from \$2.5 to \$350 million. Mr. Allcott has developed sophisticated computer models of complex construction projects for use in project management as well as recovery plans. These models have also been used to determine cause and affect relationships between changes and increased costs. He has assisted in the defense of claims for additional compensation on several multi-million-dollar constructions projects.

Project Experience

Construction Management

Rexburg City, ID WWTP Expansion and Upgrade, 2013

Utilized a fixed film process followed by existing oxidation ditches to bring the plant to a capacity of 4.8 mgd, adding ultraviolet disinfection, and a new screw press facility costing about \$9 million.

Stansbury Park Improvement District, 2012

Construction oversight for modifications to an existing lagoon facility including screens, lift station, blower building, and aeration and chlorine contact basins.

Tooele City, UT Wastewater Treatment Plant Phase 2 Upgrade, 2012

Expanded the plant from 2 mgd to about 4 mgd in two phases. Project cost expected to be about \$8.5 million. First phase construction complete. Second Phase includes sludge screw presses solar drying, and UV disinfection.

Tremonton, UT WWTP Salsnes Filter Building, 2011

Installed a new filtering system for redundancy to the primary clarifier.

Provo, UT Wastewater Treatment Dewatering Facility, 2010

The expansion of the sludge dewatering facility including a new building, centrifuge, and associated upgrades costing about \$2.5 million.

Brigham City, UT, WWTP Expansion, 2010

Increased the hydraulic capacity from 4 MGD to 6 MGD and installed new screw presses for biosolids dewatering.

Springville City, UT WWTP Upgrade, 2009

Expansion and Upgrade utilizing a STM Aerotor process that is in construction to bring the plant to a capacity of 6 mgd costing about \$11 million.

Tooele City, UT Wastewater Treatment Plant Phase 1 Upgrade, 2008

Expansion to bring the plant from 2 mgd to about 4 mgd in two phases. Project cost expected to be about \$8.5 million.

Jerome City, ID Wastewater Treatment Plant Upgrade, 2008

Expansion and Upgrade utilizing an MBR process. Included several phases to bring the plant to a capacity of 4.5 mgd costing about \$10 million.

Wolf Creek Sewer District, UT, 2008

0.8 mgd MBR facility at a cost of about \$7 million.

Tremonton, UT WRF Expansion and Upgrade, 2004

Expanded from a 1 mgd facility to 2.2 mgd using STM Aerotor costing \$2.2 million.

Hyrum City, UT WWTP Expansion and Upgrade, 2004

Utilized a Kubota membrane process for a 2 mgd plant with a cost of \$5 million.

Spanish Fork, UT WWTP Upgrade, 2004

Expanded capacity from 3.5 to 5 mgd using STM Aerotor costing \$2.8 million.

Education

B.S. Construction Management,
Boise State University, 1981

Work Experience

32 Years

Expertise

- Construction Oversight
- Contract Administration
- Dispute Resolution
- Construction Management

Kevin Allcott | Construction Manager

Project Experience (continued)

Oakley, UT Water Reclamation Facility, 2004
A new Zenon ZeeWeed 250,000 gpd facility costing \$1.7 million.

Construction Project Oversight
2002 Spanish Fork Belt Press Facility - Spanish Fork, Utah
2002 Orem Secondary Clarifier - Orem, Utah
2001 3-Mile Reservoir Rehab and Aluminum Cover - West Wendover, Nevada
2001 Orem Final Clarifier and DAF Thickener - Orem, Utah
2001 Orem Administration Building - Orem, Utah
2002 Payson WWTP Upgrade, STM Aerotor, Final Clarifier, Digester - Payson, UT
1981 -1985 Morrison-Knudsen Company - Boise, Idaho

Construction Management Consulting
1986 - 1988 Anheuser-Busch Companies Expansion - Newark, New Jersey
1989 - 1990 Honda Motors, Accord Manufacturing Facility - East Liberty, Ohio
1990 - 1992 Southwestern Bell Data Center - St. Louis, Missouri
1992 INEL Chemical Processing Plant - Idaho Falls, Idaho



Nicholas Graue, PE | Senior Project Engineer

Phone: 801.683.3733 | **Email:** nick.graue@aquaeng.com

Mr. Graue is an intensely ambitious Professional Engineer and Project Manager backed by over a decade of experience in the Water and Energy sectors with a proven track record of successful project delivery and program implementation. Nick's deep passion for natural resource conservation has steered him to managing engineering projects where technology can be leveraged to achieve a more sustainable infrastructure. Nick's work experience involves the entire life cycle of engineering projects from capital planning, feasibility analyses and engineering design to contract administration, construction management, facility commissioning and operations consulting.

Project Experience

Mayflower Mountain Resort Water Master Planning & Design, 2020

Engineering Analysis, Hydraulic Modeling, Water Master Planning, Water Storage Tanks, Pump Stations, Flow Control Facilities, PRVs, Utility Design, Project Management

Lakeview Business Park Water & Sewer Master Plan, 2020

Engineering Analysis, Hydraulic Modeling, Utility Master Planning, Design, Project Management

Boulder County, CO San Souci Water Treatment Plant, 2020

Surface Water Treatment, Facility Planning, Design, Permitting, Project Management
West Wendover Water GIS Mapping Update, 2020
GIS Master Planning, Database Design

Spring Valley Metro District #1, CO Arapahoe Well #2, 2020

Groundwater Development, Hydraulic Analysis, Design, Project Management
Snowbird Resort Mid-Gad Lodge Spring Collection & Disinfection Project, 2020
Groundwater, Site Utilities, Mechanical Design, Project Management

Salt Lake County Service Area 3 Chickadee Ski-Run Water & Sewer Realignment Project, 2020

Utilities, Water Distribution, Wastewater Collection, Construction Management

Oakley City, UT Cottonwood Springs Improvements, 2020

Groundwater, Mechanical Design, Project Management

Aspen Acres Association Spring Improvements, 2020

Groundwater, Mechanical Design, Instrumentation & Controls, Project Management, Construction Management

Mountain Regional Water, Glenwild Booster Station Upgrades, 2020

Hydraulic Analysis, Mechanical Design, Site Utilities, Permitting
Mountain Regional Water, Hidden Creek PRV & Booster, 2020

Construction Management

Metro Water District of Salt Lake and Sandy Telemetry Radio System Improvements, 2020

Telemetry System Planning & Design

Town of Alta, UT Bay City Mine Pump Improvements, 2020

Hydraulic Analysis, Mechanical Design, Permitting

City of Grantsville, UT Contract District Engineering, Ongoing

Land Use Planning, Utility Master and Capital Facility Plans, Development Plan Review, Hydraulic Modeling, Engineering Analysis

City of Driggs, Idaho Contract District Engineering, Ongoing

Development Plan Review, Hydraulic Modeling, Engineering Analysis

Education

BS Civil Engineering
University of Utah, 2013

Registration

Professional Engineer:
UT, CO, NV, ID, OR, WA

Certifications

Envision Sustainability Professional (ENV SP), Institute for Sustainable Infrastructure

Work Experience

12 Years

Affiliations

AWWA
AWWA/Energy Management Committee

Expertise

- Project Management
- Water System Master Planning
- Hydraulic Modeling
- Pumping System Design
- Intelligent Water Systems
- SCADA & Instrumentation
- Water Conveyance & Transmission
- Asset Management
- Site Utilities
- Water Distribution
- Water Storage Facilities

Nicholas Graue, PE | Senior Project Engineer

Project Experience (continued)

3Kings Water Treatment Plant

Replacement of Park City's existing Spiro Water Treatment Plant with a new 7 MGD mining influenced water treatment plant. The new facility will treat water from four unique water sources including two mine drainage tunnels and a spring. The project includes several sustainable measures like micro-hydro power generation and a water heat transfer HVAC system.

Land Use Planning & Development, Hydraulic Modeling, Pumping System Design, IT Network Design, SCADA & Instrumentation, Asset Management

Western Summit County Interconnect Project

Regional interconnect valve vault and transmission line to further interconnect Western Summit County water service districts.

Hydraulic Modeling, Utilities Design, Mechanical Design, Construction Management

Middle School Well Improvements

Assessment and replacement of existing Middle School Well pumping system including submersible pump and motor, soft starter, electrical and instrumentation.

Hydraulic Modeling, Pumping System Design, Construction Management, Electrical, Instrumentation

Park City Golf Course Maintenance Facility

New 10,000 sq. ft. maintenance building for Park City Golf Course operations, maintenance and administration offices. Project located in a sensitive residential area and involved heightened architectural features and significant public involvement.

Land Use Planning & Development, Architectural, Structural, Site Utilities, Construction Management

Empire Tank Replacement

Replacement of existing 1M gallon above ground steel water tank with a new partially buried concrete tank.

Land Use Planning & Development, Utilities Design, System Analysis

Deer Crest Pump Station and Transmission Line

New drinking water pumping station and transmission line located on a challenging site in a ski run on Deer Valley Resort. The project allowed Park City to save one million kilowatt-hours per year in electrical energy consumption due to a more efficient method of conveying water to the upper reaches of Deer Valley.

Land Use Planning & Development, Hydraulic Modeling, Energy Analysis, Pumping System Design, Mechanical Design, SCADA & Instrumentation Design, Construction Management

Creekside Water Treatment Plant

Reconstruction of two drinking water wells deemed under the influence of drinking water. Project included the demolition of two well houses and construction of a new consolidated well house to contain filtration and ultraviolet disinfection and on-site hypochlorite generation equipment to satisfy drinking water standards applied to groundwater deemed under the influence of surface water.

Land Use Planning & Development, Environmental Permitting, Pumping System Design, Mechanical Design, SCADA & Instrumentation Design, Construction Management

Park Meadows Well Improvements

Replacement of existing Park Meadows Well pumping system including submersible pump and motor, variable frequency drive, electrical and instrumentation.

Hydraulic Modeling, Pumping System Design, Construction Management

Park City Water SCADA and Telemetry System Replacement

Progressive design-build project to fully replace existing water utility SCADA system & telemetry communications system. The project replaced of all PLC and IO modules for two water treatment plants, three wells and 75 remote distribution system facilities and also included the construction of a high-speed 5G radio and fiber optic networks to support system communications.

SCADA & Telemetry System Master Planning, SCADA & Instrumentation Design, IT Network Design, Systems Integration, Construction Management

Park City Top of Main Street Pressure Reducing Station

New pressure reducing station serving the heart of Historic Old Town in Park City, UT.

Hydraulic Modeling, Site Utilities, Mechanical Design, Construction Management

Park City Heights Water Storage Tank

Water storage tank site selection feasibility study including construction feasibility assessment and preliminary engineering.

Hydraulic Modeling, Feasibility Study, Utilities Design, Construction Management

Park City Distribution System Hydraulic Model

Constructed and calibrated a full distribution system hydraulic model for Park City's water system and administered the hydraulic modeling program to support project development review, water system master planning and water system optimization efforts.

GIS, Hydraulic Modeling, Operations Analysis



Ryan Pack, P.E. - Principal

(801) 683-3761 - ryan.pack@skmeng.com

Mr. Pack has experience with many components of SCADA and controls. He has worked with controls as simple as relay logic and PID loop controllers thru complex radio controlled SCADA systems. He has worked with many different programmable logic controllers and Operator interfaces including Allen Bradley, Control Microsystems, GE, Koyo, Modicon, Siemens, and others. He has utilized many software packages for human machine interface including Allen Bradley, GE Proficy (Intellution), Wonderware, and National Instruments Lookout. He has designed and installed new systems, replaced old systems, and expanded existing control systems. Mr. Pack has worked with many communications systems including radio, fiberoptics, ethernet, serial, and proprietary communications systems such as controlnet and profibus. He has conducted numerous path studies, for both licensed and non-licensed radio communications systems. He has designed and installed radio telemetry systems with over 50 remote sites.

Work Experience

18 Years

Education

BS Electrical Engineering
University of Utah, 2002

MBA
Weber State University, 2005

Registration

Professional Engineer:
UT, ID, NV, WY, CO, HI, NM

Specialties

- Electrical and Controls
- Design
- Construction Oversight
- Control Systems
- Telemetry and SCADA Systems
- Design
- Control Testing
- Programming
- Startup and Maintenance
- Contracts

Project Experience

Lost Creek Project, Summit County, UT. Electrical/Controls Engineer

Mr. Pack worked on this project in all aspects from the shallow wells to the treatment facility. Ryan designed Mountain Regional Water's SCADA system, and has continued working on the system since original installation. He oversaw the programming and startup of the existing Lost Creek Canyon control system, and is extremely familiar with its layout, configuration, and applications. Ryan also worked on the design for the motor controls, power distribution, lighting, and instrumentation for this system.

Mountain Regional Water SCADA, Summit County, UT. Controls Engineer

SKM designed a new SCADA system for the district that included all of the water distribution, raw water collection, and treatment. He worked with the water district to design a new SCADA system that included all of the water distribution, raw water collection, and treatment. He worked with the water district to meet their monitoring, reporting, and control needs. Ryan coordinated the installation with their staff, and programmed much of the system. This included reporting, monitoring, alarming, and full control of the system. He continues to maintain the system with SKM's staff of service personnel.

Idaho Falls Water SCADA, Idaho Falls, ID. Controls Engineer

SKM designed a backup power generation system for the water department, as well as the control interface between the Generator and the SCADA system. Mr. Pack is currently maintaining their water system SCADA and controls, and is under contract to perform programming on their upcoming additions.

Santaquin SCADA, Santaquin, UT. Controls Engineer

SKM designed a new SCADA system for the city that included all of the water distribution, wastewater collection, and wastewater treatment facility. Mr. Pack worked with the city to meet their monitoring and control needs, and provide a system that would work for them. He coordinated the installation with local trades, and aided in the programming of the system. This included reporting, monitoring, alarming, and full system control.

Summit Park Boosters, Summit County, UT. Electrical/Controls Engineer

SKM worked on the electrical and controls design for the two pump stations, and flow control station required for this project. Mr. Pack designed the motor controls, instrumentation, and controls required to operate the facilities as required by Mountain Regional Water.

Bountiful City Water, Bountiful, UT. Electrical/Controls Engineer

SKM has worked on numerous projects for the City of Bountiful. Mr. Pack has designed numerous motor control and distribution systems for wells and boosters for the city. He has worked with the department head to incorporate complete system control from the motor control enclosure for each of these sites.

Davis and Weber Counties Canal SCADA, Weber County, UT. Controls Engineer

SKM is currently working on installation of a new SCADA monitoring system for the canal company. This includes the monitoring of all canal discharge flows, as well as monitoring of the primary canal flow. Ryan designed the radio network, control system, and aided the district in coordinating installation of required hardware.

East Zion SCADA, East Zion SSD, UT. Electrical/Controls Engineer

Ryan Designed the Electrical, Controls, and SCADA system for this community's water system. This included phase conversion for the booster pumps, tank level monitoring, well control and communications between the sites. Ryan designed all of the motor controls and instrumentation for this project.



Alicia Thorpe, PE

PRINCIPAL | SR. MECHANICAL PROJECT MANAGER

Alicia offers more than 20 years of experience as a project manager in mechanical HVAC design. She is dedicated to building client relationships and providing the highest level of service. Alicia has worked extensively on a wide variety of projects, including commercial, municipal and educational facilities.

PROJECT ROLE

Mechanical HVAC and plumbing design
Coordination of mechanical and plumbing systems
On-site problem solving
New construction and remodel projects
Building commissioning

EDUCATION

Bachelor of Science in Architectural Engineering,
University of Wyoming,
1997

PROJECT EXPERIENCE: WATER TREATMENT FACILITIES

Gold Creek Wastewater Treatment Plant | Elizabeth, CO

Water Treatment Plant | Fallon, NV

Wastewater Treatment Plant | Lafayette, CO

Sterling Water Treatment Plant | Sterling, CO

Rifle Water Treatment Plant | Rifle, CO

Dory Hill Water Treatment Plant | Black Hawk, CO

City of Greeley Bellevue Water Treatment Plant | Fort Collins, CO

Eagle River Water and Sanitation District | Avon, CO

Consolidated Mutual Water Company Water Treatment Plant | Lakewood, CO

Scottsdale Water Treatment Plant | Scottsdale, AZ

UNC Central Campus Chilled Water Plant | Greeley, CO

CSU Engines and Energy Conversion Lab | Ft. Collins, CO

New Belgium Brewery Water Filtration Plant | Fort Collins, CO

MEMBERSHIPS & LICENSING

Professional engineer, licensed in Colorado and 23 other states

Member American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE)

Member National Council of Examiners for Engineering & Surveying (NCEES)



Jay Cooper, PE
MECHANICAL PROJECT ENGINEER

Jay offers five years of experience in mechanical engineering. Jay is a results-driven engineer who uses his knowledge of the building construction process for the benefit of all project stakeholders. He has efficiently designed mechanical and plumbing systems for a wide variety of clients, with a strong base of knowledge in multifamily, commercial and municipal projects. Jay has experience coordinating with internal and external team members to ensure a successful project.

PROJECT ROLE

Mechanical HVAC and plumbing design
Knowledge of design codes
Review of shop drawing submittals
Preparation of field observation reports and field investigations
Coordination with multiple other disciplines and stakeholders in system design to appropriately meet project needs
On-site problem solving
New construction and remodel projects

EDUCATION

Bachelor of Science in Mechanical Engineering, Colorado State University, 2015

MEMBERSHIPS & LICENSING

Professional Engineer
Licensed in Colorado

PROJECT EXPERIENCE

Greeley Water Treatment Plant | Greeley, CO
Loveland Fire Station | Loveland, CO
Gilcrest Fire Station | Gilcrest, CO
Platteville Fire Station | Platteville, CO
Legacy Academy | Elizabeth, CO
Aims General Services Building | Greeley, CO
Future Legends Sports Complex | Windsor, CO
Towneplace Hotel at DIA | Denver, CO
Aloft Hotel | Salt Lake City, UT
Huron Multifamily | Denver, CO
Bank of Colorado | Greeley, CO: 4,000 sf bank
New Belgium Clinic | Fort Collins, CO
The Broadmoor Resort | Colorado Springs, CO
Lyric Cinema Café | Fort Collins, CO
Golds Gym | Cheyenne, WY
Chuze Gyms | Various locations
Central Park Station | Aurora, CO
Gravity One Climb | Broomfield, CO

Chad Bringle, P.E.

Project Engineer

**Education**

Mississippi State University
B.S., Biological Engineering, 1997

Professional Registration

Registered Professional Engineer:
Colorado

Professional Affiliations

Colorado Association of
Geotechnical Engineers (CAGE)

American Society of Civil Engineers
(ASCE)

Qualifications Summary

Mr. Bringle has over **18 years of experience** in geotechnical engineering and construction materials testing. He is responsible for conducting project management for soil and foundation geotechnical investigations and subsequent geotechnical design level reports, and contract specification compliance. His design experience includes recommendations for shallow and deep foundations, retaining walls, floor slab performance, groundwater mitigation and dewatering, pavement subgrade stabilization, pavement thickness design, pavement condition and distress mitigation. Mr. Bringle's construction background includes shallow foundation excavation, deep foundation construction techniques and inspection, reinforcement steel inspection, mix designs overview, asphalt inspection, earthwork inspection, and stabilized subgrade techniques.

Professional Experience

▪ **Chatfield Reservoir Reallocation Project** (Littleton, CO): Provided geotechnical recommendations for proposed recreational and environmental improvements to the Chatfield State Park. Geotechnical recommendations included multiple bridge and building foundations, shore fill placement below the water table for Cigar and Titan Lakes, borrow area assessments and embankment fill recommendations, settlement considerations for new fill placement, and internal clay core considerations for proposed embankment dikes.

▪ **Semper High Service Pump Station** (Westminster, CO): Provided geotechnical recommendations for the proposed improvements to the Semper High Service Pump Station. The proposed improvements consisted of an emergency generator, two medium voltage transformers, voltage switchgear, four transformers, a new 32,000-gallon surge tank with a 24-inch buried pipe, a new flow meter vault with a buried 48-inch pipe, and site improvements including grading, retaining walls, and new pavement and new concrete flatwork.

▪ **Plum Creek Lift Station Phase I Infrastructure** (Douglas County, CO): Provided geotechnical recommendations for new lift station and water and sewer lines for the 400-acre Plum Creek Development.

▪ **1.5 MG Potable Water Tank and Water Treatment Plant** (Georgetown, CO): Provided field exploration and geotechnical recommendations for a new 1.5 MG water tank at an existing water tank site and new water treatment plant adjacent to Clear Creek at the base of Guanella Pass. The existing water tank was heavily distressed due to bearing on variable soil conditions consisting of bedrock on the uphill side and man-placed fill on the downhill side. Provided design level drawings and provided construction observation services for a reinforced segmental concrete block retaining wall to create a level pad above a steep bank down to Clear Creek for the new water tank.

▪ **Georgetown Wastewater Treatment Plant Expansion** (Georgetown, CO): Performed geotechnical engineering study for improvements to the existing wastewater treatment plant in Georgetown, Colorado.

▪ **88th Avenue Open Space Improvements** (Adams County, CO): Provided geotechnical recommendations for environmental restoration of the South Pond riparian habitat. Provided geotechnical recommendations for new fishing pier, backfill considerations and structures located on new shorebank construction.

▪ **Spinney Mountain Reservoir** (Park County, CO): Provided a Geotechnical Data Report for the Seepage Evaluation of Spinney Mountain Dam.

▪ **Onsite Wastewater Treatment System (OWTS) Design** (Summit, Grand, Larimer, Weld Counties, & Tri-County Health): Provided numerous OWTS design systems for residential and small business construction.

Jim Noll, P.E.

President

Principal-in-Charge

**Education**

University of Colorado
B.S. Civil Engineering, 1985

Winona State University
B.S., Geology, Winona, MN, 1979

Professional Registration

Registered Professional Engineer:
Colorado

Professional Affiliations

Past President Colorado Association of
Geotechnical Engineers (CAGE)

American Council of Engineering
Companies of Colorado (ACEC/CO)

American Society of Civil Engineers
(ASCE)

Qualifications Summary

Mr. Noll has over **37 years of experience** in geotechnical, geological and materials engineering. He has performed a wide variety of investigations and engineering services for projects including transportation; drainage/waterways; retail, industrial and commercial buildings; water and wastewater treatment/distribution facilities; residential development; earthen dams; and mining operations. Transportation related projects range from urban interchanges to mountainous terrain to rural aggregate surface roadways. Structures associated with the projects include single to multi span bridges and viaducts, and numerous retaining wall types. His background includes project management ranging from small-scale projects to large, multi-year contracts for various governmental agencies.

Professional Experience

- Project Manager for numerous drainage way projects throughout the Front Range of Colorado. The projects range from intermittent streams to large creeks and rivers. Various structures were included in the geotechnical studies including large earthen embankments and drop/grade control structures. The drop/grade control structures range from grouted sloping boulder drops to vertical drops with cutoff walls ranging from driven sheet piles to conventional concrete walls. Recommendations for reducing channel bank erosion, bank stabilization and methods for establishing vegetation were provided.
- Project Manager for a wide variety of water and wastewater projects including pipelines, 0.5 to 5 million-gallon water tanks, along with new treatment facility construction and existing facility expansion. The water and sanitation districts include the Town of Erie, City of Aurora, City of Arvada, City of Brighton, Centennial Water and Sanitation, Denver Water, Southgate Water and Sanitation, Stonegate Sanitation, Roxborough Water and Sanitation District, City of Thornton, and Westminster TOD Waterline, City of Westminster. A recent project includes the City of Aurora's Prairie Water Project which consists of 32 miles of a 60-inch diameter, flexible steel pipe which will transmit raw water from Brighton to the Aurora Reservoir. Also, a project for the Roxborough Water and Sanitation District included the Wastewater Regionalization Project which consisted of 13.5 miles of sanitary sewer installation.
- Project Manager for numerous roadway construction/interchange projects throughout Colorado. The projects include I-70 and S.H. 58 Interchange Improvements, Plum Creek Parkway Extension at I-25, I-25/23rd Avenue Braided Ramp, Collector/Distributor Road – Speer Boulevard to 19th Avenue, 144th Avenue and I-25 Interchange, I-225 and Alameda Avenue Interchange, C-470 and Alameda Parkway Interchange Improvements, C-470 Extension from I-70 to U.S. 6, Lucent Blvd. and C-470 Interchange, East and West Interchanges for U.S. 36 at Interlocken Loop, State Highway 40 Limon to Hugo, and State Highway 50C in Pueblo, and the Park Avenue Viaduct from the Platte River to Blake Street.
- Performed nondestructive deflection testing and overlay analysis for agencies such as the E-470 Public Highway Authority and CDOT. The pavement analysis was performed through the use of a Falling Weight Deflectometer (FWD) to determine the existing structural capacity of the pavement section and underlying subgrade materials for estimation of remaining pavement life and overlay requirements. The evaluation and analysis has been performed for a wide range of facilities including major interstate highways, low volume streets, airfield pavements and parking lot facilities.



INNOVATIVE ENGINEERING SOLUTIONS

AQUA Engineering UT
533 W 2600 S, Suite 275
Bountiful, UT 84010
801.299.1327

SKM Engineering
533 W 2600 S, Suite 25
Bountiful, UT 84010
801.677.0011

AQUA Engineering CO
5325 S Valentia Way
Greenwood Village, CO 80111
720.667.1250

Aqua Environmental Services, Inc.
89 Monarch Dr
Bountiful, UT 84010
801.694.9106

AQUA Engineering

Town of Johnstown Water Treatment Facility Expansion and Upgrades - Fee Summary and Options. 2-5-21

Design Element	Fee
Filtration Capacity Expansion Options	
1 - Conventional Mixed Media Filters w/New Filter Building	\$720,123
2 - Pressure Membranes w/New Filter Building	
4 - Ceramic Membranes, w/New Filter Building	
--OR--	
3 - Submerged Membranes with Retrofit of Existing Filter Building	\$537,912
Taste and Odor Control Options	
A - Ozone w/New Concrete Contactors and Building	\$308,910
--OR--	
B - UV/AOP w/New Building	\$278,019
C - Optional GAC Polishing Filter, Retrofit Existing Filters	\$200,000

Notes and Clarifications:

1. Total Fee will be the sum of one of the selected Filtration Options and one of the T&O Options. Proposed fees are based on our understanding of the Town's intent to construct improvements quickly to meet increased demands and address water quality (T&O)
2. Filtration Options include preliminary engineering services for identifying T&O alternatives and can be reduced to accommodate the Town's budget and direction on the complete scope of work to be included in the Project.
3. Raw and finished (distribution) water pump station and pipeline designs are not currently included and will be defined and budgeted upon the Town's selection of its preferred scope.
3. Lonetree Raw Water PS and pipeline and East DS PS designs are not currently included and will be defined and budgeted upon the Town's selection of its preferred scope.

 Innovative Engineering Solutions		Town of Johnstown Water Treatment Plant Expansion																	\$846,822					February 5, 2021									
		FEE for Submerged Membrane Retrofit with Ozone for Taste and Odor Control																															
		LEVEL OF EFFORT (hours)																	Total AQUA Labor \$	Subconsultants					Travel Expenses	Direct Expenses	AQUA Expenses and Subs Markup	Total AQUA Fee					
		PIC	PM / Lead Engineer	Sr. Site Civil Engineer	Site Civil Engineer	Principal Structural Engineer	Sr. Process Eng III	Engineer I	Principal Electrical Eng.	Electrical Engineer III	Electrical Engineer II	Controls Engineer	Sr. Electrical Designer	Sr. CAD Designer	Sr. CAD Designer	Designer	Project Admin	Kumar and Associates (Geotech)		Altura (Surveying)	Kahuna(Lidar - 3D Modeling)	EDOS (Architectural)	Galloway Engineering (HVAC)	10%									
TASKS AND SUBTASKS		\$190/hr	\$180/hr	\$165/hr	\$150/hr	\$180/hr	\$165/hr	\$125/hr	\$175/hr	\$165/hr	\$155/hr	\$135/hr	\$115/hr	\$115/hr	\$115/hr	\$105/hr	\$85/hr																
100	Project Initiation/Coordination	30	142	4		4	100		6								50	336	\$54,440									\$2,580	\$378	\$58,598			
		\$5,700	\$25,560	\$660		\$720	\$16,500		\$1,050								\$4,250																
101	Existing WTP Operations and Facility Review		12				24											36	\$6,120									\$300	\$30	\$6,450			
102	Project Kickoff Meeting	6	10	4		4	12		6									42	\$7,350						\$1,200	\$300	\$150			\$9,000			
103	TM #1 - Level of Service Goals & Existing Conditions	4	16				20											40	\$6,940											\$6,940			
104	Project Coordination	20	104				44										50	218	\$34,030									\$1,980	\$198	\$36,208			
200	Alternatives Evaluation	12	72	12		12	44	46	16	8				32	66			320	\$47,780	\$14,000	\$10,000	\$13,500		\$5,000			\$1,050	\$4,715	\$99,645				
		\$2,280	\$12,960	\$1,980		\$2,160	\$7,260	\$5,750	\$2,800	\$1,320				\$3,680	\$7,590																		
201	Site Visits & Date Review		16	8		8	8	12	8	8								68	\$11,180						\$2,400	\$750	\$315			\$14,645			
202	TM #2 - Alternatives Evaluation	4	40				20	30						24	50			168	\$23,520					\$5,000				\$500		\$29,020			
203	Workshop No. 1	4	8	4		4	8	4	8					8	16			64	\$9,560						\$1,200	\$300	\$150			\$11,210			
204	Geotech,Survey, and 3D Lidar Model						4											4	\$660	\$14,000	\$10,000	\$13,500							\$41,910				
205	QAQC	4	8				4											16	\$2,860											\$2,860			
300	Preliminary Design	20	108	48	36	32	144	48	32	28	8	8	80	28	96	80	8	804	\$117,160				\$5,000	\$10,000			\$1,000	\$1,720	\$136,080				
		\$3,800	\$19,440	\$7,920	\$5,400	\$5,760	\$23,760	\$6,000	\$5,600	\$4,620	\$1,240	\$1,080	\$9,200	\$3,220	\$11,040	\$8,400	\$680																
301	Preliminary Engineering Report	8	20	4	16	4	64		8	8		8					4	144	\$23,600				\$5,000					\$500	\$500	\$29,100			
302	30% Design Progress Package		60	32	20	16	60	40	8	16	8		80	20	80	80		520	\$71,240					\$10,000			\$500	\$1,050		\$82,790			
303	Workshop No. 2	4	12	4		4	8	8	8					8	16			72	\$10,780						\$1,200	\$500	\$170			\$12,650			
304	CMAR Procurement Assistance	4	8	4			12										4	32	\$5,180											\$5,180			
305	QAQC	4	8	4		8			8	4								36	\$6,360											\$6,360			
400	60% Design Progress	18	86	36	20	32	100	104	36	24	20	8	80	28	88	80		760	\$108,480				\$8,000	\$8,000			\$500	\$1,770	\$127,950				
		\$3,420	\$15,480	\$5,940	\$3,000	\$5,760	\$16,500	\$13,000	\$6,300	\$3,960	\$3,100	\$1,080	\$9,200	\$3,220	\$10,120	\$8,400																	
401	Prepare 60% Design Review Package	4	50	20	20	16	60	80	20	16	20	8	80	20	80	80		574	\$78,260					\$8,000	\$8,000				\$1,600	\$95,860			
402	Finalize Preliminary Engineering Report	2	16	4		4	24	24										74	\$11,600											\$11,600			
403	Workshop No. 3	4	12	4	4	4	16		8					8	8			64	\$10,180						\$1,200	\$500	\$170			\$12,050			
404	QAQC	8	8	8		8			8	8								48	\$8,440											\$8,440			
500	Final Design Progress	8	68	32	20	28	76	82	32	24	16	16	80	28	98	80		688	\$96,160				\$8	\$16,000			\$500	\$1,771	\$115,639				
		\$1,520	\$12,240	\$5,280	\$3,000	\$5,040	\$12,540	\$10,250	\$5,600	\$3,960	\$2,480	\$2,160	\$9,200	\$3,220	\$11,270	\$8,400																	
501	Prepare Final Design Review Package		40	20	20	16	40	50	16	16	16	16	80	20	80	80		510	\$68,410					\$8	\$8,000				\$801	\$77,219			
502	Prepare CDPHE Review Submittal		8				8	8										24	\$3,760											\$3,760			
503	Workshop No. 4		12	4		4	8	4	8					8	8			56	\$8,600						\$1,200	\$500	\$170			\$10,470			
504	Prepare Issue for Bid Package(s)		8				20	20							10			58	\$8,390					\$8,000					\$800	\$17,190			
505	QAQC	8		8		8			8	8								40	\$7,000											\$7,000			
550	Taste & Odor Design (Optional)	34	190	104	220	88	170	190	20	40	20		200	280	300	280		2136	\$290,760				\$7,500	\$9,000				\$1,650	\$308,910				
		\$6,460	\$34,200	\$17,160	\$33,000	\$15,840	\$28,050	\$23,750	\$3,500	\$6,600	\$3,100		\$23,000	\$32,200	\$34,500	\$29,400																	
551	Alternatives Evaluation	4																4	\$760											\$760			
552	Option A1 Ozone: Preliminary Design Progress	10	50	32	60	24	50	50	6	12	6		60	80	80	80		600	\$81,660					\$2,500	\$3,000			\$550		\$87,710			
553	Option A1 Ozone: 60% Design Progress	10	70	32	80	32	80	60	8	16	8		80	100	100	100		776	\$106,220					\$2,500	\$3,000			\$550		\$112,270			
554	Option A1 Ozone: Final Design Progress	10	70	40	80	32	40	80	6	12	6		60	100	120	100		756	\$102,120					\$2,500	\$3,000			\$550		\$108,170			
Project Fee Summary		122	666	236	296	196	634	470	142	124	64	32	440	396	648	520	58	5,044	714,780	14,000	10,000	13,500	20,508	48,000	8,400	5,630	12,004			\$846,822			
		Task Hours																	Task Fees														
		\$23,180	\$119,880	\$38,940	\$44,400	\$35,280	\$104,610	\$58,750	\$24,850	\$20,460	\$9,920	\$4,320	\$50,600	\$45,540	\$74,520	\$54,600	\$4,930																

 Innovative Engineering Solutions		Town of Johnstown Water Treatment Plant Expansion																		\$1,029,033					February 5, 2021						
		FEE for Conventional Media OR Pressure Membrane Filtration with UV/AOP for Taste and Odor Control																													
		LEVEL OF EFFORT (hours)																		Total AQUA Labor \$	Subconsultants					Travel Expenses	Direct Expenses	AQUA Expenses and Subs Markup	Total AQUA Fee		
		PTC	PM / Lead Engineer	Sr. Site Civil Engineer	Site Civil Engineer	Principal Structural Engineer	Sr. Process Eng III	Engineer I	Principal Electrical Eng.	Electrical Engineer III	Electrical Engineer II	Controls Engineer	Sr. Electrical Designer	Sr. CAD Designer	Sr. CAD Designer	Designer	Project Admin	Total AQUA Hours	Kumar and Associates (Geotech)		Altura (Surveying)	Kahuna(Lidar - 3D Modeling)	EDOS (Architectural)	Galloway Engineering (HVAC)							
TASKS AND SUBTASKS		\$190/hr	\$180/hr	\$165/hr	\$150/hr	\$180/hr	\$165/hr	\$125/hr	\$175/hr	\$165/hr	\$155/hr	\$135/hr	\$115/hr	\$115/hr	\$115/hr	\$105/hr	\$85/hr									10%					
100	Project Initiation/Coordination	30	142	4		4	100		6								50	336	\$54,440							\$2,580	\$378	\$58,598			
		\$5,700	\$25,560	\$660		\$720	\$16,500		\$1,050								\$4,250														
101	Existing WTP Operations and Facility Review		12				24										36	\$6,120								\$300	\$30	\$6,450			
102	Project Kickoff Meeting	6	10	4		4	12		6								42	\$7,350						\$1,200	\$300	\$150	\$9,000				
103	TM #1 - Level of Service Goals & Existing Conditions	4	16				20										40	\$6,940										\$6,940			
104	Project Coordination	20	104				44										50	218	\$34,030							\$1,980	\$198	\$36,208			
200	Alternatives Evaluation	12	76	12		12	44	56	16	8			32	66				334	\$49,750	\$14,000	\$10,000	\$13,500		\$5,000		\$1,050	\$4,715	\$101,615			
		\$2,280	\$13,680	\$1,980		\$2,160	\$7,260	\$7,000	\$2,800	\$1,320			\$3,680	\$7,590																	
201	Site Visits & Date Review		16	8		8	8	12	8	8							68	\$11,180						\$2,400	\$750	\$315	\$14,645				
202	TM #2 - Alternatives Evaluation	4	40				20	40					24	50			178	\$24,770					\$5,000			\$500	\$30,270				
203	Workshop No. 1	4	12	4		4	8	4	8				8	16			68	\$10,280						\$1,200	\$300	\$150	\$11,930				
204	Geotech,Survey, and 3D Lidar Model						4										4	\$660	\$14,000	\$10,000	\$13,500					\$3,750	\$41,910				
205	QAQC	4	8				4										16	\$2,860										\$2,860			
300	Preliminary Design	20	128	48	96	48	184	108	34	32	10	8	100	108	116	80	8	1128	\$161,860				\$5,000	\$15,000		\$1,000	\$2,220	\$186,280			
		\$3,800	\$23,040	\$7,920	\$14,400	\$8,640	\$30,360	\$13,500	\$5,950	\$5,280	\$1,550	\$1,080	\$11,500	\$12,420	\$13,340	\$8,400	\$680														
301	Preliminary Engineering Report	8	20	4	16	4	64		8	8		8					4	144	\$23,600				\$5,000				\$500	\$29,100			
302	30% Design Progress Package		80	32	80	32	100	100	10	20	10		100	100	100	80		844	\$115,940					\$15,000		\$500	\$1,550	\$132,990			
303	Workshop No. 2	4	12	4		4	8	8	8				8	16			72	\$10,780						\$1,200	\$500	\$170	\$12,650				
304	CMAR Procurement Assistance	4	8	4			12										4	32	\$5,180									\$5,180			
305	QAQC	4	8	4		8			8	4							36	\$6,360										\$6,360			
400	60% Design Progress	18	136	56	80	40	140	184	36	50	20	8	210	108	108	100		1294	\$180,660				\$8,000	\$10,000		\$500	\$1,970	\$202,330			
		\$3,420	\$24,480	\$9,240	\$12,000	\$7,200	\$23,100	\$23,000	\$6,300	\$8,250	\$3,100	\$1,080	\$24,150	\$12,420	\$12,420	\$10,500															
401	Prepare 60% Design Review Package	4	100	40	80	24	100	160	20	42	20	8	210	100	100	100		1108	\$150,440				\$8,000	\$10,000			\$1,800	\$170,240			
402	Finalize Preliminary Engineering Report	2	16	4		4	24	24									74	\$11,600										\$11,600			
403	Workshop No. 3	4	12	4		4	16		8				8	8			64	\$10,180						\$1,200	\$500	\$170	\$12,050				
404	QAQC	8	8	8		8			8	8							48	\$8,440										\$8,440			
500	Final Design Progress	8	88	32	40	28	148		40	50	16	16	210	108	118	100		1002	\$138,630				\$10,000	\$18,000		\$500	\$2,970	\$171,300			
		\$1,520	\$15,840	\$5,280	\$6,000	\$5,040	\$24,420		\$7,000	\$8,250	\$2,480	\$2,160	\$24,150	\$12,420	\$13,570	\$10,500															
501	Prepare Final Design Review Package		60	20	40	16	80		16	42	16	16	210	100	100	100		816	\$108,200				\$10,000	\$10,000			\$2,000	\$130,200			
502	Prepare CDPHE Review Submittal		8				16										24	\$4,080										\$4,080			
503	Workshop No. 4		12	4		4	12		8				8	8			56	\$8,760						\$1,200	\$500	\$170	\$10,630				
504	Prepare Issue for Bid Package(s)		8				40							10			58	\$9,190					\$8,000			\$800	\$17,990				
505	QAQC	8		8		8			16	8							48	\$8,400										\$8,400			
550	Taste & Odor Design - Optional	34	190	104	220	88	170	190	20	40	20		200	280	300	280		2136	\$290,760				\$7,500	\$9,000			\$1,650	\$308,910			
		\$6,460	\$34,200	\$17,160	\$33,000	\$15,840	\$28,050	\$23,750	\$3,500	\$6,600	\$3,100		\$23,000	\$32,200	\$34,500	\$29,400															
551	Alternatives Evaluation	4															4	\$760										\$760			
552	Option A1 Ozone: Preliminary Design Progress	10	50	32	60	24	50	50	6	12	6		60	80	80	80		600	\$81,660				\$2,500	\$3,000			\$550	\$87,710			
553	Option A1 Ozone: 60% Design Progress	10	70	32	80	32	80	60	8	16	8		80	100	100	100		776	\$106,220				\$2,500	\$3,000			\$550	\$112,270			
554	Option A1 Ozone: Final Design Progress	10	70	40	80	32	40	80	6	12	6		60	100	120	100		756	\$102,120				\$2,500	\$3,000			\$550	\$108,170			
	Option A2- UV/AOP is about 10% less engineering																														
Project Fee Summary		122	760	256	436	220	786	538	152	180	66	32	720	636	708	560	58	6,230	876,100	14,000	10,000	13,500	30,500	57,000	8,400	5,630	13,903	\$1,029,033			
		Task Hours																													
		Task Fees																													
		\$23,180	\$136,800	\$42,240	\$65,400	\$39,600	\$129,690	\$67,250	\$26,600	\$29,700	\$10,230	\$4,320	\$82,800	\$73,140	\$81,420	\$58,800	\$4,930														

Town of Johnstown

February 5, 2021 // Proposal

Professional Engineering Services for
Expansion Design of the Town of Johnstown

WATER TREATMENT PLANT EXPANSION FROM 5 MGD TO 10

Carollo's treatment approach cost-effectively provides new capacity, reliable taste and odor control, and easy expandability within the available site footprint.

February 5, 2021

Mr. Marco Carani
Director of Public Works
Town of Johnstown
450 S. Parish Avenue
Johnstown, CO 80534

Subject: Design of the Town of Johnstown Water Treatment Plant Expansion

Dear Mr. Carani and Selection Committee Members:

Rapid demand growth and persistent taste and odor (T&O) concerns demand confidence in design solutions for the Town's Water Treatment Plant expansion. You simply don't have time for trial and error. Carollo's design approach will yield a cost-effective, reliable, operable system, rooted in the following success factors:

- **Immediate treatment capacity expansion.** Our team recognizes the need for increased capacity expansion of the Johnstown Water Treatment Plant. Our approach will fast-track the design while remaining collaborative to include your input in defining treatment drivers and goals, which will lead to the right process selection. Our team is well-versed in every project delivery method; we will help you choose the project delivery approach that best meets your needs. We can leverage established CMAR procurement documents to minimize contractor on-boarding time if CMAR is deemed best for this project, and we can help you identify funding options for the project.
- **Addressing water quality challenges.** We will quickly evaluate process alternatives in partnership with your operations team. We have data and experience (e.g., Greeley, Thornton, Centennial) showing that ozone and biofiltration can reliably address the persistent T&O issues as well as TOC reduction challenges, while fitting within the available site footprint and avoiding costly and operationally-intensive PAC feed. Especially when coupled with an oxidant, this process is far more effective than PAC, and membrane filtration is completely ineffective to address these water quality challenges.
- **Flexibility to accommodate future capacity increases.** Like you, we have our eye on the future and we'll build expandability into the design from day one. We've done this recently at plants in Greeley, Centennial, Colorado Springs, and across the Front Range. And we'll help you get the most out of your footprint – for example, we worked with CDPHE to gain approval of the state's highest filter loading rates in Colorado Springs, maximizing capacity in a set footprint.
- **Dedicated local resources.** With over 150 personnel in our three Front Range offices, we'll staff the project with a 100 percent local team covering all the necessary design disciplines. The depth and breadth of our local resources, with established working relationships, provides a team you can rely on.

We look forward to collaborating with you on innovative solutions to deliver a cost-effective and highly successful project that quickly addresses your customers' capacity and water quality needs.

Sincerely,

CAROLLO ENGINEERS, INC.



Jason Assouline, PE
Project Manager



Vincent Hart, PE
Principal-in-Charge

SECTION

1

Identification of Proposer

Company Information

Since our founding in 1933, Carollo has been a leading expert in the planning, design, and construction management of water projects for municipalities across the country...**Water is all we do.**

Firm background

Carollo Engineers is an environmental engineering firm specializing in the planning, design, and construction of water and wastewater facilities and supporting infrastructure. Carollo's reputation is based upon exceptional client service and a continual commitment to quality. We currently maintain 49 offices throughout the U.S. During our 88-year history, Carollo has successfully completed more than 25,000 projects for public sector clients. We have provided engineering services for numerous water treatment plant designs for clients throughout Colorado with similar design challenges as the Town of Johnstown. Carollo is focused on client service, and values the interactive and collaborative relationships with the utilities with which we work.

Unlike the majority of our competitors, Carollo only provides water and wastewater engineering services. Our nationwide technical staff have an extensive background and training specific to this field. For that reason, the quality and professional standing of our core group of water and wastewater professionals equals or exceeds that provided by some of the largest engineering firms in the country.

Resources

Carollo's staff numbers more than 1,100 employees including more than 500 registered engineers. We are a full-service company with the experience and qualified professionals to successfully manage projects of any size. Our staff includes civil, sanitary, environmental, electrical, mechanical, chemical, structural, control system, and corrosion control engineers, as well as architects, planners, and specialists in other areas. Subconsultants are retained as needed in specialized fields depending on the specific needs of the project.

Carollo in Colorado

Carollo has been providing engineering services in Colorado for 25 years. Our Colorado operations started in Broomfield in 1996, followed shortly thereafter by offices in Littleton and Fort Collins. We continue to expand with highly motivated and talented personnel focused on providing engineering services to our municipal water and wastewater clients. Carollo's Colorado offices currently have over 150 employees including a professional staff of engineers, as well as additional personnel that provide technical and administrative support.

A Complete Colorado Team + National Subject Matter Experts for Johnstown

Our three local offices (Broomfield, Littleton, and Fort Collins) are the primary offices that will manage and execute this work for the Town. Our local offices house some of our firm's most well-known and respected water experts, not just at Carollo, but throughout our industry. We have the right local technical know-how backed by national support, and the necessary bandwidth and resources to support your projects for the long-term.



Identification of Proposer

Jason and Vincent as well as the rest of the project team are located in Carollo's Broomfield Office.

PROPOSER

Production Office:
Carollo Engineers, Inc.
390 Interlocken Crescent, Suite 800
Broomfield, Colorado 80021
P| 303.635.1220

PROJECT CONTACTS

Project Manager: Jason Assouline
P| 303.404.6372
E| jassouline@carollo.com

Principal-in-Charge: Vincent Hart
P| 303.404.6324
E| vhart@carollo.com



Carollo ranks number one among all design firms who work solely in water/wastewater, based on **ENR's "Top 500 Design Firms"** ranking.

Subconsultant firms on the core delivery team

As the prime consultant we selected the subconsultants on our team as a strategic partners in our team's success. There are a multitude of reasons that we value these subconsultants who we have worked with on several recent projects. Foremost, they each bring specific expertise that we know will add tremendous value to the project. The combined diversity of our experience and perspectives results in more robust solutions for you. Our collective team brings a keen understanding and unique perspective to your project, enabling us to tailor our approach and our deliverables to better serve your needs.

Lithos Engineering

Lithos Engineering focuses on geotechnical, tunnel, trenchless, and geological engineering and design services through innovative, collaborative, client focused consulting uniquely tailored to suit the needs of their clients and projects. Lithos staff has provided geotechnical engineering and design services for hundreds of projects around Colorado and beyond, and is experienced in geotechnical design, feasibility studies, and contract document preparation. Steve Kuehr has supported more than 95 percent of Carollo's Front Range design projects. He continually proves himself as reliable and trustworthy for quality results and understand Colorado-specific geotechnical issues.



Lithos Engineering
Geotechnical Engineer
2750 S. Wadsworth Blvd, Suite D-200
Denver, CO 80227
P| 303.625.9502

Subconsultant Contact:
Steve Kuehr, PE
P| 720.316.4858
E| steve@lithoseng.com

Precision Survey & Mapping, Inc.

Precision Survey & Mapping, Inc., is a full service professional land surveying company located in Denver, with specific experience on numerous WTP projects with Carollo. Precision is known for their reasonable rates and dedication to on-time completion of projects while maintaining the flexibility that's required to provide outstanding customized service. Precision utilizes only cutting edge technology including GPS, Robotics Total Stations, and the newest technology, High Definition Survey (HDS) or 3D Laser Scanning, allowing them to maximize their quality, productivity, and efficiency.



Precision Surveying & Mapping
Surveying
9025 E. Kenyon Ave., #150, Denver, CO 80237
P| 303.753.9799

Subconsultant Contact:
Chris Juliana, PLS
P| 303.753.9799
E| chris.juliana@precision-survey.com

Short and Brennan Architects

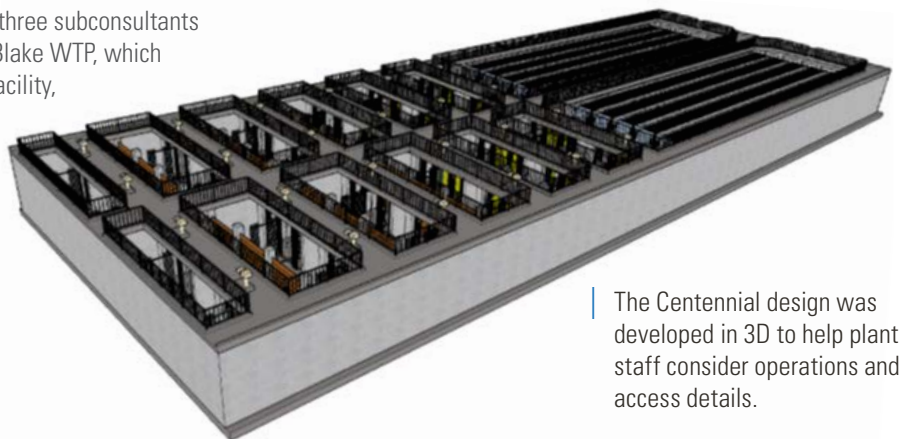
Short and Brennan Architects was founded in 1976, and is a professional design firm that offers comprehensive services in architecture, planning and programming, interior design, and project management. They have actively led and participated in community planning projects, and have designed and constructed projects on both new and existing water treatment plant sites. Their projects are successful because of their commitment to collaboration with the owner and the entire project team. Most recently, Short and Brennan has delivered water projects with Carollo for clients such as Greeley, South Adams County, and Centennial Water and Sanitation District (CWSD). Projects with Short & Brennan have been a mix of masonry structures and pre-fabricated metal buildings.



Short and Brennan Architects
Architectural
One Broadway, Suite A201,
Denver, CO 80203
P| 303.321.2043

Subconsultant Contact:
Greg Short, AIA, LEED AP, PMP
P| 303.321.2043
E| gshort@shortbrennan.com

Examples of Carollo's recent collaboration with all three subconsultants include the Phase I Improvements at Centennial's Blake WTP, which focused on overhauling the 44-mgd pretreatment facility, designing a new chemical building, and determining a comprehensive site plan. This team also collaborated on the City of Greeley's Boyd Lake WTP, which focused on ozone, biofiltration, and a new chemical facility.



The Centennial design was developed in 3D to help plant staff consider operations and access details.

SECTION

2

Project Overview and Approach

We have carefully reviewed the RFP scope of services to devise solutions that will best meet the project objectives and priorities for the Johnstown WTP. The following pages outline our proposed approach and methodology to systematically address the goals of the project by cost-effectively increasing treatment capacity while improving water quality. The concepts present a unique approach that will cost-efficiently and effectively address your objectives for the project. Carollo's treatment approach directly removes taste and odor, reduces residuals production, and avoids the operational costs and headaches associated with PAC.

Project Understanding

Increasing the capacity of the Johnstown WTP (JWTP) is the cornerstone of this project. Inclusive of the plant expansion, there are several additional aspects of the project that cannot be overlooked. Based on our initial analysis of your system we have identified the following key success factors for your project:



Immediate capacity expansion

- Providing additional filter capacity
- Options for raw water and finished water conveyance to match the expanded treatment capacity
- Maintaining robust disinfection for the full range of plant flows and water qualities



Addressing water quality challenges

- Taste and odor (T&O) mitigation
- Additional TOC reduction
- Improving distribution residual chlorine stability



Flexibility to accommodate future capacity increases

- Modularity in capacity expansion and comprehensive site planning

Current treatment expansion must include flexibility for future projects

Each of these aspects are interrelated and a comprehensive solution to the JWTP expansion should include provisions which address all of the above. For example, increasing treatment capacity must be coupled with raw water and finished water pumping and conveyance infrastructure to reliably move water to and from the plant. TOC reduction is a fundamental treatment performance requirement which is essential for controlling disinfection byproduct formation. The current process does not consistently remove TOC, which could lead to elevated THM and HAA concentrations as well as presents challenges with maintaining chlorine residual within the distribution system. Increasing the capacity of the plant without providing additional TOC removal will further strain the ability of the DAF system to provide an effective pre-treatment barrier.

Although not directly capacity related, taste and odor is also at the forefront of the Town's treatment concerns. Increasing plant capacity without providing treatment processes capable of managing MIB and Geosmin in the source water will lead to additional customer complaints, which may impede the rapid growth in the system. A temporary PAC system is a logical near-term solution, however this should not be considered a feasible long-term solution due to the chemical costs as well as the increased residuals which will be generated with this process.

Our approach to solving these challenges is outlined in this proposal and will result in a project that holistically meets the project goal of increasing capacity while efficiently addressing a multitude of other treatment and capacity considerations. Equally important, our approach will not lose sight of capital cost or long-term operational costs, while maintaining operator friendly and low maintenance treatment processes, which build upon the familiarity of the existing treatment system.

Treatment Approach

Carollo's design will cost-effectively expand the JWTP capacity while enhancing water quality, with a particular focus on taste and odor removal. Neither Option 1 or 2 described in the RFP will reliably achieve both objectives. Expanding filtration capacity with filters similar to the existing filters (option 1) is feasible, but presents challenges for constructability adjacent to the existing filters and clearwell. Mimicking the existing filter design does not leverage the advancements in gravity filtration that have been established over the past decade, with higher filter loading rates that will allow increased capacity within the existing site.

Membrane filtration has a wide range of applications and has been implemented in Colorado at several treatment plants. Carollo's team has experience with membrane filtration (option 2) and we understand the advantages and limitations of this approach for the Town. While membranes can address the capacity expansion needs of the plant, this approach will not achieve the Town's goals for water quality improvement.

Our approach builds upon the current treatment with gravity filtration, but would implement the latest technologies for high rate biological filtration, and equipment such as plastic filter underdrains, backwashing (with air scour), and media retaining backwash troughs.

Carollo's treatment approach cost-effectively provides new capacity, reliable taste and odor control, and easy expandability within the available site footprint.

After evaluating options for treatment processes and site layout, including Options 1 and 2 from the RFP, Carollo identified a path forward that cost-effectively expands capacity while addressing critical T&O issues and facilitates low-cost future expansions as the Town grows. The table below provides a summary of some of

the key features of the three treatment options, demonstrating the advantages of Carollo's proposed "Option 3." These advantages are further highlighted in the site layout shown below and in the pages that follow.

Option	Effective T&O control and TOC removal	Expandable to 20+ mgd within site footprint?	Simple & familiar filter O&M	Requires new intermediate pumping	Sole source O&M parts	Existing filters online through construction	Fouling from PAC carryover
1: Duplicate existing filters	No	No	Yes	No	No	Potential	Potential
2: Membranes	No	Yes	No	Yes	Yes	No	Yes
3 (Recommended): Ozone / Biofiltration / UV	Yes	Yes	Yes	No	No	Yes	N/A (no PAC)





Addressing immediate capacity expansion needs

RFP Option 1 is to add two additional filters which match the existing filters at the JWTP. This option is a logical approach to expanding the capacity while maintaining the same treatment that the operations staff is accustomed to. Considerations for the location of the new filter and clearwell must take into account the limited space around the existing filter building, which impacts constructability and maintaining plant hydraulics. More importantly, while additional filters and an expanded clearwell may accomplish the immediate need for capacity expansion, this option will not address some of the additional critical success factors we have identified for the project such as additional TOC and T&O removal, nor will it provide a stepping stone for future capacity expansion beyond the current phase.

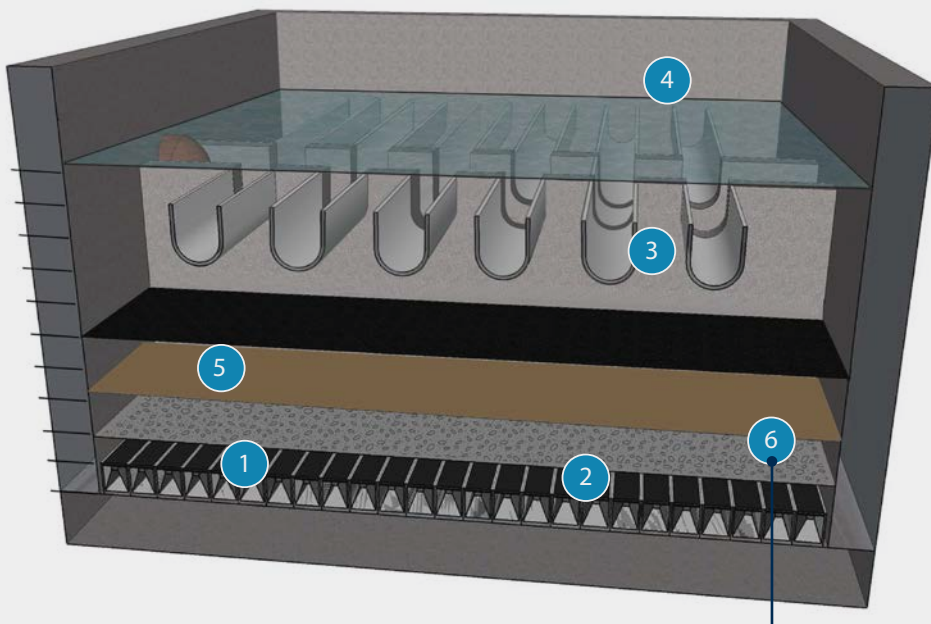
The pre-treatment at the JWTP is designed for 10 mgd and has proven itself capable of achieving this flow. While we agree that gravity filters are the best approach for expanding the capacity of the JWTP, matching the existing filter design does not leverage the numerous advancements in gravity filters that have been



Expanding the existing filter building requires extensive modifications to the backwash holding pond or a clarifier.

proven in the last 10-15 years. Carollo's concept for providing immediate filter capacity in a new filter building; the existing filters would provide supplemental capacity in the near-term and then repurposed as GAC contractors to augment T&O control after the new filters are re-rated at higher loading rates and the existing filters are no longer needed.

Cutting-edge considerations for gravity filtration.



- 1 Plastic block underdrains allow for air scour and biological filtration. These underdrains are cost effective (compared to stainless steel or nozzle/plenum), easy to install, and require no maintenance.
- 2 Air scour is much more effective and water-efficient means of backwashing than surface wash.
- 3 Media retaining troughs allow for more rapid and efficient backwashing.
- 4 Instrumentation such as EchoSmarts, measure backwash turbidity and media expansion to further reduce the time and water required for backwashing.
- 5 Rinse-to-waste can provide low startup turbidity without capital expenditures and minimizes filter-to-waste time (and volume).
- 6 Deep bed filters allow for higher loading rates and longer filter runs.

Membranes offer a rapid and seemingly cost-effective solution to immediate capacity expansion, but beware of hidden costs and operational complexity

RFP Option 2 is to implement membranes as a filtration alternative. There are several ways which microfiltration or ultrafiltration membranes could be implemented at the JWTP. Membranes provide a robust protozoa (*Cryptosporidium* and *Giardia*) barrier, allowing the chlorine contact to focus on virus inactivation within the existing clearwell and finished water tanks. Although membranes offer the advantage of consistently low turbidity filtrate in a highly automated system, membranes are typically not effective as a barrier for TOC or T&O compounds.



Pressure membranes are often designed in vertical racks, which require an intermediate pump station to provide the necessary inlet pressure to drive the water through the strainers and membranes. In this configuration, a new slab on grade structure, as described in the RFP, would be constructed. An alternative approach to implementing membranes would be to retrofit the existing filters with submerged membranes. This approach has been used at other locations with either vacuum pumping or low pressure (gravity) applications. The lower the available pressure, the lower the flux that the membrane can operate at. Lower flux (analogous to filter loading rate) translates to more membrane area required and thus more equipment (higher capital cost, expected to be several millions of dollars for 10-12 mgd of capacity).



Typical membrane racks can provide significant treatment capacity in a compact footprint but will require significant valves, instruments, and ancillary equipment.



Carollo has worked with the City of Thornton over the past several years to improve the reliability of the operation of the initially challenging submersible membrane system at the Wes Brown WTP.

Membranes also present challenges that should be taken into account when considering this option. In particular:

- Significant change for operators.
- Intermediate pumping.
- Submersible gravity membranes will require additional equipment and higher capital cost for equipment.
- Recurring cost for membrane replacement (typically every 5-10 years) translate to recurring costs of approximately \$2-3M.
- Reliance on a single vendor.
- Routine maintenance cleanings which require additional chemicals (sodium hypochlorite, citric acid, and/or sodium hydroxide), which must be stored on site and will be discharged to the WWTP on a regular basis in high concentration slugs.

- **Does not provide a barrier for TOC and T&O.**
- **Could be rapidly (and potentially irreversibly) fouled by PAC carryover.**

Raw water pumping and conveyance is key to expanding JWTP capacity

A solid understanding of the two raw water sources and the Town's needs and project drivers is critical to delivering smart raw water expansion solutions that align with long-term planning goals. While significantly more remote, the Lone Tree reservoir has a higher water quality and serves as the Town's primary raw water source. The Johnstown Reservoir is much closer in proximity, but has lower water quality contributing to taste and odor complaints, and is therefore used as a secondary peaking source during high demand periods.

With the planned JWTP improvements, it may be possible to reconsider source water usage and blending of the two sources to take advantage of existing raw water capacities. With new treatment options to address taste and odor at the JWTP, it may be possible to increase the blending percentage of Johnstown Reservoir, and defer some of the planned capacity improvements for the Lone Tree pumping and conveyance system.

Carollo will meet with plant and system operators early in the project to determine drivers for Lone Tree capacity expansion. Our approach will be to evaluate options that account for the key project success factors relevant to raw water expansion, including conveyance capacity, water quality, system operability, and fiscal alignment with other project priorities.

Carollo has developed some initial concepts and options for expansion of the raw water system.

Expand Lone Tree Reservoir conveyance capacity

This option would include expansion of the Lone Tree Reservoir pump station and conveyance pipeline, concurrent with the JWTP expansion. It would be implemented if blending with a higher percentage from Johnstown Reservoir would not result in an acceptable raw water source blend at the JWTP.

Expanded conveyance capacity could be done by paralleling the existing 10.6 mile, 16-inch pipeline, or direct removal and replacement of the existing line in the same alignment. Removal and replacement would add demolition and disposal cost to the project, but would not require acquisition of additional space for a parallel pipeline. This option would be considered if land acquisition and/or existing roadway right-of-way space were not available for a parallel pipeline.

Construction of a parallel pipeline would provide the Town with a new asset capable of meeting conveyance capacity within the planning horizon. In addition, the Town would retain the existing pipeline as an asset that could be rehabilitated. The existing pipeline could serve 2 purposes:

- Operable parallel conveyance pipeline to supplement and reduce the required size of the new parallel pipeline.
- Backup, redundant pipeline to be used during new pipeline maintenance or outages.

Pumping expansion will be also be required at the Lone Tree Reservoir. The existing pump station is a buried package station, equipped with three vertical turbine pumps with a predicted maximum capacity of 4.7 mgd.

Pipeline routing will take into consideration existing pipeline condition, removal & replacement versus paralleling, and available corridor space with consideration to land acquisition needs.



The pump station is subjected to relatively harsh environmental conditions, including high heat and humidity, which impacted mechanical and electrical equipment longevity. Ideally, the buried pump station would be replaced entirely with an above grade pump station, designed to meet near-term capacity requirements, with proper configuration for inexpensive, phased expansions to keep pace with growth. A new pump station would also implement hydraulically efficient design to minimize long-term energy usage. The benefits of implementing an energy efficient design could be evaluated in a present worth analysis to determine the pay-back period of capital cost versus energy savings.

In addition to long-term energy savings realized from an energy efficient design, Carollo will look into the potential to take advantage of available power company energy rebates. Rebates may be available for power saving projects that result in a demonstrable power saving and return on investment. For Centennial Water & Sanitation District's new Zone 4C Pump Station, Carollo coordinated with Xcel to obtain a pre-approved rebate of approximately \$220,000, in addition to an estimated \$125,000 in annual energy cost savings. Carollo's design approach incorporated a number of energy efficient design elements to maximize pump station efficiency. The Contract Documents for bidding included Net Present Value (NPV) requirements and energy efficiency guarantees. These provisions assured that the Owner could receive the Xcel energy rebate and the return on investment over the 25-year NPV period. Carollo has proven and successfully implemented this design approach, and we are ready to do the same for Johnstown.

Defer Lone Tree conveyance and pumping capacity

It is possible expansion of the Lone Tree raw water infrastructure could be deferred by increasing usage of Johnstown Reservoir source during high demands. With the planned treatment improvements at the JWTP, particularly taste and odor treatment, it may be feasible to significantly increase the blending percentage from Johnstown Reservoir. The current capacities of the Lone Tree and Johnstown pump stations are 4.7-mgd and 6.7-mgd, respectively, resulting in a maximum raw water capacity of 11.4-mgd. If a larger portion of the Johnstown Reservoir source can be used during peak summer months, this could present a short-term solution that allows the Town to defer this significant capital investment.

If deferment is deemed an acceptable solution, the Town may consider phasing Lone Tree raw water expansion, with construction of some elements concurrent with the JWTP improvements, and deferment of other elements. For example, if the existing pipeline is determined to be in suitable condition, the Town may opt to construct a new Lone Tree pump station to replace the buried package station. The new pump station could be equipped with pumps to meet near-term capacities, and expanded in the future when conveyance capacity is increased with a new pipeline.

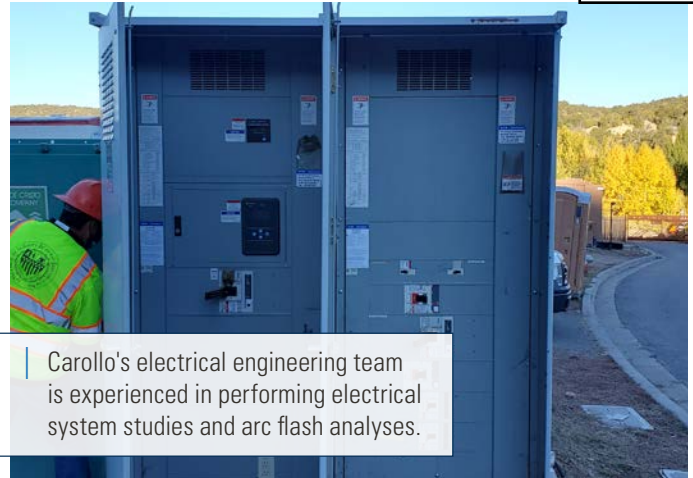
There are a number of phasing combinations if raw water expansion deferment is deemed a feasible option. Carollo is prepared to discuss all options with Town staff to determine a solution that meets Town goals and key success factors.

Energy efficient pump station layout results in long term energy savings and potential energy credits if offered by the power company.



Additional considerations to address immediate capacity expansion

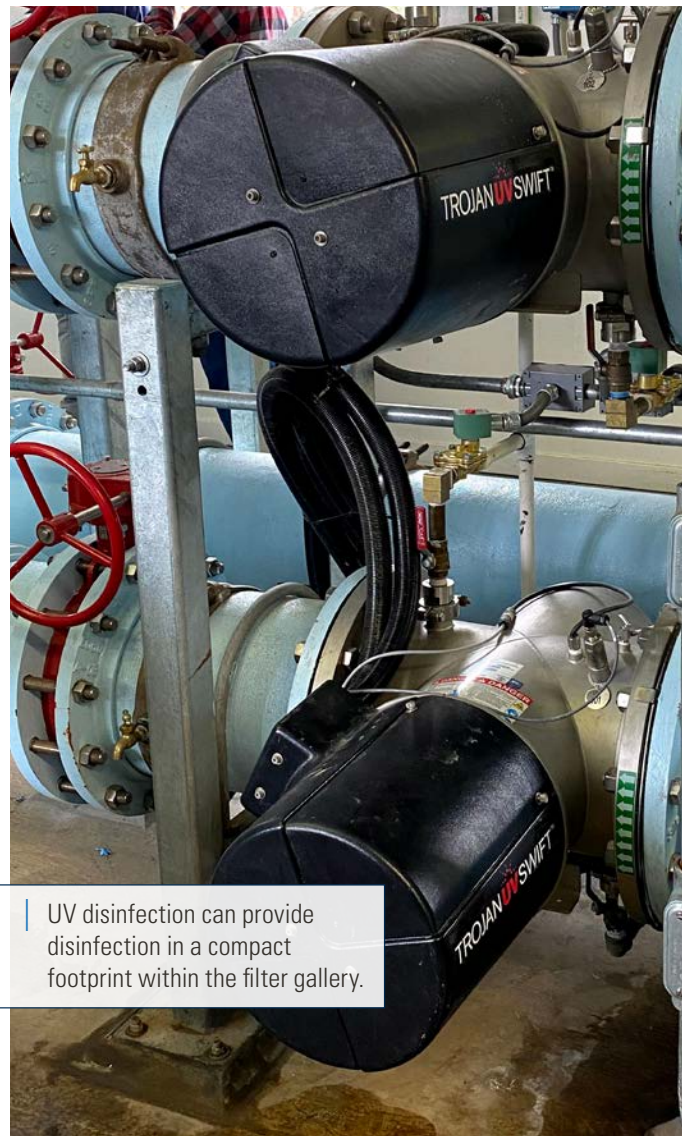
The Town indicated that the electrical system at the JWTP may require additional analysis during the design for the plant expansion. Carollo's electrical and I&C engineering hub is in the Denver area. This team not only supports design projects throughout the country, it also has specific expertise in electrical system analyses and arc flash studies. We are prepared to include an electrical system study as part of the preliminary design to evaluate how the electrical system can accommodate current and future plant expansion.



Carollo's electrical engineering team is experienced in performing electrical system studies and arc flash analyses.

Expanding disinfection capacity without increasing footprint

Providing additional CT for chlorine disinfection by expanding the clearwell or modifying/replacing the above ground tanks will require complicated and costly construction. A simple and cost effective approach to providing disinfection for the expanded capacity at the JWTP is with UV disinfection. Leveraging the combination of UV and free chlorine disinfection optimizes the benefits of both disinfection processes. UV is a robust and efficient barrier for Cryptosporidium and Giardia while chlorine is highly effective at virus inactivation. Either individual or combined filter effluent UV can be implemented efficiently within the filter building footprint. Carollo's team has extensive experience analyzing and implementing both UV and chlorine disinfection systems. A recent disinfection evaluation project in Colorado included the design of a 12 mgd UV system. Budgetary quotes for the two 12-mgd UV reactors (1 duty and 1 standby) ranged from \$200,000 to \$300,000 and included both medium pressure and low pressure high output options to balance power and maintenance considerations. The system was designed to provide 0.5 log Giardia inactivation with as little as 2 lamps per reactor and a maximum connected load per reactor of 22 kW, which is equivalent to a 30 hp motor.



UV disinfection can provide disinfection in a compact footprint within the filter gallery.



Biofiltration (TOC removal and distribution chlorine system stability)

Biofiltration provides multiple treatment benefits to the Town. Well-designed biofilters provide a robust treatment barrier for taste and odor compounds such as MIB and Geosmin and reduction of TOC without compromising the fundamental treatment goal of turbidity and particle removal.

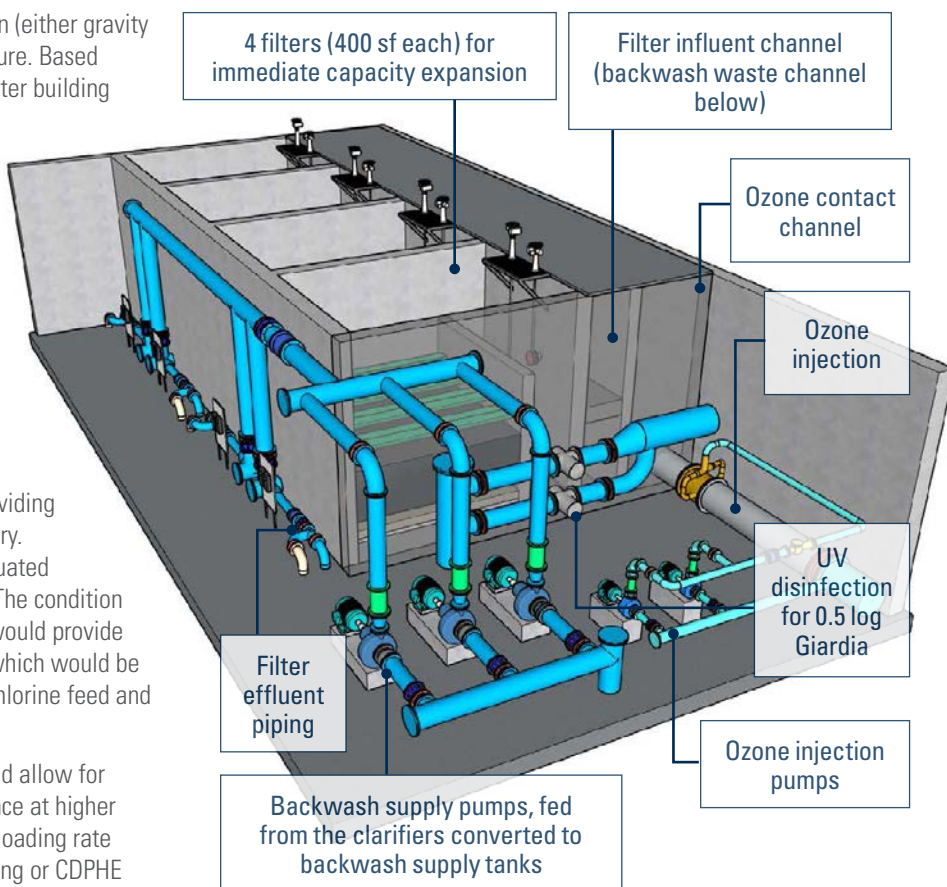
For any plant capacity expansion, additional filtration (either gravity filters or membranes) requires additional infrastructure. Based on our preliminary analysis of your system, a new filter building housing four new filters would provide a process able to reliably treat flows in excess of 12.5 mgd with flexibility to treat higher flows without additional infrastructure. An initial conceptual layout is presented with four filters, each 400 square feet in surface area.

These filters would be designed to operate at various loading rates to achieve near term treatment capacity objectives, expandability without additional infrastructure, and future additions to reach ultimate capacity goals.

In order to support the migration to biofiltration, providing a supply of unchlorinated backwash will be necessary. Repurposing the abandoned clarifiers, which are situated close to the new filter building may be the answer. The condition of the structures is unknown, however the volume would provide operational flexibility for backwash supply volume which would be independent of the clearwell and does not impact chlorine feed and disinfection.

To satisfy the rapid system growth, this design would allow for additional capacity based on proven filter performance at higher loading rates. Phase 1 is based on the current filter loading rate of 5 gpm/sf, which does not require additional piloting or CDPHE approval. The filters would be designed to operate at higher loading rates (7 gpm/sf or possibly higher), which could be proven by full-scale demonstration testing after the new filters have been commissioned (Phase 2). This allows the Town to address immediate capacity challenges, while allowing for additional capacity/growth without adding additional infrastructure. Phase 3 would add up to two additional filters to give the JWTP a firm filtration capacity (with one filter out of service) of at least 20 mgd.

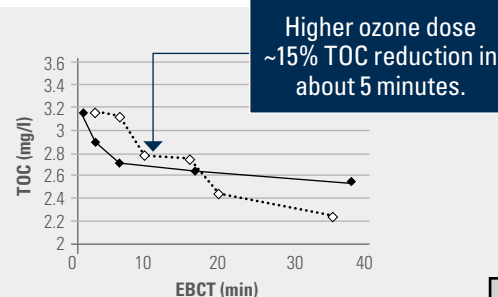
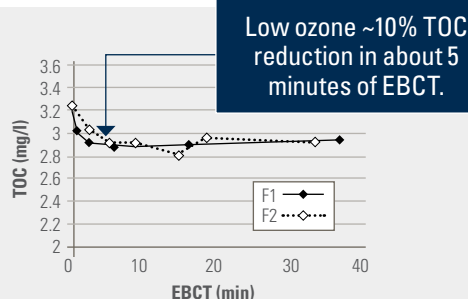
Carollo has implemented a similar filter design at the Colorado Springs Utilities Bailey WTP and other facilities across the country. Biofilters operate identically to conventional gravity filters, so this approach will be much more consistent with current operations compared to the membrane filtration approach options.



Carollo's initial concept for a new ozone, filtration, and UV disinfection facility.

TOC removal can challenge the existing DAF system, at times. Based on raw water TOC ranging from 3 to 4.6 mg/L, the ranges of TOC removal required is 15% to 35%, depending on alkalinity, to achieve the EPA's D/DBP Rule. Biological filtration provides a robust and consistent TOC removal barrier which can serve as a backstop for TOC removal through the DAF. There is a wide body of research and full scale biofiltration systems that demonstrates that an empty bed contact time of 5-10 minutes can provide 10-20% TOC reduction. Oxidation (i.e., ozone) upstream of the biofilters will further enhance the TOC removal through the biofilters.

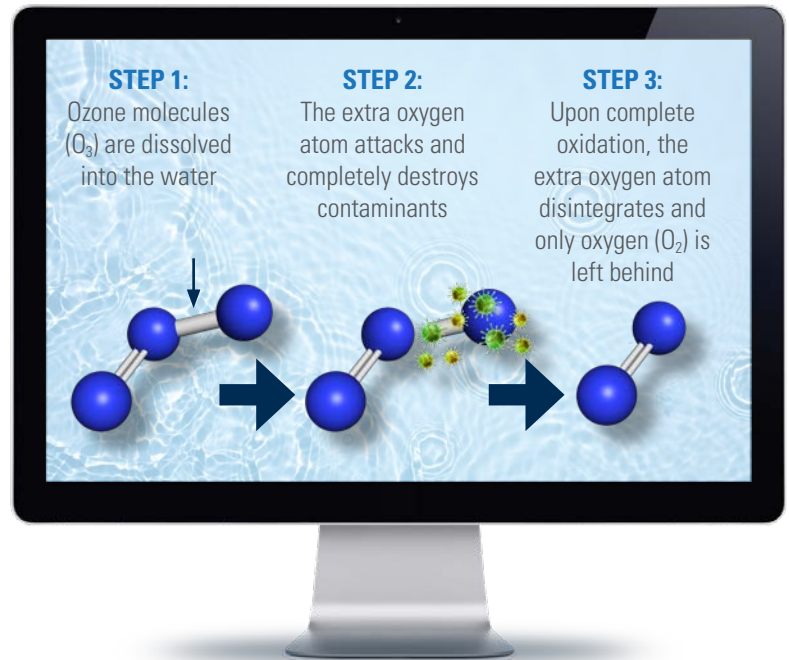
TOC Removal profiles in biofilters with low and high ozone dose (Melin and Odegaard, 2006) demonstrate effective TOC removal.



Ozone provides several water quality benefits and can be easily implemented to mitigate T&O and promote biofiltration

Raw water quality suggests a 2.0 log (99%) reduction of taste and odor compounds is necessary—this is not achievable with PAC alone. To address a variety of water quality and treatment challenges, we recommend considering ozone. Ozone is a strong oxidant that is highly effective at eliminating taste and odor events and will reduce residuals by eliminating the use of PAC. Combined ozone/peroxide systems can further enhance taste and odor oxidation in an even smaller contact basin footprint. Thornton's WTP (online) and Greeley's Boyd Lake WTP (in construction) utilize this approach, which ultimately reduced the size of their contact basins. We have designed many projects with ozone that have proven to provide an array of water quality benefits including:

- Oxidation of algal toxins (cyanotoxins, and microcystin).
- Oxidation of taste and odor compounds (Geosmin and methylisoborneol (MIB)).
- Oxidation of manganese.
- Reduction in color.
- Breakdown of natural organic matter—transformation of organic carbon (particularly recalcitrant organics) into assimilable organic carbon is beneficial for biological filtration. When dosed at sub-residual concentrations, it can provide effective oxidation with minimal to no byproduct formation (bromate) and no additional treatment solids/residuals that require dewatering and disposal. Carollo can conduct ozone and ozone/peroxide demand and decay testing as well as byproduct formation testing at our Water Applied Research Center (ARC®).



Schematic representation of how ozone attacks contaminants and organics.

The fundamental chemical used in an ozone system is liquid oxygen (LOX). LOX is a very inexpensive and readily available chemical with numerous suppliers across the Front Range. Comparing the annual cost of treatment between ozone and PAC, ozone is significantly less expensive when looking at overall chemical and power costs.

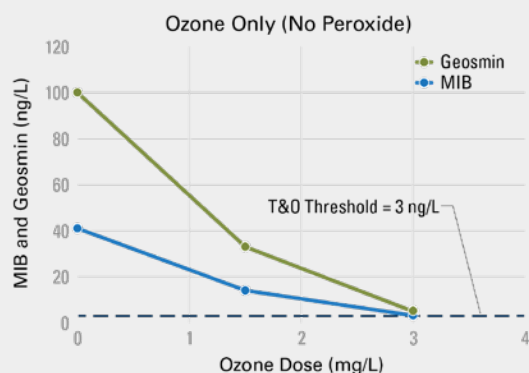
Outdoor LOX Tank installation at the Colorado Springs Utilities Bailey (SDS) WTP.



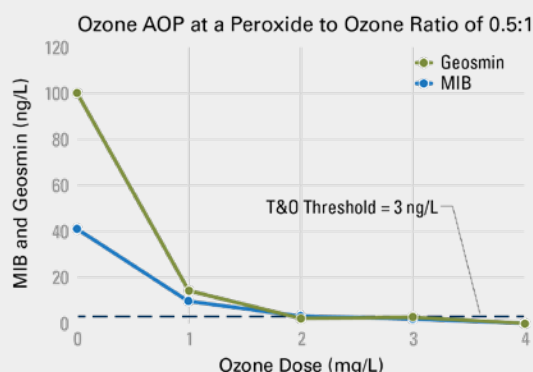
Parameter	Ozone	PAC	Notes
Cost per lb	\$0.04	\$1.00	PAC costs range from \$0.80 to \$1.20 per lb
Annual Chemical Cost	\$10,100	\$240,000	Assumes an ozone dose of 2 mg/L and PAC dose of 20 mg/l
Annual Power Cost	\$10,700	\$15,900	Assume \$0.10/kWh
Total O&M Cost	\$95,800	\$263,500	Assume 8 mgd for 180 days/year
Capital Cost	\$1,500,000	\$0 (assumed to be existing as of 2021)	LOX Tank and Ozone equipment only, ozone to be included in new filter building
Total Present Worth Cost	\$1,810,000	\$3,960,000	Based on 20 year life cycle cost at 3% interest rate

Factoring in capital costs and life-cycle costs, an ozone system will improve chemical handling and will be less expensive than operating PAC, with a return on investment of ~10 years.

At Greeley, ozone by itself required a dose greater than 3 mg/L to reach the T&O threshold.



By adding 0.75 to 1 mg/L of peroxide, the ozone dose for Greeley was reduced to 2 mg/L.



Optimizing the ozone system design provides cost-effective, robust treatment

As previously stated, ozone is a strong oxidant and it will serve the Town well for improving water quality, treatment reliability by producing a more filterable water, and residuals by eliminating the use of PAC (reducing plant O&M costs). While ozone alone has benefits, there are proven approaches that achieve water quality goals for this project.

Combined ozone/peroxide systems can further enhance taste and odor oxidation in an even smaller contact volume compared to ozone alone. Both Thornton and Greeley utilized this approach at their new facilities, which ultimately reduced their required ozone doses for T&O treatment by greater than 50 percent and shortened the required contact chamber detention time from 15 minutes to 5 minutes.

We have proven this concept with bench-scale testing at Carollo's industry-exclusive Water Applied Research Center (Water ARC®) facility at three Front Range utilities in the past three years. The ozone demand characteristics are unique for each water source and bench testing can be quickly completed to determine the right size of the new facility, such as ozone demand, dose optimization for taste and odor compound destruction, optimal peroxide-to-ozone ratios, and impacts on potential bromate formation. Based on our recent testing, ozone/peroxide is not only a more efficient taste and odor approach, but it effectively mitigates bromate formation compared to ozone only systems.

Recent bench testing we did for the City of Greeley and Centennial Water and Sanitation District showed that ozone by itself was less effective at oxidizing T&O compounds compared to ozone and hydrogen peroxide. The production of free radicals effectively and efficiently treats MIB and geosmin.



Capacity expansion and master planning the site is critical for near-term and long-term success

The Town is growing, and the added capacity of the current project will soon be outpaced by demand, requiring additional plant expansion. The current project must consider near-term and long-term capacity to address system demands with reliable treatment and provisions to make the next phase of expansion less costly and more efficient. Carollo has devised an approach that will support near term expansion of treatment capacity by adding a new filter facility which sets the Town up for flexible plant capacity increases. Incrementally, the first phase includes the addition of four new filters, which can be initially permitted at 5 gpm/sf, streamlining the regulatory approval process. The stand-alone new filter building would also allow for

construction to occur with minimal disruption to plant operations. Full scale demonstration testing (as our team successfully conducted for Longmont's Nelson Flanders WTP) can provide additional filter capacity without additional infrastructure.

To meet the ultimate plant capacity of approximately 20 to 24 mgd, new pretreatment would be required with two additional filters. To fully master plan the site, we have also included considerations for a new chemical facility, however this is not something that would need to be included in the near-term. Our initial concept for the JWTP site is shown on the following page.

Parameter	Phase 1*	Phase 2	Phase 3
Total Number of Filters	4	4	6
Loading Rate (gpm/sf)	5	7	7
Flow per Filter (mgd)	2.9	4	4
Total Filter Capacity (mgd)	11.5	16	24
Empty Bed Contact Time (minutes)	8.2	5.9	5.9

*The existing filters could be maintained to supplement available filter capacity prior to rerating of the new filters in Phase 2.

Our approach includes addressing immediate plant capacity expansion and includes provisions for future expansions, when the time is right



Proposed concept for new biofilters. This all-in-one facility would include a new ozone system, biofilters, UV disinfection, and backwash supply pumps.

Confidence in cost estimating supports decision making and planning

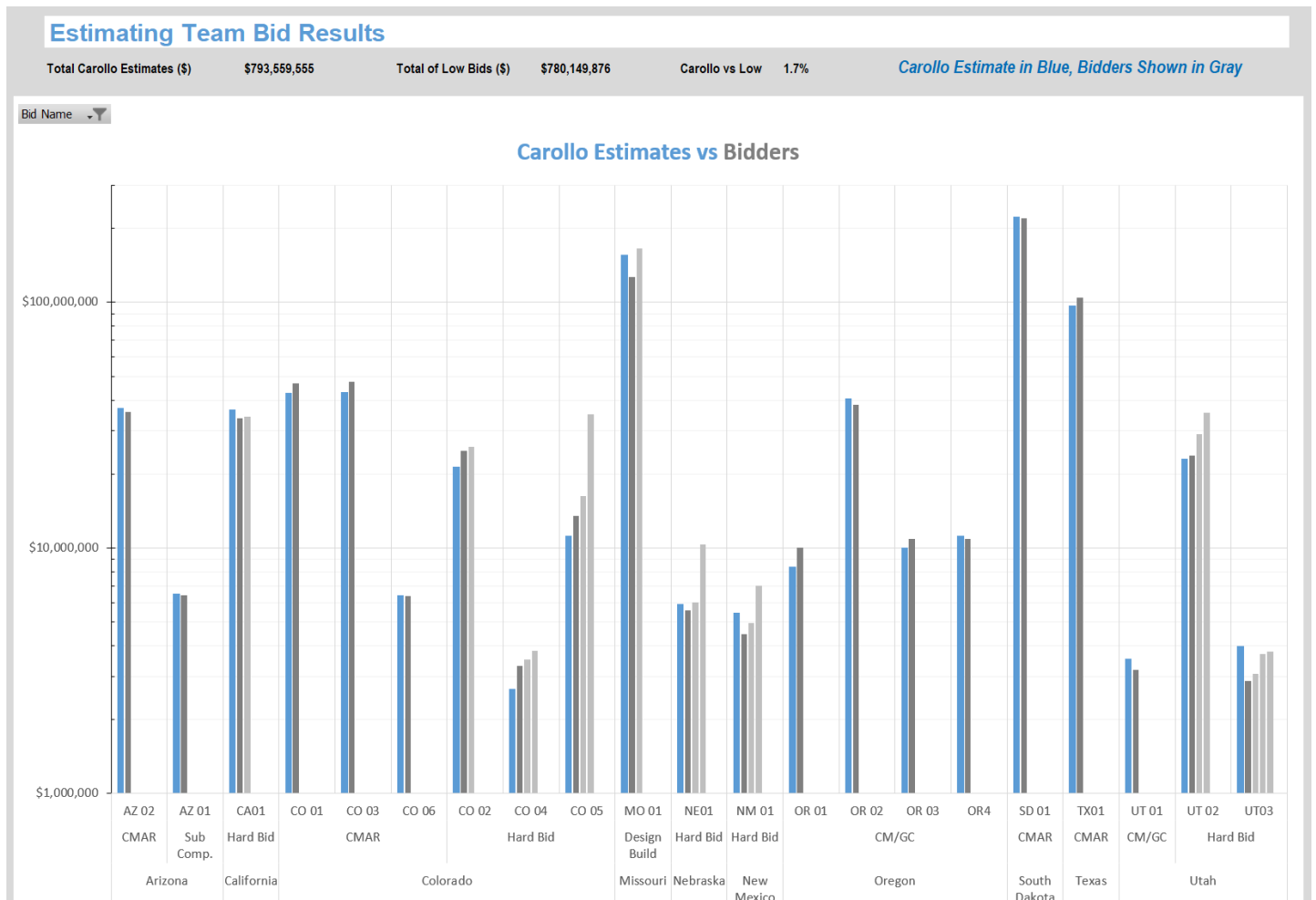
Expansion of the JWTP includes many components that will likely exceed the project budget envisioned in the 2015 master plan. Early cost certainty will allow the Town to plan for and acquire project funding.

Carollo's approach to cost estimating is specifically designed to replicate the pricing methods used by general contractors. We estimate costs with confidence thanks to the establishment of a dedicated team of full-time estimators in our Broomfield office who have all gained the majority of their professional experience working for general contractors or specialty subcontractors that focus on the water/wastewater market. This experience allows our team to not only anticipate the proper level of effort based on the complexity of the work, but anticipates a contractor's procurement strategy, both of which are critical to predicting project costs. Our team also

understands the importance of early cost certainty and works to not only price what is shown in the preliminary engineering documents but also what experience tells us will be required to construct the intent of the design.

Our team has implemented the use of industry-standard estimating software (Sage Estimating) and other quantity surveying tools that add quality and consistency to the cost estimating process. These tools allow us to more accurately identify project cost drivers and prioritize budgetary pricing requests from the market. Experience has shown that this approach is superior to relying on published pricing manuals created for the general construction industry. Carollo offers unique, construction-based cost estimating resources based in our Broomfield office that can provide you with reliable estimates that reduce bid day stress.

Recent estimates by our Broomfield-based estimating team have been right in line with bids on bid day or CMAR pricing



Carollo's local team can provide the Town with early certainty and project funding alternatives

Early Cost Certainty

We understand there is limited funding as this project was not foreseen. Our team's commitment is to establish cost certainty early in the project. To achieve this we will:

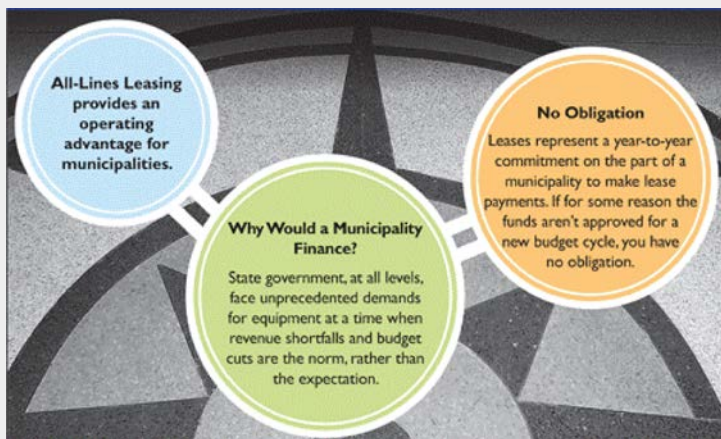
- 1 Provide Transparent Estimating – The Carollo Team embraces a true “open-book” cost process that develops a baseline early in planning, and documents any deviations. You will always know the budget, allowing you to make informed decisions on adding or deducting as needed. The most recent project costs are always at your fingertips!
- 2 Procure Equipment Early – Procuring the long-lead equipment with performance specifications following the process selection establishes equipment costs and allows design team to be more efficient.

Financing Approach

We will evaluate with you and document in the Basis of Design Report, the potential financial strategies to reduce or eliminate your up-front capital investments. Our team has established partnerships with a variety of funding providers and options for your considerations:

- 1 Private Equity Funding – Carollo has recent partnerships with Graham Financial and the Carlyle Group to provide private equity funding as needed. We realize this may be an opportunity for you to off-set the capital costs of the project. In our experience this type of financing adds a 15 to 25 percent premium to the long-term costs of the project.
- 2 Tax-Exempt Financing – Carollo has worked with David Clamage at Saulsbury Hill in evaluating tax-exempt financing options for Colorado projects. Outside of SRF funding or self-funded, this will be the least expensive option for financing the project.
- 3 Short-term equipment leasing – Depending on the technology evaluation, the equipment providers may have short-term leasing arrangements that could be considered.

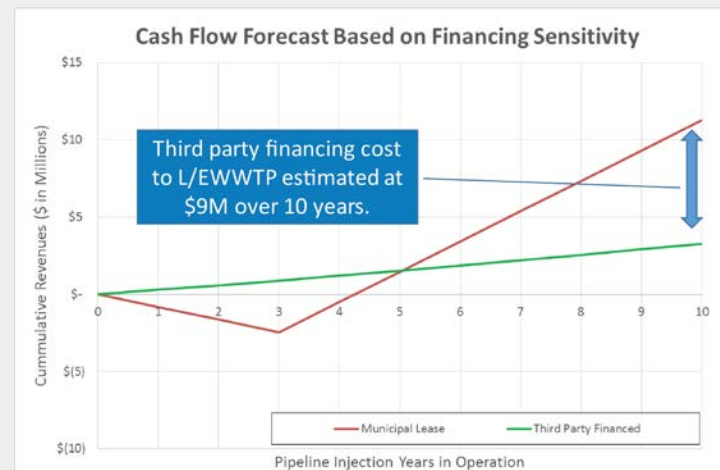
Multiple Lease Financing Provides Best Value Solution With Optimal Risk Profile



- Common financing tool
- State of Colorado
- No upfront capital \$
- Annual lease payments
- Risk managed
- Termination w/o penalty

Saulsbury Hill and Carollo recommended tax-exempt financing to Englewood's South Platte Renew Treatment Facility to finance their \$8 million dollar Biogas Project. Saulsbury Hill Financial is a finance company specializing in municipal leasing and energy performance contracting for Colorado municipalities.

Third Party Financing Reduces Financial Benefit And Requires Long-Term Agreement



Project delivery approach matters, and Carollo is prepared to guide the Town on alternative delivery options

Time is off the essence and Carollo's team has the necessary experience to collaborate with and advise the Town on deciding how to best delivery this project with an accelerated schedule. The 2015 master plan under-predicted the rapid growth the Town has experienced over the past couple of years. The implementation of plant capacity expansion must happen as quickly as possible, without losing sight of the important treatment considerations such as taste and odor, and TOC removal. Design-bid-build (DBB) is the typical project delivery approach, which relies on a close working relationship between the Town's project team and the engineer/designer. The owner maintains ultimate control in design decisions throughout the process and although this is the best way for the Town to maintain competitive bid-pricing for the project, it comes at a cost—the schedule. The DBB delivery approach takes the longest to complete from start of design to completing construction. Not only is there more time required during design, but there is also several months allocated for bidding and award.

Carollo understands that the Town is also considering ways to accelerate the implementation of the expansion project. Construction Manager-At-Risk (CMAR) is an alternative project delivery approach that is commonly implemented by many Front Range utilities. Our team has recently worked on CMAR projects for Greeley, South Adams County Water and Sanitation District, and Denver Water. This delivery approach provides the most benefit to the Owner when the project requires complicated retrofits of existing facilities where sequencing and constructability are critical success factors. Without

Jason's Experience

Design-Bid-Build	Aurora's Binney WPF (\$192 million) Santa Fe's Canyon Rd. WTP (\$15 million) – Process Lead or Project Manager for numerous projects in the past 10 years
CMAR	Greeley's Boyd Lake WTP Upgrades (\$16 million) – Project Manager Denver Water's Northwater Treatment Plant (through 30%) (\$475 million) – Process Lead for floc/sed and chemical facility
Fixed Price DB	Buckman Direct Diversion WTP (\$230 million) – Treatment Plant Operator Davis-Woodland WTP (\$230 million) – Process Lead
CMGC	Denver Water's Foothills CCB and Chemicals Improvement Project (\$35 million) – Process Lead

Throughout his career, Jason has gained experience in different project delivery models. In addition to many design-bid-build projects he has most recently worked with the City of Greeley on the Boyd Lake WTP Process Improvements project, which is being delivered as a CMAR.

Combined, your team leads, Jason Assouline and Vincent Hart, have experience in every type of delivery model. This kind of expertise and experience will benefit the Town in selecting the right delivery model for your needs.

active cost review oversight, this delivery approach may result in non-competitive pricing, challenges your ability to influence the design, and typically results in total project cost that is 5-7% higher than DBB. With the Town selecting an engineer at the onset of the project, this alternative approach would be the most straightforward option to pursue should you decide to accelerate the project schedule.

Design-Build (DB) and Progressive Design Build (PDB) are most commonly associated with alternative delivery and Carollo is also well versed in the many flavors of DB. Carollo has the in-house capability to lead a DB team on this project, should the Town decide at a later date to implement this approach (presumably in the PDB model). Fixed price DB is likely not a viable delivery option for this project since the scope of the project is not specifically defined. Fixed-price DB also does not offer the Town with the level of design input that you are interested in providing for the JWTP improvements.

Vinnie's Experience

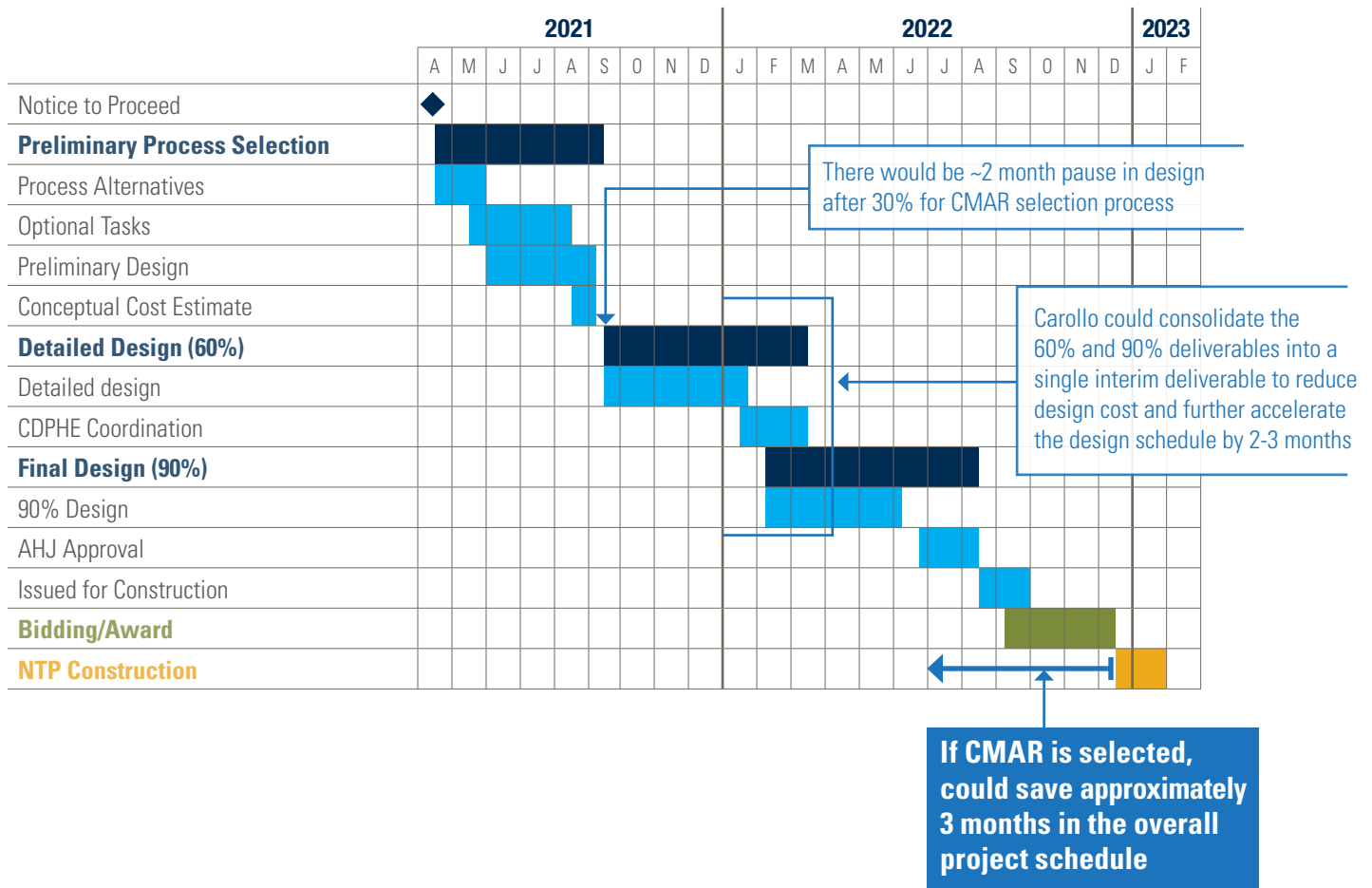
Design-Bid-Build	Project Manager on more than \$250 million in construction in the past 10 years
CMAR	South Adams Water and Sanitation District Pellet Softening Project (\$42 million) – Project Manager
Fixed Price DB	City of Westminster Northwest WTP (\$22 million) – Project Engineer with another firm
Engineer Led Fixed Price DB	Pinellas County, FL FOG Project (\$1 million) – Project Manager
30% GMP Progressive DB	City of Olathe, KS Northwest WTP (\$22 million) – Project Manager
60% GMP Progressive DB	Clifton Water District, CO Microfiltration Project (\$15.5 million) – Project Manager
100% GMP Progressive DB	Colorado Springs, CO Bailey (SDS) WTP (\$124 million) – Project Manager
Owner's Advisor	City of Houston, TX Northeast WTP (\$1,600 million) City of Thornton, CO Thornton WTP (\$100 million) East Cherry Creek Valley, CO North WTP Phase 2 Expansion (\$34 million)

Vinnie has been project manager on more than \$200 million in alternative delivery projects that cover the range of delivery mechanisms. He can provide the Town with details of each type of project delivery allowing you to pick a mechanism that best meets your needs.

Project Schedule Considerations

Developing a realistic schedule is another important project consideration. We understand the urgency in implementing solutions that can expand the treatment capacity of the JWTP, however promising a schedule that does not fully account for feasibility to design solutions that will meet all of the Town's needs could ultimately lead to higher overall project costs, unanticipated delays, and a system that simply does not work. Below is our initially

proposed schedule which sets the course for the project with rapid initial coordination and process selection with the Town. By the end of the summer, we could have a well thought out preliminary design and reliable cost estimate from which the Town can decide how to best proceed with the project (design-bid-build, accelerated design, or CMAR). Our team is flexible and prepared to support the Town in deciding how to best deliver the project.



SECTION

3

Management Approach

A Proactive Approach to Project Management

It All Starts with a Good Plan

In every project there are numerous details to address and decisions to be made. It's our job to deliver key information based on sound planning and analysis principles in accordance with the project schedule. By so doing, we put the entire project team—Johnstown and our Carollo Team—in the best position to finalize the details and make credible, defensible decisions for the WTP Expansion Project.

Managing a project is a lot easier when everyone works as a team, and the team works best when everyone understands the “game plan.” To make sure that everyone knows the “game plan”, the team works together at the onset of a project to develop a Project

Management Plan (PMP). The PMP sets goals and expectations for the project, as well as defines assignments and responsibilities to Johnstown and Carollo project team members.

The PMP not only sets roles and responsibilities for the team, but also establishes the control measures to manage cost, schedule, and scope. The benefit to the Town is that everyone knows who, what, when, and the level of effort anticipated for each deliverable. The PMP will serve as our guide to develop the project on schedule, within budget, in a quality manner, and consistent with your goals and objectives.

1 Monitoring, Tracking, and Communicating Project Scope, Schedule Cost, and Progress

We bear the responsibility and accountability to Johnstown to ensure that our team's scope, budget, and schedule are effectively managed for this project. We understand that schedule and cost management begin from the first day of project initiation in order to make sure the team member's tasks are aligned with the approved budget. Carollo utilizes earned value management analytical methods to accurately assess project budget and schedule status, as well as monitor progress and take appropriate corrective action, if required.

We develop a monthly report with our invoice that includes:

- **Scope Report.** A progress report of accomplishments, problems encountered or anticipated, a project decision log, and work scheduled for the next reporting period.
- **Cost Report.** A report with information on the current period and accumulated expenditures to date, approved not-to-exceed fee, estimated cost for completion, and a comparison of the latter two to show any variation. This will include design or task percent complete versus project area as tracked by task order.
- **Schedule Report.** A report confirming actual progress to planned performance. The report will include a description of known or possible impacts on the schedule and a presentation of deliverable submittal dates.

Our monthly progress report includes detailed scope, budget, and schedule updates using PMI and best management practices.



November 24, 2020
11253A.10

City of Greeley
1001 11th Street, 2nd Floor
Greeley, CO 80631

Attention: Mr. Peter Champion, PE

Subject: Progress Report
Boyd Lake WTP Improvements

Dear Mr. Champion:

The monthly progress report is presented in three sections: Scope Report, Budget Report, and Schedule Report. The invoice, corresponding to the scope, schedule, and budget described in this report is enclosed for your review and approval. This Progress Report, and related invoice, represents work completed through October 2014.

SCOPE REPORT

Work performed during this period is summarized below.

ACTIVITIES PERFORMED DURING OCTOBER 2014

Boyd Lake WTP Improvements

Task 1 - Project Management

- Team coordination and monthly progress tracking.

Task 2 - System Hydraulic Analysis

- Split Pressure Zone Evaluation Meeting
- Team Meeting
- Additional Hydraulic Analysis

Task 3 - Survey and Geotechnical Investigations

- No work performed.

Task 4 - Design of Boyd Lake WTP Facilities Improvements

- Continued 60% design activities.
- Preparation of 60% design documents.

City of Greeley
Page 3

The following table further summarizes the budget status by task.

Description	Contract Limit	Current Invoice	Total Invoice	%	Remaining
Task 1 - Project Management	\$27,500.00	\$1,100.00	\$10,800.00	28.2%	\$27,542.30
Task 2 - System Hydraulic Analysis	\$34,400.00	\$1,817.50	\$19,460.00	56.0%	\$14,983.50
Task 3 - Survey and Geotechnical Investigations	\$10,416.00	\$0.00	\$3,207.00	30.8%	\$7,009.00
Task 4 - Design of Boyd Lake Facilities Improvements	\$245,045.00	\$51,856.88	\$148,823.42	43.1%	\$196,221.58
PROJECT TOTAL	\$407,466.00	\$54,774.31	\$182,179.74	42.6%	\$245,686.26

BUDGET/SCHEDULE REPORT

None.

Please contact us if you have any questions on this project.

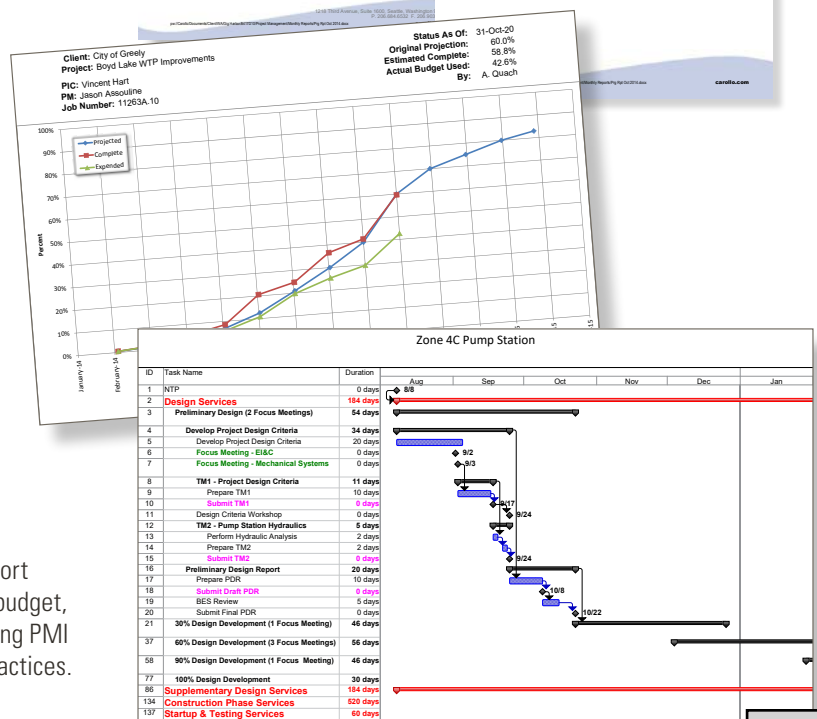
Sincerely,

CAROLLO ENGINEERS, INC.

Wayne Olson, P.E.

Enclosures: Invoice No. 135341

S-curve



2 Monitoring, Tracking, and Resolving Issues and Concerns in a Timely Manner

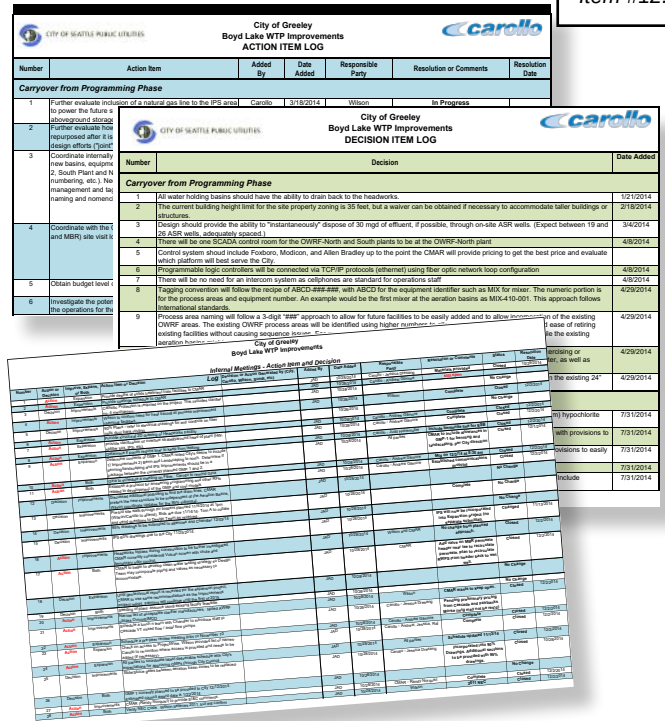
Similar to the tracking, documenting, and resolution of scope, schedule, and budget concerns, tracking and resolving project issues in a timely manner will be critical to the overall success of this project. We will accomplish this effort by effectively using action, issue, and decision logs to track those elements that affect the progress of the project and will communicate any issues to Johnstown as part of our monthly status reporting.

3 Ensuring accuracy of Project Status Reports

Our team believes in the importance of quality project status reports and deliverables, particularly as they relate to the large proportion of work being completed by a diverse team of specialists. Our approach to quality is based on defining our Quality Management (QM) expectations upfront and applying the right reviews at the right time to ensure that the project starts off correctly and ends successfully. We have defined our quality management goals as:

- Minimizing errors and omissions in all work products.
- Controlling design and construction costs by “doing it right the first time.”
- Maintaining schedule and permit compliance through efficient delivery.

To achieve these goals and to meet our own quality expectations, we will regularly report in our project status report the status of the specific deliverables from each task, a log of review comments, changes made, and supporting documentation.

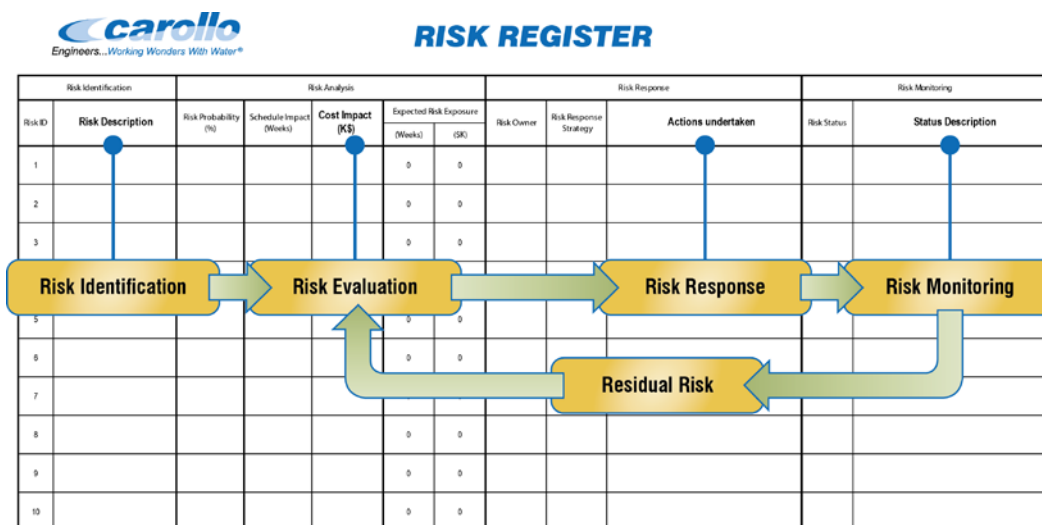


The image shows three overlapping project logs. The top log is the 'City of Greeley Boyd Lake WTP Improvements ACTION ITEM LOG' with columns for Number, Action Item, Added By, Date Added, Responsible Party, Resolution or Comments, and Resolution Date. The middle log is the 'City of Greeley Boyd Lake WTP Improvements DECISION LOG' with columns for Number, Decision, and Date Added. The bottom log is a detailed 'Boyd Lake WTP Improvements' log with columns for Item, Description, Status, and Date. All logs include a 'Carryover from Programming Phase' section.

4 Managing and Communicating Risks to Johnstown

The PMP will include a Risk Management Plan that describes the risk management processes and approach we will use for this project. This guidance documentation is essential to proactively facilitate the resolution of challenges that need direction from Johnstown and the project team to control cost and provide schedule compliance. It will be accompanied by a collaboratively developed Risk Register that identifies and describes each risk, scores them for likelihood and consequence, and shows planned mitigation, avoidance, and monitoring measures.

Our approach will seek to identify and obtain consensus by project stakeholders on critical decisions at the earliest possible date. Throughout the project, the Carollo Team will continue to identify and evaluate the individual project risks associated with cost, schedule, quality, and/or safety.



5 Communication Plan – Ensuring Team Members Interact Effectively

Our communication plan is centered on avoiding surprises through effective communication. Carollo knows the value of listening to our clients and the community and recognizes that successful projects result from our staff working as an extension of your staff. This commitment to listening and valuing client input is the cornerstone of Carollo's 88 years of success. We take pride in the large number of clients with whom we have maintained continuing relationships. We have worked with some clients for over eight decades—validating the quality of our work, cost control, and ability to meet schedules.

Quality Control Procedures

Carollo's quality process begins at project initiation and continues through successful completion. Following task award, Carollo drafts a project-specific Quality Assurance/Quality Control (QA/QC) Plan and makes sure all project staff fully understand it, and in agreement with regard to implementation.

Adherence to QC checklists in our quality plan helps ensure that any non-conformances and deficiencies are identified, documented, corrected, and do not reoccur. In addition to review of work by senior engineers and professionals, our construction managers review and verify that the project team's construction documents are according to the requirements set forth in the contract and that construction constraints and sequencing is well defined.

Qualified specialists conduct routine internal audits on our project delivery. The audit process evaluates adherence to the QA/QC Plan and includes a review of how our staff and subconsultants are performing. They work with our project managers and technical leads to develop mentoring plans and/or provide more oversight when needed to improve quality.

Carollo's QA/QC process covers each phase of your project

The flowchart below summarizes key aspects of Carollo's QA/QC approach for each phase of the project.

PROJECTS START

- PM reviews Carollo's quality management manual
- PM reviews appropriate project flowchart
- PM prepares project management plan
- PM reports QA/QC milestones to quality manager

REPORT PHASE

- Technical experts perform baseline peer review
- PM reviews applicable past project examples
- PM reviews Carollo's guidelines for reports
- PEs and reviewers conduct reviews using checklists

DESIGN PHASE

- Technical experts perform peer review
- PM updates Carollo project management plan
- PM reviews Carollo's final design checking procedure prior to final check
- Quality manager performs 30%, 60%, and 90% checks and constructability check

CONSTRUCTION PHASE

- Quality Manager assigns staff to review submittal and RFI responses, as well as any design changes
- Design team performs walkthroughs of constructed facilities
- Process experts assist with start-up and commissioning

SECTION

4

Staff Qualifications

Staff Qualifications

The key driver behind any successful project is the project team. Our team comes equipped with the right design and alternate delivery experience and process expertise necessary for the Johnstown WTP Expansion Project. More importantly, our team understands the importance of open and interactive collaboration regardless of the project delivery approach selected, and will keep that as a top priority from day one.



🔑 Key Team Member

Subconsultants

1- Short and Brennan Architects

2- Lithos Engineering

3- Precision Surveying & Mapping



Vincent Hart, PE 

**Principal-in-Charge
Technical Advisor**

Broomfield, CO

With Vinnie as your principal-in-charge and the project's technical advisor, you are getting someone who has your best interest in mind from day one, and has the expertise and experience to help guide the team on the right solutions for your needs. He is known throughout the industry for his innovative and collaborative approach to cost-effective water treatment design solutions. If you tour facilities that Vinnie has supported and managed, you will notice something, they are all different and tailored to the client's needs—not a cookie-cutter design that is pulled off the shelf and recycled at different utilities. Vinnie brings 27 years of experience in the planning, design, and expansion of water supply, water treatment, and water distribution facilities. His areas of expertise include WTP design and operation, ozone and chemical feed, taste and odor, dual media filtration (including biological filtration) for drinking water, and Colorado regulations.

Relevant Experience

- Project director for 50-mgd Edward W. Bailey WTP Design – Colorado Springs Utilities, CO
- Project manager for the Boyd Lake 40-mgd WTP Process Improvements Design – City of Greeley, CO
- Technical advisor for the 44-mgd Joseph Blake WTP Phase I Improvements Design Services – South Adams County Water and Sanitation District, CO
- Quality reviewer for the CDPHE Technical Guidance Manual on CFD Modeling of Chlorine Contact Basins (Carollo prepared document).
- Owner's advisor technical expert for pre-treatment for the 320-mgd Northeast Water Purification Plant – City of Houston, TX

Professional Engineer

CO – PE.0034164

Also licensed in: KS, MO, MN, NC, NJ, TN

Certification

LEED Accredited Professional

Client References

Peter Bong | Water/Wastewater Superintendent
Centennial Water & Sanitation District
P | 303.791.0430 E | pbong@cwsdhrmd.org
Worked on the MGWWTP Phase I Improvements and JBWTP Phase I Improvement Projects

Peter Champion, PE | Water Systems Engineer
City of Greeley
P | 970.350.9319 E | peter.champion@greeleygov.com
Project manager for the Boyd Lake WTP Improvements and Boyd and Bellvue Residuals Study

Dan Dilts | Operations Superintendent
Colorado Springs Utilities
P | 719.668.4511 E | ddilts@csu.org
Worked on the Edward W. Bailey Southern Delivery System Water Treatment Plant Design-Build



Jason Assouline, PE 

Project Manager

Broomfield, CO

Jason brings 17 years of experience and is a well-respected water treatment process engineer. With Jason as your project manager, you are getting someone who has the expertise and experience to help guide the team on the right solutions for your needs. He has particular expertise in the evaluation, design, and operation of flocculation/sedimentation, filtration, chemical systems, and solids handling systems, as well as advanced treatment for taste and odor and disinfection, including UV. Jason also brings invaluable experience relative to construction start-up and support, having served many roles on projects at Aurora's Binney Water Purification Facility (WPF) and Denver Water Foothills Treatment Plant.

Relevant Experience

- Design Manager and Technical Lead for the Boyd Lake 40-mgd WTP Process Improvements Design – City of Greeley, CO
- Project manager for the 44-mgd Joseph Blake WTP Phase I Improvements Design Services – Centennial Water and Sanitation District, CO
- Project manager and process lead for numerous design projects at the 80-mgd Wemlinger WPF, 80-mgd Griswold WPF, and 50-mgd Binney WPF – City of Aurora, CO

Professional Engineer

CO – PE.0041631

Also licensed in: FL, NM

Client References

Frank Alfone | General Manager
Mt. Werner Water and Sanitation District
P | 970.879.2424 E | falfone@mwwater.com
Worked on numerous projects for the District.

Kevin Linder | Treatment Plant Supervisor
City of Aurora
P | 303.739.6750 E | klinder@auroragov.org
Worked on numerous projects at the Binney Water Purification Facility and other City of Aurora projects

Peter Bong | Water/Wastewater Superintendent
Centennial Water & Sanitation District
P | 303.791.0430 E | pbong@cwsdhrmd.org
Worked on the MGWWTP Phase I Improvements and JBWTP Phase I Improvement Projects



Professional Engineer

CO – PE.0054939
Also licensed in: FL

Tony Actis, PE

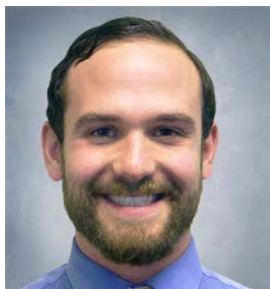
Design and Quality Lead

Broomfield, CO

Anthony has nine years of versatile industry experience, with a primary focus on process and project engineering in water treatment. He has excellent communication skills and has adaptable technical aptitude. Anthony has acted as a project and process engineer on many water-focused projects. He also spent time working on process and facilities engineering and operations. He has demonstrated the ability to maintain positive working relationships with internal team members, clients, vendors, and construction subcontractors.

Relevant Experience

- Design manager/QC reviewer for the Red Mountain WTP Improvements – City of Glenwood Springs, CO
- Design manager for the 44-mgd Joseph Blake WTP Phase I Improvements Design Services – Centennial Water and Sanitation District, CO
- Project engineer and design manager for the Solids Separation Lagoon Improvements Study – Ute Water Conservancy District, CO



Professional Engineer

CO – PE.0057176

John Meyer, PE

Project Engineer

Broomfield, CO

John has worked on water treatment planning studies, benchtop and pilot testing, water treatment system designs, construction oversight, and treatment plant start-up and commissioning. John has recently served as process design engineer for the City of Greeley, Boyd Lake WTP Improvements project and brings a holistic understanding of facilities operation. As the project engineer, he will be responsible for the detailed design of all aspects of the project. He will work closely with Jason and the Carollo team to provide reliable, operations focused solutions.

Relevant Experience

- Project engineer for the Boyd Lake WTP Improvements – City of Greeley, CO.
- Project engineer for 50-mgd Edward W. Bailey WTP Design – Colorado Springs Utilities, CO
- Project engineer for the WTP Replacement – City of Thornton, CO



Jim Kriss, PE

Pipeline Lead

Broomfield, CO

Jim brings 28 years of infrastructure-related experience managing large pipeline design projects. He recently served as project manager for the \$45 million Kings River Pipeline project for the City of Fresno, California, which consisted of 13 miles of 72-inch gravity flow pipeline through rural and urban

areas. Jim also served as the design engineer for the Ute Water Conservancy District's Plateau Creek Pipeline Replacement near Clifton, involving 15 miles of 48/54 inch steel raw water pipeline along highway 65 and Plateau Creek. His experience includes more than 100 miles of pipeline design, all of which he helped guide the various permitting agencies and regulatory authorities to understand the nature of the project and potential impacts to the public and traffic control. Much of his experience has been right here in Colorado.

Relevant Experience

- Project manager for Eagle Bend Metropolitan District's Gun Club Raw Water Expansion.
- Project manager for Aurora's Segment 1E Interceptor Design.
- Project manager for Arapahoe County Water and Wastewater Authority's (ACWWA) Connecting Main and Control Vault Project.

Professional Engineer

CO – PE.0033808
Also licensed in: AZ, KS, NM

Client References

Denise Denslow | Project Manager
Eagle Bend Metropolitan District, CO
P| 303.903.9760 E| denise.denslow@claconnect.com
Worked on the Gun Club Raw Water Expansion Project

Kevin McBrien | Senior Project Manager
Arapahoe County Water and Wastewater Authority, CO
P| 303.790.4830 E| mcmbrien@arapahowater.org
Worked on the Connecting Main and Control Vault Project

Chad Sell | Operations Superintendent
Colorado Springs Utilities, CO
P| 719.668.6504 E| csell@csu.org
Worked on the Edward W. Bailey Southern Delivery System Water Treatment Plant Design-Build



Steve Lindemann

Alternative Delivery Lead

Littleton, CO

Steve Lindemann is a knowledgeable and focused water professional who has been praised for his commitment to quality and efficiency. He has 30 years of experience with construction of water projects and more than 20 years of experience on design-build water projects throughout the United States and Canada. He brings a broad base of experience in all phases of project delivery.

Relevant Experience

- Superintendent for the Columbine (Wes Brown) WTP Renovation – City of Thornton, CO
- Deputy design-build manager for the Northern Treatment Plant – Metro Wastewater Reclamation District, CO
- Project engineer for the Marston WTP Filtration Improvements – Denver Water, CO



Professional Engineer

CO – PE.0043662
Also licensed in: CA

Bart Giles, PE

Raw Water/Finished Water Pump Station Lead

Broomfield, CO

Bart brings more than 15 years of experience in water and wastewater conveyance and treatment projects. His experience in various infrastructure planning and design is broad, including pipelines, lift and pump stations, and storage reservoirs. Bart is known for his hands-on, collaborative approach to project management. He has served on a number of small and large infrastructure projects across the Front Range for clients such as Aurora, CSU, Metro Wastewater Reclamation District (MWRD), and Centennial Water and Sanitation District.

Relevant Experience

- Project manager for the Zone 4C Pump Station – Centennial Water and Sanitation District, CO
- Project manager for the 80-mgd Wemlinger WPF CT Chamber Design – City of Aurora, CO
- Assistant project manager and lead civil engineer on the progressive design-build team for the Southern Delivery System Water Treatment Plant and Finished Water Pump Station – Colorado Springs Utilities, CO



Professional Engineer

CO – PE.0035713

Jason Rozgony, PE

Cost Estimating

Broomfield, CO

Jason has 25 years of experience in the water and wastewater industry, the majority of which has been full-time cost estimating for design, CMAR, design-build, and hard bid projects. He has been responsible for the development of corporate estimating standards, and has managed estimating staff across the United States. Jason has prepared discipline-level estimates and has led complete estimates for more than 150 design and fixed price construction projects requiring collaboration with design engineers, vendors, and subcontractor from preliminary through final design.

Relevant Experience

- Extensive resume of projects including lead estimator on 132 projects in the last three years.



Professional Engineer

CO – PE.0042211
Also licensed in: AZ,
CA, FL, HI, IL, ME, NY,
OH, OR

Monte Richard, PE

Electrical/I&C Lead

Broomfield, CO

Monte brings 17 years of experience in electrical and control system engineering and design. His focus is in electrical distribution systems, process control, and industrial instrumentation for water and wastewater facilities and infrastructure. Monte brings particular expertise in designing medium and low voltage power distribution, lighting, grounding, and electrical controls, as well as design of control systems. He works on a company-wide basis with plant operations and managers to test, start-up, optimize, and troubleshoot water treatment plants in Colorado and beyond. Monte was the project manager for the City of Aurora PLC conversion projects for the Griswold, Wemlinger, and Sand Creek facilities and played a primary roles in rewriting all of the process control narratives for these facilities.

Relevant Experience

- Lead electrical engineer for Denver Water's Northwater Treatment Plant (EI&C, Design Package 3), CO.
- Project manager for Aurora's Wemlinger WPF, Griswold WPF, and Sand Creek WRF PLC Replacement and Improvements Projects, CO.



Stephanie Riley, PhD

Process Support – Biofiltration

Broomfield, CO

Stephanie earned her Ph.D. in Environmental Engineering Science from the Colorado School of Mines. Her area of focus is ozone and biofiltration applied to drinking water and reuse with expertise in pilot operation and research studies. She currently serves as a technologist assisting in water, reuse, and wastewater projects.

Relevant Experience

- Investigator for the Water Research Foundation project 4719: A biofiltration Guidance Manual for Rapid-rate Filtration Facilities
- Investigator for ozone, biofiltration, and granular activated carbon pilot testing for Water Research Foundation project 4833: Understanding the Impacts of Wastewater Treatment Performance on Advanced Water Treatment Processes and Finished Water Quality.
- Investigator for WRF project 4958: New Techniques, Tools, and Validation Protocols for Achieving Log Removal Credit Across Nanofiltration (NF) and Reverse Osmosis (RO) Membranes.



Certifications

Certified Construction Manager

Eric Gilmore, CCM

Construction Support

Broomfield, CO

Eric is an advisor and construction manager with more than 28 years of experience building water and wastewater conveyance, storage, and treatment facilities. His responsibilities include all aspects of program management, construction management, and contract administration on behalf of the Owner. This includes oversight of contractors, issue resolution, change order review, and overall safety and quality assurance.

Relevant Experience

- Construction manager for the Bermuda 2538 Zone Pumping Station – Las Vegas Valley Water District, NV
- Construction oversight manager for the Northern Treatment Plant Progressive Design-Build Project – Metro Wastewater Reclamation District - Denver, CO
- Program construction manager for Southwest Water Reclamation Facility Project – City of Henderson, NV



Professional Engineer

CO – PE.0042976
Also licensed in: AZ,
CA, TX

Certifications

LEED Accredited
Professional

Carter Biesemeyer, PhD

HVAC/Building Mechanical

Broomfield, CO

Carter is a mechanical engineer with more than 17 years of experience in design of mechanical systems for water and wastewater projects. His background focuses on equipment facilities spanning the drinking water process from surface and ground water systems, to drinking WTPs up to 160 mgd. He also serves as Carollo's quality management lead for the Midwest region, putting him at the forefront of quality management procedures and coordination efforts. His HVAC design efforts on the Wemlinger WPF HVAC Improvements project, combined with his keen eye for quality and sound design deliverables, will set this project up for success from day one. Carter is located in Broomfield, Colorado.

Relevant Experience

- Project manager for Aurora's Wemlinger WPF HVAC Improvements project, CO
- Mechanical engineer/HVAC lead during start-up for Colorado Springs Utilities' (CSU) 50-mgd Bailey (SDS) WTP project, CO
- Mechanical engineer/HVAC for Eagle River Water and Sanitation District's Avon WWTP Upgrades, CO



Cody Berg

Project Funding

Littleton, CO

Cody is an associate vice president with Carollo with 14 years of extensive experience in municipal finance. As a consultant and former employee at Denver Water, Cody understands both sides of the utility business. He routinely conducts multi-year financial planning, impact fee, bond feasibility, and cost of service rate, and charge studies throughout the Western U.S. He is currently active in industry associations, including the American Water Works Association (AWWA) National Rates and Charges Committee.

Relevant Experience

- Financial lead for the Business Plan and Importation Study – Central Iron County Water Conservancy District, UT
- Project manager for the Water, Sewer, and Stormwater Financial Plan and Rate and Tap Fee Study – Dominion Water and Sanitation District, CO
- Project manager for the Cost of Service Study – Colorado City, CO



Professional Engineer

CO – PE.0034300
Also licensed in: AR,
ID, MN, MO, NE, ND,
OK, OR

Mark Keller, PE

Structural Lead

Broomfield, CO

Mark has more than 26 years as a structural engineer with experience in project management, planning and execution of design, detailing, and construction phase services of large projects. Past work includes condition assessments for master plans and feasibility studies for preliminary design direction.

Relevant Experience

- Quality manager for structural improvements at the Boyd Lake Water Treatment Plant – City of Greeley, CO
- Structural engineer for the Pellet Softening Disinfection Improvements Project – South Adams County Water and Sanitation District, CO
- Structural engineer for the McCullough Filter Rehabilitation – Colorado Springs Utilities, CO



Licensed Architect

CO – ARC.00400008

Certifications

AIA, LEED AP, PMP

Greg Short

Architectural

Denver, CO

Greg is a principal with Short & Brennan, bringing more than 21 years of experience in architectural planning and design. He has developed countless architectural plans and designs for water and wastewater facilities. He and Carollo have a successful history working together from his involvement on Carollo-led projects including CSU's Bailey SDS plant and most recently, South Adams County Water and Sanitation District's Pellet Softening Design, Centennial W&SD Phase 1 Improvements, and Greeley's Boyd Lake WTP Process Improvements project.

Relevant Experience

- Architect for Greeley's Boyd Lake WTP Process Improvements Project, CO.
- Architect for South Adams County Water and Sanitation District's Pellet Softening Design, CO.



Professional Land Surveyor

CO – PLS.0031158

Chris Juliana, PLS

Surveying

Denver, CO

Chris is the President and founder of Precision Survey & Mapping, Inc., and is a licensed Colorado Professional Land Surveyor and has been surveying professionally since 1986. Chris' experience is vast and solid and includes many aspects of the surveying profession including large civil mapping projects, boundary surveys, hydrographic surveying, high definition surveying, and many types of utility projects. He has worked on countless Front Range projects—many of those with Carollo and will bring invaluable Front Range survey expertise to this project.

Chris understands that most of our projects include referencing previous old drawing sets, and he helps us with datum conversions on every project (Aurora's Wemlinger project was challenging in terms of datum shift).

Relevant Experience

- Survey lead for Thornton's Wes Brown WTP Improvements project, CO.
- Survey lead for CSU's 50-mgd Bailey (SDS) WTP Design-Build project, CO.



Professional Engineer

CO – PE.0024369

Steve Kuehr, PE

Geotechnical

Denver, CO

Steve is trusted geotechnical expert along the Front Range, bringing more than 38 years of experience. He specializes in geotechnical and tunnel engineering as it relates to water supply, sewerage, water resources, commercial, industrial, highway, bridge and land development projects. He has technical expertise in tunnel engineering, foundation engineering, slope stability, expansive soils, ground modification, retaining walls, landslide evaluation and repair, embankment dam design and groundwater collection trenches and cutoffs constructed by the slurry trench method. His in-depth understanding of Front Range soils and applicable geotechnical considerations will be invaluable on this project.

Steve has been our geotechnical engineer on more than 95 percent Carollo's Front Range projects. Our mutual understanding of how we do work lends itself to a very efficient relationship focused on our client's needs.

Relevant Experience

- Geotechnical lead for CWSD's Zone 4C Pump Station, CO.
- Geotechnical lead for Greeley's Boyd Lake WTP Improvements Project, CO.

This local project team is solely based in Colorado and has been instrumental along the Front Range helping utilities solve unique water challenges. We are dedicated to this project through every phase, providing continuity and efficiency. Equally important, we bring established and successful working relationships with our subconsultants, enabling seamless project coordination and delivery.

SECTION

5

Related Project Experience

Relevant Experience

Carollo “walks the talk” when it comes to collaborating with our clients on their projects. We consider ourselves an extension of your staff—with you in the driver’s seat.

The following pages provide just a sampling of Carollo’s local experience with water treatment design challenges similar to the Town of Johnstown. Our team’s relevant experience in the last 10 years, both inside and outside of the region, is extensive. All five of these projects are relevant to Johnstown and involve WTP improvements and associated pipeline infrastructure. We invite you to contact these references so they can attest to the value and level of service that we consistently provide.



**Colorado’s
LARGEST
Progressive
DB WTP
\$124M**

ACCOMPLISHMENTS

- Relevant processes (pre-treatment, ozone, biofiltration, and finished water pumping).
- Delivered the engineering plans and specifications in one year.
- Team provided performance guarantees for the project including finished water quality.
- CDPHE review process had minimal comments
- Consolidated project approach that saved \$35 million (compared to the original 30% design).
- 67 mgd of finished water pumping and 2,600 ft of 42-inch, and 2,300 ft of 60-inch transmission piping.

RELEVANCE TO JOHNSTOWN

Ozone/Biofiltration, Accelerated Alternate Delivery, High-Rate Filtration, Pump Stations

Edward W. Bailey Southern Delivery System Water Treatment Plant Design-Build

Colorado Springs Utilities, CO

Carollo Engineers was the designer, as part of the DB team, on a progressive design-build (PDB) project for the Colorado Springs Utilities 50-mgd Bailey Water Treatment Plant and Finished Water Pump Station.

The plant receives and treats surface water from Pueblo Reservoir to meet Colorado Springs Utilities’ growing potable water needs and to provide resiliency. The fast-track DB project required significant planning and coordination between the design team and contractor to meet the schedule demands (including potential liquidated damages on engineering) and integrate with related raw and finished water conveyance projects.

Project Details

The treatment process included rapid mix, vertical flocculators, parallel plate sedimentation with hoseless solids collection, side-stream ozonation with an innovative ozone contactor design (minimizing footprint and maximizing contact time), deep-bed high-rate (10 gpm/ft²) biofiltration, unchlorinated backwash water, and a 7 million gallon finished water tank.

The chemical feed facility included coagulant, sodium hypochlorite, hydrogen peroxide, phosphoric acid, polymers, sulfuric acid, and a softened water system (for chemical dilution). The finished water pump station includes four 700-hp pumps, three 400-hp pumps, and two 350-hp backwash pumps. Design included surge mitigation measures, a major highway crossing, and temporary discharge facilities. Carollo provided startup and commissioning services and operated the plant for six months.

Client Reference

Dan Dilts, Operations Superintendent
P. 719.640.0807

Capacity of Project:

50 mgd

Completion Date:

April 2016

Design and Construction Cost:

Contract Value - \$11.35M
Construction Cost - \$124M

Firm’s Role:

Design Engineer for final design and construction

Team Involvement

Vinnie Hart – Design Manager
Bart Giles – Project Engineer
Carter Biesemeyer – HVAC & Plumbing
Steve Kuehr – Geotechnical
Chris Juliana – Surveyor
John Meyer – Start up Assistance



Boyd Lake WTP Process Improvements Design

City of Greeley, CO

Through a collaborative CMAR process with the City of Greeley and Hydro Construction, Carollo has developed process improvements that address the numerous project goals by implementing a source water aeration system, advanced oxidation with ozone and hydrogen peroxide, and conversion of conventional filters to biofiltration at this 40-mgd facility.

Extensive jar testing was conducted both at the Boyd Lake WTP as well as at Carollo's Water ARC® bench testing facility. Water ARC® performed ozone, ozone + peroxide, and disinfection byproduct testing to confirm the selected process modifications would achieve the project goals.

Project Details

Carollo designed a new chemical facility to eliminate chlorine gas, improve operational safety and increase storage capacity for new and existing chemicals. The new chemical facility includes hydrogen peroxide for the advanced oxidation process, sodium hydroxide to replace the existing (outdoor) system, and sodium hypochlorite to replace the existing chlorine gas cylinder system. Modifications to the existing alum (outdoor) system was also included to improve the safety and increase storage capacity of the process-critical chemical.

The Boyd Lake WTP Process Improvements is a CMAR project with Hydro Construction. Carollo has completed the design and construction began in early 2020. Carollo delivered the project in close coordination and collaboration with both the City of Greeley and Hydro to incorporate input from all project participants. Carollo conducted evaluations of various process alternatives such as bulk sodium hypochlorite or on-site sodium hypochlorite generation and layout/siting options for the new facilities to best plan for future expansion and flexibility for future unknowns.

ACCOMPLISHMENTS

- Use of ozone/hydrogen peroxide reduced costs (compared to ozone only) and reduced ozone generator capacity by 50 percent.
- Achieved T&O reduction from MLB and Geosmin from 100 ng/L to 3 ng/L with an ozone dose of 2 mg/L and a hydrogen peroxide dose of 1 mg/L.
- New chemical building will eliminate chlorine gas and alleviate the current sodium hydroxide storage and feed issues.

RELEVANCE TO JOHNSTOWN

Ozone+H2O2, eliminate 30 mg/L of PAC, Conversion to biofiltration, CMAR

**Innovative Project
to Address SOURCE
WATER without PAC,
Ozone Oxidation of
Taste and Odor, and
New Chemical Facility**

\$16M
(phase funded)

Client Reference

Peter Champion, PE
Water Systems Engineer / Project Manager
P. 970.350.9319

Capacity of Project:

40 mgd

Completion Date:

Design completed in 2019, construction is ongoing.

Design and Construction Cost:

Design and SDC fee - \$2.1M
Construction cost - \$16M

Firm's Role:

Design Engineering

Team Involvement

Vinnie Hart – Project Manager
Jason Assouline – Design Manager/
Technical Lead
John Meyer – Project Engineer
Bart Giles – Civil Lead
Jason Till – Structural Lead
Steve Kuehr – Geotechnical Lead
Greg Short – Architect



UNIQUE PROJECT REQUIREMENTS

- Narrative developed to maintain 12 alluvial wells to minimize surge to the pellet reactors which are sensitive to flow changes.
- Custom and constant head box to eliminate risk of underdrain blow-out.
- Cross-connection prevention with minimal backflow preventers (using air gaps).
- Largest pellet softening plant in the United States

RELEVANCE TO JOHNSTOWN

Filtration, CMAR project delivery, Expandability

Pellet Softening Design

South Adams County Water and Sanitation District, CO

Carollo was the design engineer for the \$44.5 million dollar Construction Manager at-Risk South Adams County Water and Sanitation District's (SACWSD) Pellet Softening Design Project at the Klein Water Treatment Facility (KWTF). SACWSD's primary water source is a group of 12 alluvial wells with significant hardness in the water, which has caused customers to endure costs of frequent plumbing and water heater replacement as well as the addition of in-home water softeners. Carollo successfully pilot tested and designed pelletized softening and filtration. The project consists of pellet softening with sodium hydroxide, stabilization with carbon dioxide, chlorine contact for virus inactivation, dual media filtration. The building layouts were designed to include addition space for more pellet reactors and filters and the chemical feed and stabilization basin was designed for 18 mgd. The pellet softening system includes pellet reactors each with a diameter of 10 feet and an allowable flow range of 4 to 4.67 mgd.

This successful design project led to the construction of the 14 mgd pellet softening system, which is a full-scale, centralized process that is capable of treating up to 14 mgd to reduce calcium hardness in SACWSD's water supply. The project includes modifications to the existing plant as well as construction of new facilities.

Client Reference

Kipp Scott, Project Manager
7400 Quebec Street
Commerce City, CO 80037
P: 303.288.2646

Capacity of Project:

14 mgd (expandable to 18 mgd)

Completion Date:

Substantial completion - 3/10/2021

Design and Construction Cost:

Design & ESDC Costs - \$6,966,000
Construction Costs - \$44,525,000

Firm's Role:

Design and Construction Engineer

Team Involvement

Vinnie Hart – Project Manager
Jim Kriss – Civil
Jason Rozgony – Cost Estimating
Stephanie Riley – Startup & Commissioning
Carter Biesemeyer – HVAC/Building Mechanical
John Meyer – Piloting/Plumbing
Steve Kuehr – Geotechnical
Chris Juliana – Surveying
Greg Short – Architectural



Carollo designed horizontal directional drill crossings to minimize impacts to environmentally sensitive Piney Creek.

RELEVANCE TO JOHNSTOWN

- Planning, preliminary design, final design, and construction management.
- Pipeline routing analysis, design, permitting, and construction.
- Existing pump station improvements including pumps, valves, and transient control design
- Hydraulic modeling
- AACE Class 1 cost estimate.

Gun Club Raw Water Expansion Eagle Bend Metropolitan District, CO

Carollo developed final design documents to expand the City of Aurora's raw water system to serve the Eagle Bend Metropolitan District's Heritage Eagle Bend Golf course. The new raw water source represents a renewable water supply for the golf course, eliminating its reliance on deep non-renewable groundwater sources. The raw water system expansion increased the maximum system capacity from about 800-gpm to 1,200-gpm, and required improvements to two significant conveyance elements: the Gun Club Pump Station and the raw water transmission pipeline.

Aurora's Gun Club pump station was equipped with two existing 50-HP pumps on across the line starters. These pumps were replaced with larger capacity 100-HP pumps, equipped with soft starters to help manage transients during pump startup and power failure. In addition, new pump control valves were programmed with slow opening and closing features to reduce pressure surges from rapid valve closure. Lastly, a surge anticipator valve was added from the pump discharge to suction side as a third pressure transient control measure.

The existing transmission pipeline delivers water to the City's Saddle Rock Golf Course. A new transmission pipeline and flow split vault was designed to split flow to also convey raw water to the Heritage Eagle Bend Golf Course. The new transmission pipeline designed as 12-inch PVC pipe, 8,200 feet in length, and included, two horizontal directional drills, pressure reducing and flow control vaults, and significant permitting including Aurora, Arapahoe County, E-470, and US Army Corps of Engineers.

Client Reference

John Bruneau
Project Manager
P: 303.328.7303

Capacity of Project:

1.73 mgd

Completion Date:

July 2020

Design and Construction Cost:

\$584,000 Design & ESDC; \$3.3M
Construction

Firm's Role:

Planning, Preliminary Design, Design, and
Construction Management

Team Involvement

Jim Kriss – Project Manager
Bart Giles – Project Engineer
Jason Rozgony – Cost Estimator
Steve Kuehr – Geotech



RELEVANCE TO THIS PROJECT

- Finished water pump station
- Variable frequency drives specifically designed for energy efficiency (rebate from Xcel received)
- 16 mgd capacity
- Less than 1% change orders

\$7.7M
CONSTRUCTION

Zone 4C Pump Station

Centennial Water and Sanitation District, CO

Carollo performed a potable water distribution study for the District which recommended the installation of the Zone 4C Booster Pump Station. The station provides critical additional capacity to distribution zones 4, 5, and 6. When compared to similar stations within the District's system, the Zone 4C pump station increased efficiency by decreasing pump station headloss by over 90 percent. The efficiency of the new pump station qualified the District for large rebates from Xcel Energy, which provided significant offsets toward the capital construction cost as well as low long-term operating costs. As part of the study, a surge analysis was conducted for the pump station and distribution system. Based on the recommendations of the study, the District competitively procured design and construction management services and selected Carollo. The station was equipped with four (4) 350 HP horizontal split case pumps, steel pump manifolds (150 psi pressure rating), a surge tank for surge mitigation, and an emergency generator sized to power the entire pump station.

To achieve energy efficiency and minimize minor losses, Surge Buster tilted disc check valves and flow meters were installed on the discharge of each pump. The check valves rapidly close in the event of a power failure minimizing surge pressures as well. Individual pump discharge flow meters allow operators to periodically perform tests of each pump to determine installed curves and optimize pump efficiency without impacting pump station operation. The suction and discharge headers were designed to keep minor losses to a minimum and facilitate proper operation of the pumps for an energy-efficient design.

Client Reference

Ryan Edwards, Project Manager
62 W. Plaza Drive
Highlands Ranch, Colorado 80129
P: 303.791.0430 X: 4907

Capacity of Project:

16 mgd firm capacity

Completion Date:

Contract dates 2014 - 2016

Design and Construction Cost:

Design and ESOC costs - \$1,327,000
Construction costs - \$7,710,315

Firm's Role:

Prime Consultant for design

Team Involvement

Vinnie Hart – Project Manager (preliminary design) and Principal-in-Charge (design and construction)
Bart Giles – Project Manager (design and Construction)
Jason Assouline – Construction Support
Jim Kriss – QA/QC
Steve Kuehr – Geotechnical
Carter Biesemeyer – HVAC/Building Mechanical



Education

MS Hydrologic Science and Engineering, Colorado School of Mines, 2016

BS Chemical Engineering, Colorado School of Mines, 2011

Licenses

Professional Engineer, Florida

Professional Engineer, Colorado

Professional Affiliations

American Institute of Chemical Engineers

American Water Works Association

Anthony M. Actis, P.E.

Anthony Actis, a motivated and results-driven engineering professional, has nine years of versatile industry experience, with a primary focus on process and project engineering in water treatment. He has excellent communication skills and has adaptable technical aptitude. Prior to joining Carollo Engineers, Inc., Mr. Actis acted as a project and process engineer on many water-focused projects. He also spent time working on process and facilities engineering and operations, and has experience as a project engineer and field engineer for a variety of oil and gas projects. He has demonstrated the ability to maintain positive working relationships with internal team members, clients, vendors, and construction subcontractors.

Relevant Experience

→ Project engineer for the City of Greenwood Springs, Colorado, Red Mountain Water Treatment Plant Improvements. This project was an emergency fast-tracked design in response to the Grizzly Creek wildfire event of 2020. The design provided additional plant capacity and contingency unit processes to address increased turbidity and sediment removal from the Roaring Fork Source, No Name Creek, and Grizzly Creek. Additional design improvements included modernized and automated process equipment and controls to augment plant operations and ability to reach treatment objectives in emergency scenarios. Mr. Actis managed design team efforts and discipline coordination, designed and developed equipment configuration, developed technical specifications and contract documents, and coordinated vendor efforts. The overall design schedule for the project was limited to six weeks due to client schedule constraints; Mr. Actis led multiple internal QC review periods ensuring that design packages exceeded client expectations.

→ Project engineer for the Centennial Water and Sanitation District, Colorado, Joseph Blake Water Treatment Facility Phase I Design Services. This project entailed the evaluation and design of the replacement for rapid mix, flocculation, and sedimentation equipment, as well as a new chemical storage and feed facility. Mr. Actis served as design manager and coordinated design efforts across disciplines.

→ Project engineer and manager for Ute Water Conservancy District, Colorado, Solids Separation Lagoon Improvements Study. The goals of this project included assessing deficiencies and aging infrastructure associ-

ated with the District's earthen lagoons 1, 2 and 3, and examine retrofit options for lagoons 4 and 5 to allow for winter operation. Responsibilities included evaluation of historic plant data and record drawings to assess solids separation performance, investigate regulatory requirements for solids waste, and recommend plant infrastructure improvements and alternatives to improve plant operations.

→ Project engineer for the City of Tampa, Florida, David L. Tippin Water Treatment Facility (DLTWTF) Chemical System Improvements Progressive Design-Build. This project includes a new on-site sodium hypochlorite production facility, pipe/utility trench systems upgrades and additions, and a replacement ammonia system. Mr. Actis's responsibilities included design of a 300,000-gal sodium hypochlorite storage tank farm with 300+ gpm pressure loop to dose at multiple application points for plant production up to 140 mgd. His efforts included design team coordination between disciplines and management of storage and metering areas of the design. Mr. Actis developed hydraulic piping models for all systems; he sized and designed facility and equipment layout; and led specification and control narrative development for these systems.

→ Project engineer, task manager, and chemical systems design lead for the East Cherry Creek Valley Water, Colorado, Northern Treatment Plant Phase 2 Expansion. This project was an expansion of a 10 MGD 4-stage desalination drinking water treatment plant to 25 MGD. Mr. Actis was responsible for determining storage volumes and feed rates for a single facility that will also provide flexibility for additional fu-

Anthony M. Actis, P.E.

ture RO process phases. He led design efforts for the chemical systems and facility which included identifying design criteria and sizing equipment, drafting design reports for client submittals, equipment RFQ's and vendor communications, cross-discipline design coordination, specification writing, managing drafting efforts to create and revise PFD's, P&ID's, and mechanical sheets from conceptual design through 100% submittals and early construction. Mr. Actis coordinated chemical system design preferences and objectives at client meetings to ensure buy-in on design. He served as Resident Engineer through construction, which included submittal and RFI review, as well as construction oversight and inspection on behalf of the owner.

→ Project engineer and chemical systems discipline lead for the East Cherry Creek Valley Water, Colorado, 4-Stage RO Pilot System. This project was a RO pilot system in preparation for East Cherry Creek Valley's plant expansion from 10 MGD to 25 MGD. Mr. Actis was responsible for coordination of operations with plant operators, was regularly on-site to operate and troubleshoot the pilot system, and processed all operations data. Additionally, he drafted periodic status reports and provided successful recommendations for East Cherry Creek Valley to modify their full-size plant's chemical portfolio based on data analysis from the pilot system.

→ Project engineer and task manager for the City of San Jose, California, Bureau of Reclamation's Santa Teresa Water Treatment Plant's Raw Water Ozonation Alternative – 30-percent Design. This project entailed a 30-percent design of a raw water ozonation system at the Santa Teresa WTP. Mr. Actis was responsible for identifying unit processes, RFQ's and vendor communications, comparison of process equipment, and making recommendations to the project team. Additionally, he developed PFD's and P&ID's, as well as facility and site layouts, that integrated raw water ozonation into the existing treatment plant. He identified design criteria and sized equipment for chemical pumps, liquid oxygen storage and vaporizing units, ozone generators and

power supplies, cooling water systems, and ozone contactor basins.



Jason Assouline, P.E.

Jason Assouline has more than 16 years of experience in drinking water and reuse treatment. His experience spans water treatment, reuse, and wastewater projects with expertise in large greenfield treatment plant design, design of upgrades to existing facilities, pilot plant operation, small scale package plant evaluation, full-scale operation, and engineering services during construction.

Education

MS Environmental Engineering, University of Iowa, 2004

BS Civil Engineering, University of Iowa, 2002

Licenses

Professional Engineer, Colorado, New Mexico

Professional Affiliations

American Water Works Association (member since 2004)

Water for People (member since 2005, committee chair from 2008-2010)

WaterReuse Colorado (member since 2011, Board member in various positions since 2016)

Water Experience

→ Design manager and process lead for the City of Greeley, Colorado, Boyd Lake Water Treatment Plant Process Improvements Project. This project included a new chemical facility and ozone improvements at a 40 mgd conventional treatment facility.

→ Start-up and commissioning support for the Centennial Water and Sanitation District, Colorado, Zone 4C Pump Station. Major elements of the project included four 350-horsepower horizontal split-case pumps, 1250-kW standby generator, two-story open pump room with bridge crane, and high to low pressure zone bypass line.

→ Project manager and process lead for the City of Greeley, Colorado, Residuals Improvements Project. This project analysis of the residuals systems at both the Bellvue and Boyd Lake Water Treatment Plants. Evaluated the current system at each facility, and developed alternatives and recommendations to improve and optimize the solids handling approaches.

→ Project manager for the Centennial Water and Sanitation District, Colorado, Joseph Blake Water Treatment Plant Phase I improvements project. The project entailed evaluation and design of replacement of all rapid mix, flocculation, and sedimentation equipment as well as a new chemical storage and feed facility. Bench top testing was also conducted for taste and odor mitigation with ozone. The bench testing was conducted at Carollo's Water ARC® lab.

→ Project manager and process lead for the City of Aurora, Colorado, Wemlinger Water Purification Facility (WPF) Chemical Study. The project included a detailed analysis of all chemical systems and a conceptual layout for a new flocculation and sedimentation facility to support long term site planning. Also included in the project was

extensive jar testing of various source water blending scenarios to assess the impact on coagulation chemistry (and how that related to chemical doses and storage quantities required).

→ Process engineer for the City of Aurora, Colorado, Wemlinger WPF PLC Conversion and Improvements project. Project entailed complete replacement of the entire control and SCADA systems for this 80 mgd direct filtration water treatment plant. As the process lead, was responsible for guiding workshops with the operational staff to determine the preferred approach for each process to develop detailed control narratives.

→ Process lead for Denver Water, Colorado, NorthWater Treatment Plant, Denver, Colorado. Responsible for leading the flocculation/sedimentation, disinfection (combination of UV and free chlorine), as well as the chemical facilities for this greenfield 150-mgd water treatment facility.

→ Design manager for the City of Aurora, Colorado, Binney Water Purification Facility Solids Dewatering and Filter Additions project. Led the design effort for a \$12 million project which included the addition of four biofilters, new chemical storage and feed, gravity thickener and pump station, and the conversion from lagoons to solids drying beds. Responsibilities included coordination of a multi-discipline team, as well as all process design for all components except the gravity thickener and pump station.

→ Design and construction manager for the City of Aurora, Colorado, Reservoir Aeration Project. Led the design for this \$1 million project which included the addition of a LOX storage and feed system and linear diffuser in the reservoir. Responsibilities included coordination of a multi-discipline team, as well as all process design. The fast-tracked design was completed in 4 months

Jason Assouline, P.E.

to allow for construction to be completed before winter 2015. Led construction activities including inspection, submittals, RFIs, and contract modifications.

→ Project manager for Mt. Werner Water and Sanitation District/City of Steamboat Springs water projects. Led the treatment evaluation as part of the watershed wildfire protection plan to examine the impacts of a potential wildfire in the Fish Creek watershed and treatment mitigation strategies. Managed and led the technical evaluation for a corrosion control study (compliant with CDPHE and EPA guidance) and a facility master plan. The corrosion control study included a desktop analysis as well as pipe loop testing. The Facility Master Plan builds upon the recommendations in the wildfire plan and corrosion control study and also included a comprehensive evaluation and recommendations for near term and long range improvement projects at both the Fish Creek Filter Plant and the Yampa River Wells Filtration Plant. Conceptual improvements were developed and ranked based, and extensive cost estimating was conducted to support the capital outlay for the District and the City.

→ Project manager and process lead for the City of Santa Fe, New Mexico, Canyon Road Water Treatment Plant Improvements. The project included a comprehensive performance evaluation of all processes at the 8 mgd conventional water treatment plant. Detailed design included a hypolimnetic aeration system to control source water manganese and a new flocculation and sedimentation facility.

→ Project manager and lead engineer for the Arapahoe County Water and Wastewater Authority, Colorado, Joint Water Purification Plant (JWPP) Treatment Alternatives Study. Project entailed conceptual design of three treatment alternatives for the existing JWPP. This treatment facility currently has the ability to treat up to 4 mgd of alluvial groundwater through microfiltration membrane process. The alternatives analysis entails comparing restoration of the RO process currently on site (not used) which requires selenium treatment of the RO concentrate (2

alternative treatment options) as well as a pellet softening option.

→ Process lead for the City of Park City, Utah, 3Kings Water Treatment Facility. Lead engineer for the filtration and adsorption treatment processes for the new 4.3-mgd potable water treatment facility. The source water is a combination of various mine tunnel discharges and the treatment process focuses on metals removal through pyrolytic filters and titanium oxide adsorption.

→ Project manager for the City of Aurora, Colorado, Binney Water Purification Facility UVAOP Chemical Cleaning System. Responsible for the evaluation, design, and construction of a chemical cleaning system for one of the largest UVAOP systems in the world.

→ Project manager for the City of Aurora, Colorado, Griswold WPF Disinfection and DBP Reduction Study. Responsible for the evaluation of chlorine and chlorine dioxide application at this 60-mgd facility to reduce/optimize the chemical doses and disinfection byproduct concentration in the facility.

→ Project manager for Denver Water, Colorado, Marston Treatment Plant Flocculation and Sludge Collection project. Served as project manager for the inter-disciplinary design team. Coordinated schedule, budget, and all activities related to the electrical and I&C design of the flocculation and sludge collection equipment replacement at this 210 mgd facility.

→ Project manager for Denver Water, Colorado, Foothills Treatment Plant Filter Building and Pump Station Lighting Improvements. Responsible for schedule, budget, and all activities related to the design of the lighting system modifications at this facility.



Education

MS Finance, University of Colorado at Denver, 2010

BS Business Administration, Regis University, 2006

Professional Affiliations

American Water Works Association (AWWA)

Water Environment Federation (WEF)

Cody Berg

Cody Berg is an associate vice president with Carollo with 14 years of extensive experience in municipal finance. As a consultant and former employee at Denver Water, Cody understands both sides of the utility business. He routinely conducts multi-year financial planning, impact fee, bond feasibility, and cost of service, rate, and charge studies throughout the Western U.S. He is currently active in industry associations including the American Water Works Association (AWWA) National Rates and Charges Committee.

Relevant Experience

→ Financial lead for the Business Plan and Importation Study for the Central Iron County Water Conservancy District, Utah. Project considered the financial impacts of a large water supply project to the District and other regional stakeholders. The Carollo team prepared a model to facilitate the analysis of multiple scenarios, including capital and operating costs and funding alternatives. The analysis projected cash flows for all stakeholder agencies, under multiple scenarios, to estimate the associated rate increases necessary for financial viability.

→ Project manager for the Water, Sewer, and Stormwater Financial Plan and Rate and Tap Fee Study for Dominion Water and Sanitation District (Colorado). He determined annual revenue requirements for 10-year period, cost of service by customer class, and recommended alternative rate structures. Study included full customer billing analysis, development of cost of service rate model, and presentations to elected officials and public stakeholders.

→ Quality review for the Inland Empire Utilities Agency, California Wastewater and One Water Rate and Fee Study. He is leading comprehensive rate and fee update encompassing potable, recycled, and recharge water service rates, and wastewater service rates, as well as wastewater and one-water connection fees.. He also leads the creation and delivery of presentations and workshops for an extensive outreach program aimed at garnering buy-in and support from the member agencies, builders association, and other stakeholders.

→ Financial lead for the City of Houston's evaluation of repairing and rehabilitating

their existing plant versus utilizing the reserve capacity of the Northeastern Water Purification Plant Expansion. Managed a study that evaluated and compared the costs between the two alternatives, including multiple scenario analysis of each alternative.

→ Financial lead for the Chlorine Analysis Study, City of Odessa, Texas. Reviewed financial results of the Chlorine analysis and cost of potential processes to ensure accurate use of assumptions and calculations of net-present value.

→ Financial lead for the third-party review of Financial Planning and Cost of Service Study for San Diego County Sanitation District, California. Carollo reviewed the revenue requirement, allocations and unit costs to ensure appropriate industry cost of service and rate making standards were used in development of the financial model. Prepared a Technical Memorandum summarizing findings and recommendations for presentation to District staff.

→ Financial lead for the Wastewater Service Scenario Analysis Study for the Town of Sahuarita, Arizona. Developed a decision matrix to assist Town in identifying important considerations for Wastewater Service scenarios. Produced financial model evaluating unit costs for identified scenarios, ultimately leading the Town to a determination of best option for wastewater service.

→ Project manager for the Water and Wastewater Financial Planning Study for the City of Surprise, Arizona. Developed an interactive and dynamic model which provided the City with the ability to run multiple scenario analysis in real-time. Delivered model to client including a written

Cody Berg

manual and hands on training workshops with staff.

→ Project manager for the Wastewater Financial Planning, Cost of Service and Rate Design Study for the Town of Ruidoso, New Mexico. Conducted a comprehensive 10-year financial plan to meet EPA mandate requiring the town to upgrade its wastewater treatment plant due to its discharging of effluent flows into a river containing endangered Trout species. Through a combination of grants, state funds, and bonds, the Town successfully implemented rates sufficient to upgrade the plant, meeting the mandate.

→ Project manager for the Water and Wastewater Financial Planning, Cost of Service and Rate Design Study for Security Water and Sanitation District, Colorado. Developed a comprehensive financial plan that consistently met financial objectives and policies and successfully implemented annual increases which were unanimously approved by the Board of Directors. Transitioned to Cost of Service based rates over a three year period while ensuring enterprise funds were financially viable and self-sufficient. Conducted in depth analysis of customer billing data to assist the District in analyzing the existing rate structure and its ability to meet its objectives, which ultimately resulted in a rate structure change.

→ Project manager for the Water and Wastewater Rate Study for Benbrook Water Authority, Texas. Responsible for leading comprehensive rate and fee update encompassing potable, recycled, and recharge water service rates, and wastewater service rates, as well as wastewater and one-water connection fees. Also responsible for creation and delivery of presentations and workshops for an extensive outreach program aimed at garnering buy-in and support from other member agencies, builders association, and other stakeholders.

→ Project manager for the Wholesale Water Rate Study for Baytown Area Water Authority, Texas. He determined annual revenue requirements for 10-year period,

cost of service by customer class, and recommended alternative rate structures. The Authority also provided water service to the City of Baytown and several other wholesale customers. Study included full customer billing analysis, development of cost of service rate model, and presentations to elected officials and public stakeholders.

→ Project manager for the Cost of Service Study for Colorado City, Colorado. Developed a comprehensive financial plan that assisted the City's financial advisor in issuing additional debt to pay for water and wastewater system capacity expansion. This study extracted the City's objectives and policies and resulted in successful implementation of proposed revenue increases which were unanimously approved by City Council.

→ Project manager for the Water and Wastewater Financial Planning, Cost of Service and Rate Design Study for the Town of Erie, Colorado. Developed a comprehensive financial plan that consistently met financial objectives and policies and successfully implemented annual increases which were unanimously approved by the Board of Directors. Implemented Cost of Service based rates which ensured enterprise funds were financially viable and self-sufficient. Conducted in depth analysis of customer billing data to assist the Town in analyzing the existing rate structure and its ability to meet its objectives, which ultimately resulted in a rate structure change.

→ Financial lead for the Cost of Service study for the City of Aspen, Colorado. Successfully implemented wholesale water rates that required modifications due to an extension of the City's airport runway. Study garnered City and staff support and resulted in rates that were unanimously approved by City Council. The runway extension also allowed the City to increase tourism and produce additional income for the City.



Education

BS Mechanical Engineer,
University of Colorado,
Denver, 2002

Licenses

Mechanical Engineer,
Arizona, California

Professional Engineer,
Texas, Colorado,
Washington

Certification

LEED Accredited
Professional, Green
Building Certification
Institute, 2009

Professional Affiliations

American Society of
Mechanical Engineers

American Water Works
Association

Tau Beta Pi

Carter P. Biesemeyer, P.E., LEED

Carter Biesemeyer is a mechanical engineer with 16 years' experience in design, construction management, and regulatory compliance for water and wastewater projects up to 300 mgd. Carter has experience with a variety of clients including private and municipal water/wastewater utilities and the U.S. Army Corps of Engineers (USACE). Design and construction management experience for water and wastewater treatment processes includes process air blower facilities, chemical storage and feed facilities, headworks facilities, arsenic treatment facilities, odor control facilities and pump stations. Non-process design and construction management experience includes HVAC, plumbing and compressed air systems. Areas of regulatory familiarity include hazardous material management planning, construction permitting, and surface water discharge permitting.

Relevant Experience

→ Mechanical engineer for the Colorado Springs Utilities, Colorado, progressive design-build of the Southern Delivery System Water Treatment Plant and the associated Transmission Mains. Recognized as the largest water project in decades in Colorado, the plant receives and treats surface water from Pueblo Reservoir to help meet Colorado Springs' growing potable water needs, with an initial capacity of 50 mgd and an ultimate build out capacity of 150 mgd. Responsibilities included engineering services during construction focused on HVAC and control systems coordination.

→ Mechanical engineer for the Arapahoe County Water and Wastewater Authority, Colorado, Connecting Main project. Services provided included mechanical design of HVAC systems, response to submittals and requests for information, field inspection of construction, and retrofit of a hypochlorite booster system consisting of a 300 gal tank and metering pumps into an existing control valve vault.

→ Mechanical engineer for the Centennial Water and Sanitation District, Colorado, Zone 4C Pump Station project. The pump station provides an interconnection between pressure zones in the District's drinking water distribution system pressure zones. The pump station is a 16 mgd firm capacity below grade structure with full standby power provided by a fixed diesel generator. Carter provided quality review of design documentation including HVAC systems.

→ Lead mechanical engineer for the City of Aurora, Colorado, Cherry Creek Well Field Controls Rehabilitation. The controls rehabilitation includes removal of back pressure valves and implementation of variable frequency drives for 6 alluvial well pumps in the well field. The purpose of the project was to allow automatic control of all the pumps in the well field and to save energy by lowering the pressure at which the well field operates. Energy savings are predicted to exceed \$50,000 annually. Carter created a pumping system performance and control simulation model incorporating variable speed pump performance curves, and conveyance system hydraulic models. The performance and controls model was used to establish allowable pump speed ranges and on/off sequencing required to achieve any operator input flow set point over the entire flow capacity of the well field (from 1.0 mgd up to 10.1 mgd). The model allowed simulation of performance for the system of 6 different pumps operating at variable speeds singly and in any combination. The model outputs included allowable pump speed ranges correlated to the well field flow capacity. The allowable speeds were input directly into the SCADA programming to ensure pumps operate safely within the recommended flow and head range at all times. The model also tuned the operating speed versus flow capacity to maintain each pump near its' best efficiency point regardless of the combination of pumps running.

→ Mechanical engineer for the Metro Wastewater Reclamation District, Colorado, PAR 1088 Northern Treatment Plant - ESDC,

Carter P. Biesemeyer, P.E., LEED

This was a new 24-mgd (60 mgd ultimate capacity) regional facility. Responsibilities included pump station and hydraulic RFI assistance and HVAC construction coordination.

→ Mechanical engineer for the Clifton Water District, Colorado, Microfiltration / Ultrafiltration Water Treatment Plant project. Carter led the HVAC design including the retrofit of the existing building, which was repurposed to house new micro- and ultra-filtration equipment. This ENR award winning project included retrofitting the existing building with high-efficiency condensing gas-fired heaters, reducing fuel usage and providing a conditioned environment to protect the new water treatment equipment. While the high-efficiency equipment was more expensive than other options, the calculated payback period based on energy/fuel savings was less than three years.

→ Mechanical engineer for the Eagle River Water and Sanitation District, Colorado, Wastewater Treatment Plant Master Plan. Project includes evaluation of portfolios of different combinations of improvements for the District's three water reclamation facilities as part of a watershed-based approach to planning. The condition assessment comprised a multi-discipline investigation of existing wastewater process facilities including mechanical, electrical, instrumentation and structural components. Carter performed condition observations for mechanical and HVAC equipment, assessed facility compliance with NFPA 820, and created a condition assessment observation tracking system that captured in-situ commentary, photos, and equipment data on a personal tablet. The data collected was electronically imported into four discipline specific reports – structural, mechanical, HVAC, and electrical/controls – for each process facility at the three wastewater treatment plants.

→ Mechanical engineer for the City of Fort Collins, Colorado, Digester Building HVAC Replacement project. The project includes improvements needed in the Digester Building Control Room to accommodate new cogeneration facility equipment and

controls. Carter's responsibilities included NFPA 820 requirements assessment, HVAC design, room layout modifications, and coordinating with regulatory authorities. Carter prepared a technical memorandum comparing the latest version of NFPA 820 requirements to the existing conditions and coordinated design with the authority having jurisdiction to implement improvements that maintain safety in the space that houses the new cogeneration electrical and controls equipment.

→ Mechanical engineer for the Colorado Springs Utilities, Colorado, \$124 million Edward W. Bailey (SDS) Water Treatment Plant. The SDS has a non-proprietary control scheme for HVAC that allows direct control of HVAC equipment from the plant SCADA system including HVAC related set-points, monitoring, alarms, and emergency shut-downs. Carter provided engineering services during construction to coordinate HVAC installation, controls troubleshooting, and startup / commissioning. Carter wrote a narrative encompassing a comprehensive component-by-component functional matrix and controls description for evaporative coolers, air handling units, air makeup units, unit heaters, energy recovery units, variable volume fan-coils, and hydronic heating systems.

→ Mechanical engineer for the Clifton Water District, Colorado, Microfiltration / Ultrafiltration Water Treatment Plant project. The ENR award winning project included retrofitting the existing building with high-efficiency condensing gas-fired heaters, reducing fuel usage and providing a conditioned environment to protect the new water treatment equipment. Carter led the HVAC design including the retrofit of the existing building, which was repurposed to house new micro- and ultra-filtration equipment. While the high-efficiency equipment was more expensive than other options, the calculated payback period based on energy/fuel savings was less than three years.



Bart Giles, P.E.

Bart Giles experience includes the planning and design of water and wastewater pipelines, pump stations, storage reservoirs, infrastructure, and wastewater treatment. Some of his recent projects include:

Relevant Experience

→ Project manager for design of the Centennial Water and Sanitation District, Colorado, Zone 4C Pump Station. Led the design team that included structural, electrical, instrumentation and controls, mechanical, HVAC, architectural, and CAD disciplines for the 16-mgd potable water pump station. The pump station building was given architectural treatments to appear like a barn in order to minimize visual impact to surrounding neighborhoods. Major elements of the project included four 350-horsepower horizontal split-case pumps, 1250-kW standby generator, two-story open pump room with bridge crane, and high to low pressure zone bypass line.

→ Assistant project manager and lead civil engineer on the progressive design-build team for the Colorado Springs Utilities, Colorado, Southern Delivery System Water Treatment Plant and Finished Water Pump Station. This project included consolidating the original 30 percent design from 19 different structures into one main process building. This approach reduced the project cost from \$160 million to \$124 million. The project included a 200-gpm cationic exchange system, two 12-ton salt saturators, design of a pump mix rapid mixing system, vertical mixer flocculation, parallel plate sedimentation, side-stream ozone, and engineered biofiltration. The project also included a 10-MG raw water tank, 7.5-MG finished water tank, and finished water pump station to two different pressure zones. The original design of the finished water pump station was overhauled to provide a conservative design that was also energy efficient. The preliminary/final design was completed in 365 days. The design also included sequencing of the raw water pumping system during off-peak hours to reduce the overall operating costs of the system and leverage the 10-MG raw water tank.

→ Project manager for the City of Aurora, Colorado, 80-mgd Wemlinger WPF CT Chamber Design project. The project consisted of a 2.5 mg buried concrete disinfection chamber with a serpentine channel and a baffling factor of 0.80 outside of the treated water reservoir at the Wemlinger WPF. The chamber is designed to operate at two water surface levels. The low level will minimize volume and associated disinfection by products at low flows, as well as maximize the allowable filter headloss. The high level allows a maximum depth during high flows when the filters can be operated at lower headloss. The design included chlorine and ammonia dosing and flash mixing to produce chloramines at both the beginning and the end of the CT Chamber, sodium hydroxide dosing to adjust pH, chlorine, ammonia, pH monitoring, and turbidity monitoring, and a supplemental chlorine boosting location part way through the CT chamber. Additional design elements included flow metering, pumped CT-to-waste to enable quick draining of the CT chamber, and the ability to bypass the treated water reservoir to two different pressure zones in order to allow the treated water reservoir to be maintained without taking the water treatment plant offline.

→ Design and cost estimating for the City of Fresno, California, \$45 million Kings River Pipeline. The City of Fresno is currently designing a new 80 mgd surface water treatment and conveyance facilities as part of a decades long Metro Water Plan whose goal is to replace groundwater sources that have been experiencing over draft since the 1950s. The Kings River pipeline will convey raw water from the Kings River and associated irrigation canals to the surface water treatment and potable distribution. The design consists of 66,000 linear feet of 72-inch welded steel pipeline, a check structure and turnout to divert raw water to the pipeline, a flow meter vault, access manways, CAVs, blow-offs, and all

Education

MS Civil Engineering,
Utah State University,
2003

BS Civil and
Environmental
Engineering, Utah State
University, 2003

Licenses

Civil Engineer, California
Professional Engineer,
Colorado

Bart Giles, P.E.

associated electrical and instrumentation design.

→ Project engineer for the City of Aurora, Colorado, Wemlinger Treated Water Reservoir Rehabilitation. The project involves replacing roof access hatches; adding vents; demolishing piping and appurtenances inside and connecting to the existing 10-MG concrete treated water reservoir; installing multiple sections of piping, including tie-ins to existing piping; adding a valve to the reservoir drain pipe; and miscellaneous treated water reservoir concrete penetrations and repairs associated with piping and demolition. The bid price for the project was \$2.5 million, and the fast-track project needed to be constructed during the winter/spring of 2017. The project was staged to prevent shutdown of the Wemlinger Water Purification Facility during construction of the disinfection contact basin.



Provided detailed design for 3,100 feet of high-pressure, 36-inch and 42-inch water transmission main; 3,700 feet of 36-inch to 84-inch water transmission main; three large-diameter and three small-diameter trenchless crossings; and more than four miles total of plant process and yard piping ranging in size from 4 to 72 inches. Coordinated permitting through multiple agencies including county, city, airport, and Colorado Department of Transportation. Calculated plant hydraulics for the new 50-mgd water treatment plant to allow gravity flow of the process from the raw water tank through the finished water tank. Provided startup assistance, including running the treatment plant and pump station, troubleshooting mechanical and automated programming issues, and testing installed systems to verify proper performance.

→ Project engineer for the Thornton City of Thornton, CO, Water Project – Segment B Pipeline. The project involves designing 15 miles of 48-inch steel raw water transmission pipeline through 4 different municipalities, as part of an overall 70-mile pipeline that is being designed and constructed in phases. The alignment

includes 16 tunneled crossings of irrigation ditches, roads, and water bodies. Additional design responsibilities are obtaining permits from multiple agencies, land owner easement coordination, air valve and blowoff design, and filling/draining sequencing with high volume PRV and blowoff structures.

→ Project engineer for preliminary design of the Passaic Valley Water Commission, New Jersey, Water Storage Improvements. Responsible for preliminary sizing and layout of two 20-MG, two 15-MG, and two 5-MG aboveground prestressed concrete water tanks, more than three miles of 10 to 48-inch water piping, and corresponding site improvements.

→ Design reviewer for the City of Manhattan, Kansas, Water Treatment Plant and Wellfield Expansion. Checked and reviewed plans for the expansion, which included approximately 13,000 feet of 30 and 24-inch raw water pipeline, as well as for new 1,800-gpm vertical wells. The project also included a new 4.2-mgd transfer pump and new 5-mgd high service pump. All of the motors in the high service pump station were replaced, and two new variable frequency drives were added to the project.

→ Project engineer for design and construction of the Contra Costa Water District, California, Elderwood Reservoir Rehabilitation. The project involved evaluating and rehabilitating an above-ground steel water storage tank for seismic reliability and improved water quality mixing, including a new water quality mixing system within the tank.

→ Project engineer for the California Department of Corrections and Rehabilitation, California, Men's Colony Water Distribution Replacement. The project included hydraulic modeling to identify capacity and pressure deficiencies, consideration of water quality issues, and design for replacement of more than 112,000 feet of distribution piping, improvements, two booster pump stations, reservoir modifications, and well replacement.



Education

BS Geological Engineering, New Mexico State University, 1992

Licenses

Certified Construction Manager, Construction Manager Certification Institute, 07/01/04

Certification

Certified, Environmental Compliance Assessment, Training, and Tracking System (ECATTS), International Center for Leadership Development, 2016

Professional Affiliations

Construction Management Association of America

A. Eric Gilmore, CCM

Eric Gilmore is an advisor and construction manager with more than 26 years of experience building water and wastewater conveyance, storage, and treatment facilities. His responsibilities include all aspects of program management, construction management, and contract administration on behalf of the Owner. This includes oversight of contractors, issue resolution, change order review, and overall safety and quality assurance.

Relevant Experience

→ Construction manager for the Las Vegas Valley Water District, Nevada, Bermuda 2538 Zone Pumping Station. The project consisted of the installation of six constant speed potable water pumps with a design capacity of 5,200 gpm each, at 143 feet total dynamic head, approximately 1,400 feet of 72-inch and 1,200 feet of 48-inch water pipeline, cathodic protection, a radio telemetry survey, technical drainage study, surge analysis, computational fluid dynamics (CFD) modeling, architectural rendering, geotechnical investigation, permitting support, and construction services.

→ Construction oversight manager for Metro Wastewater Reclamation District, Denver, Colorado, Northern Treatment Plant. This \$475 million project was a progressive design-build project. Eric managed the construction oversight team with staff comprised of Carollo, sub-consultants, and the Owner for the construction of a 24-mgd (60-mgd ultimate buildout capacity) greenfield facility and regional interceptor system.

→ Program construction manager for the City of Henderson, Nevada, Southwest Water Reclamation Facility (SWRF). This project was a key element of the phased \$160M improvements program to the City of Henderson reclaimed water storage and delivery system. The other program phases included site readiness contracts and effluent delivery facility contracts developed and administered before and after the SWRF construction period. The City selected Eric and team as a third party to lead a bidability and constructability Review of the 90 percent contract documents. This review included participation of the designer, city engineering and operations staff, and Carollo subject matter experts with a formal report presenting findings and

recommendations for making the nearly complete design for the entire treatment, storage, and delivery system more bid-able and constructible.

→ Owner's advisor for the City of Houston, Texas, Northeast Water Purification Plant Expansion. This project includes planning, preparation, and preliminary construction of a \$1.8 billion program. Eric was an advisor for the City's Project Management Team and the Project Advisor – Technical Consultant (PMT/PATC) team establishing project administration, safety & quality assurance, work flows, organizational approach, team roles & responsibilities, sub-consultant management, and communication. He also assisted in establishing formal protocol and technique in daily, weekly, and monthly coverage and reporting of the design-builder's work for the PMT/PATC team.

→ Construction oversight manager for Metro Wastewater Reclamation District, Denver, Colorado, PAR 1225 South Headworks and Grease Processing Improvements. The \$53 million improvements project included addition and modification of all headworks components including screening, screening handling, grit removal and grit handling and replacement of the grease processing building with state-of-the-art equipment.

→ Construction manager for the Clark County Water Reclamation District, Nevada, Central Plant South Secondary Treatment Facility Phase 2, Site Preloading, Security Fencing, and Site Improvements Project. This project was one of three bid packages for the Phase 2 project which included site preloading for 40-mgd capacity of activated sludge and miscellaneous site improvements.

A. Eric Gilmore, CCM

→ Construction manager for the City of Las Vegas, Nevada, Lone Mountain Sewer Lift Station Modifications project. The project consisted of removal of the two existing pumps, electrical and controls, adding an electrical room, installation of three new 1,350 gpm pumps, power, controls, a standby generator, increasing wet well capacity, and 2,100 LF of 14-inch force main.

→ Project engineer for the City of Henderson, Nevada, On-Call Services. Services included plan reviews, and engineering services for design and construction support for public works projects.

→ Design engineer the City of Henderson, Nevada, for Sewer Lift Station Improvements to Armillaria, South Valley, and Stephanie Sewer Lift Stations. Project included preparation of plans for improvements as part of the On-Call Services for the City. Project included odor control facilities, site improvements, and piping modifications.

→ Process engineer for the Southern Nevada Water Authority, Nevada, Facility Operations Manual (FOM) Preparation for the South Valley Lateral Rate of Flow Control Stations (ROFCS). The FOM provides information on all of the valves, equipment and controls at the ROFCS, along with details on all of the modes of operation and control. The manuals are written for operating staff, first responders, maintenance staff, engineers, and information systems staff. They are designed as road maps to information through links to databases. They will also be used for training and development purposes.

→ Construction manager for numerous contracts for the Southern Nevada Water Authority, Nevada, \$2.2 billion Capital Improvements Program, including:

- Construction manager for the IPS-2 to Alfred Merritt Smith Water Treatment Facility Bypass Pipeline, a \$14 Million Design-Build Project consisting of 2,400 ft. of large diameter pipeline and an associated rate of flow control station to provide 365 million gpd of emergency

by-pass ability from one of two intake pumping stations to the ozone facility at the water treatment plant.

- Construction manager for the East Valley Lateral, a \$37 million fast track project consisting of two 150 ft. shafts and 1,400 ft. tunnel with 7 miles of 78 inch pipeline.
- Construction manager for the Raw Water Pumping System Project, a \$109.4 million project constructing three major pumping stations and a series of large diameter pipelines including an emergency by-pass for the ozone contactor of the existing Alfred Merritt Smith Water Treatment ozone facility designed to move 385 million gallons of raw water per day from Lake Mead to a new water treatment plant on the southeast side of the Las Vegas Valley.

→ Acting construction manager for the Southern Nevada Water Authority, Nevada, Public Works Project - Lake Mead Intake No. 2. Project included final design stages, addendum drafting, bidding process, and start up activities.

→ Resident construction engineer for the Southern Nevada Water Authority, Nevada, System Facility Improvements Project - River Mountain Tunnel No. 2. \$20 million project consisted of construction of a 4 mile 12 ft. diameter concrete lined tunnel.



Vincent S. Hart, P.E., ENV SP, LEED

Vincent Hart, an executive vice president with Carollo, has 27 years of experience in planning, design, and expansion of water supply, water treatment, and water distribution facilities. He has been involved with multiple bench and pilot studies involving design and expansion of water treatment facilities and has written various publications and given presentations on the subject. Mr. Hart has served as water supply engineer for design and operation of pilot plant facilities and water treatment plant expansion projects. His areas of expertise include flocculation and sedimentation of challenging to treat waters.

Education

MS Environmental Engineering, Virginia Polytechnic Institute, and State University, 1994

BS Environmental Engineering, Syracuse University, New York, 1992

Licenses

Professional Engineer, Colorado, Missouri, Minnesota, Kansas, New Jersey, North Carolina, Tennessee

Certifications

LEED Accredited Professional, Green Building Certification Institute, 04/18/2009

Envision Sustainability Professional, Institute for Sustainable Infrastructure, 12/2/18

Professional Affiliations

American Water Works Association

Water Environment Federation

American Society of Civil Engineers

National Association of Corrosion Engineers

Relevant Experience

→ Design manager for the Colorado Springs Utilities, Colorado, Southern Delivery Water Treatment Plant and Pump Station. The project included design of side-stream ozone, pump mix rapid mixing system, vertical mixer flocculation, parallel plate sedimentation, and engineered Biofiltration. The ozone system utilizes injection equipment to dissolve up to 650 pounds per day of ozone into a small side-stream flow of settled water that is then flash mixed into the overall process stream.

→ Technical advisor for the City of Greeley, Colorado, Boyd Lake Water Treatment Plant Process Improvements project. The project included ozone, coagulant, hydrogen peroxide, sodium hypochlorite (including an evaluation of onsite versus bulk hypo) and sodium hydroxide chemical feed systems.

→ Project manager for the South Adams County Water and Sanitation District, Colorado, Pellet Softening Disinfection Improvements Project. The project consisted of the design of a full-scale pellet softening system at the Klein WTF for the removal of calcium hardness. This included a series of pellet reactors, a stabilization basin of pH adjustment, anthracite over sand filters for turbidity removal, a new chemical storage building, and all of the associated facilities required to implement the system. Also included in this project is the design of a temporary sodium hypochlorite feed system which allowed the District to continue operating the facility during construction after the existing chlorine system was demolished.

→ Technical advisor for the Centennial Water and Sanitation District, Colorado, Zone 4C Pump Station. Design team included structural, electrical,

instrumentation and controls, mechanical, HVAC, architectural, and CAD disciplines for the 16-mgd potable water pump station. The pump station building was given architectural treatments to appear like a barn in order to minimize visual impact to surrounding neighborhoods. Major elements of the project included four 350-horsepower horizontal split-case pumps, 1250-kW standby generator, two story open pump room with bridge crane, and high to low pressure zone bypass line.

→ Project manager for the City of Aurora, Colorado, 80-mgd Griswold Water Purification Facility (WPF) Solids Study and Predesign and the 80-mgd Wemlinger WPF Chem Feed Study and CT Basin Design. This project included the planning of the conversion from direct filtration to flocculation/sedimentation with parallel plates (Wemlinger).

→ Project engineer for the City of Thornton, Colorado, Water Treatment Plant Replacement Owner's Advisor Services. The City elected to replace the 20-mgd Water Treatment Plant with a new 20-mgd plant through a design-build (DB) contract. Responsible for preparation of a Treatment Technology Study, which reviews historical raw water quality for three potential water sources, reviews current and anticipated drinking water regulations, and develops and evaluates treatment process alternatives. Upon selection of the preferred treatment process alternative, conceptual documents were developed for solicitation of the DB contract. Assistance with quality management during the design stage of the DB contract is ongoing.

→ Pretreatment process lead in the owner's advisor roles for the City of Houston, Texas, Northeast Water Treatment Plant (NEWTP)

Vincent S. Hart, P.E., ENV SP, LEED

320-mgd Expansion. Mr. Hart was responsible for helping establish the design criteria for the flocculation and sedimentation processes. This included a thorough investigation of plate loading rates and diurnal thermal effects on plate operation. Mr. Hart also served as a technical advisor for the pilot plant project, provided mechanical condition assessment of the existing NEWTP, and was the project engineer for the original treatability study, which included a finished water quality evaluation. This study recognized potential issues associated with finished

→ Project manager for the City of Aurora, Colorado, Wemlinger Water Purification Facility Improvements. The project involved \$15 million of improvements to the existing 80-mgd facility, including chemical feed improvements, solids handling facilities, and emergency generators. The project construction timeframe corresponded to off-peak season for the treatment facility.

→ Project manager for the City of Aurora, Colorado, 80-mgd Wemlinger Water Purification Facility (WPF) Improvements. The \$24.9 million project included construction of four new sand drying beds and a reclaim washwater pump station to return clarified water back to the Wemlinger WPF inlet, among other improvements. The project achieved 75 percent solids in 61 days of drying.

→ Project manager for the City of Thornton, Colorado, Alternative Coagulant and Ammonia Injection Relocation Study at the 50-mgd Wes Brown Water Treatment Plant. The project included identification, testing, analysis, and recommendation of alternative primary coagulants to reduce fouling on the plant's existing membranes, as well as evaluation of relocating the ammonia dosing further downstream in the existing clearwell and discontinuing pre-chlorination for primary disinfection.

→ Facilitator for the East Bay Municipal Water District, California, \$30 million Sobrante and Upper San Leandro Ozone System Improvements. The project replaces aging ozone equipment with a new high-efficiency system providing increased

reliability, redundancy, and safety at two 60-mgd surface water treatment plants.

→ Technical advisor for the Central Lake County Joint Action Water Agency, Illinois, Ozone System Upgrades Predesign. The project entailed an upgrade/replacement of a 50-mgd, 21-year-old ozone system.

→ Project engineer for the City of Oklahoma City, Oklahoma, Lake Stanley Draper Water Treatment Plant Expansion and Improvements. The project expanded the treatment capacity from 90 mgd to 150 mgd without the need for additional treatment basins or filtration facilities. The \$35 million project involved redesign of the existing rapid mix, flocculation, and sedimentation basins to incorporate a pump mix system (first of its kind in the State of Oklahoma), walking beam flocculation equipment, and FRP baffle walls and concrete ported walls to promote a plug flow effect. The project also included a carbon dioxide and hydrated lime system for supplemental alkalinity addition due to historically low finished water alkalinity and associated red water complaints.

→ Process engineer for the City of Houston, Texas, 320-mgd North East Water Purification Plant Expansion Pilot Testing. This phase of the project involved 16 months of pilot testing to evaluate the effectiveness of alternative approaches to coagulation, plate settling, ozonation, biological filtration, and chlorine dioxide. Piloting was conducted to confirm that the new facilities can reliably and consistently treat a challenging raw water supply, demonstrate the effectiveness of ozone for disinfection and taste and odor control, and confirm that filter rates up to 8 gpm/sf could effectively treat the water.

→ Technical advisor for the Colorado Springs Utilities, Colorado, 80-mgd McCullough WTP Flocculation and Filters Evaluation. The project found that the flocculation baffle walls did not provide adequate head losses to get good distribution through the flocculation basins, plate loading rate was too high for the floc quality, and filter boxes could be retrofit to provide better filter performance.



Mark A. Keller, P.E.

Mark Keller has more than 25 years as a structural engineer with experience in project management, planning and execution of design, detailing, and construction phase services of large projects. Past work includes condition assessments for master plans and feasibility studies for preliminary design direction. Recent projects include:

Education

MSCE Structural Engineering, Auburn University, 1994

BSCE Structural Engineering, The Citadel, 1992

Licenses

Professional Engineer, Colorado, North Dakota, Oklahoma, Arkansas, Missouri, Minnesota, Oregon

Civil Engineer, Nebraska

Structural Engineer, Oklahoma

Professional Affiliations

American Concrete Institute – National and Rocky Mountain Chapters

American Society of Civil Engineers

Relevant Projects

→ Structural Engineer for the South Adams County Water and Sanitation District, Colorado, Pellet Softening Disinfection Improvements Project. The primary process building included numerous reactor and filter tankage, extensive associated access platforms, and two 200-ton pellet hoppers in a truck bay all housed in a pre-engineered metal building. Secondary facilities included a cast-in-place concrete stabilization basin for pH adjustment and a new chemical storage building.

→ Responsible for quality management of the structural improvements to the Boyd Lake Water Treatment Plant in Greeley, Colorado. The project includes alterations to the flocculation/sedimentation basins, adaptive reuse of a portion of the basins for conversion to a ozone facility, and new chemical storage and feed facilities.

→ Lead structural engineer for the Zone 4 Pump Station in Centennial, Colorado. The project included four 350-hp pumps and surge tank in a two-story open pump room with a bridge crane. Challenges included siting the project at a location prominently within the public view requiring the facility to be disguised as a barn.

→ Structural engineer responsible for the repair and rehabilitation of an ozone contactor at the David L. Tippin Water Treatment Facility in Tampa, Florida.

→ Lead structural engineer for new 1.2 MG AWWA D110 wire-wound, prestressed concrete clearwell at the Columbia Water Treatment Plant in Columbia, Idaho.

→ Provided assessment of structures at Ozark Point Water Treatment Plant in Little Rock, Arkansas. The assessment was performed to evaluate the condition of basins constructed in the 1880's through the 1930's to determine the feasibility of reuse for continued service as part of a forthcoming plant modernization.

→ Lead structural engineer for the City of Norman, Oklahoma, Water Treatment Plant Improvements Project. The scope includes design and construction of new ultraviolet (UV) building, ozone generation building, ozone contactor/destruct facility, and a new chemical storage and feed facility. Challenges included structures founded on soils consisting of deep, unconsolidated fills.

→ Structural engineer for the Colorado Springs Utilities McCullough Filter Rehabilitation, Colorado Springs, Colorado. Evaluated leaking filter basins at a water treatment plant. Leakage was observed at numerous locations, including at backwash troughs, through walls to adjacent gallery spaces, and at pipe penetrations. Alternative repair options were evaluated and formal recommendations were presented to the client.

→ Completed technical specifications for the procurement of a new, multi-legged, 400,000 gallon elevated storage tank for the City of Shelton, Washington. Work included development of specifications for the structural design criteria, design and detailing of foundations for bidding the work.

→ Performed a condition assessment of eleven, covered potable water storage reservoirs, totaling more than 25 million gallons of storage capacity, for the City of Westminster, Colorado. The tanks included one prestressed, concrete reservoir, two elevated, welded steel storage tanks, and eight ground-supported, welded steel storage tanks.

→ Project structural engineer for the Altamont Tank Repairs for the City of Livermore, California. Developed technical specifications and provided engineering services during construction for repairs to a 3 million gallon, ground-supported potable water storage tank that had deteriorated due to corrosion of the roof structure. In

Mark A. Keller, P.E.

addition to the repairs, the City elected to upgrade the tank with the replacement of the roof vent with a vandal-deterrent style vent and installation of a sample tap and new cathodic protection system. The previously applied bituminous-based lining was removed and a new two-part, high-solids epoxy lining was applied.

→ Project manager and structural engineer for the Repairs and Improvements to the Northwest Water Treatment Facility clearwell for the City of Westminster, Colorado. Developed detailed bid documents and provided full construction management services for the restoration and rehabilitation of the 2 million gallon clearwell for the City's Northwest Water Treatment Facility. The tank, constructed only 11 years earlier, suffered from premature lining failure and corrosion. In addition to the bid documents, the tank was removed from service and a vertical survey was conducted to determine if foundation settlement had occurred.

→ Lead structural engineer for the design of a new sewer lift station with grit settling basins and screening channels in Omaha, Nebraska. The project is located entirely within the critical zone of the Missouri River levee system under the jurisdiction of the Corp of Engineers and includes deep excavation in an area of poor soils and requiring driven piles.

→ Developed bid documents and provided construction management services for restoration and modifications to a 2 million gallon fluted shroud, elevated water storage tank (Hydropillar) in Westminster, Colorado.

→ Provided an out-of-service evaluation of two, 2 million gallon ground supported water storage tanks (Gregory Hill) for the City of Westminster, Colorado. The work consisted of both visual inspection and non-destructive testing, including magnetic flux leakage testing of the floor plates and mapping of the roof framing for reconstruction.

→ Lead structural engineer and project manager for the Repairs and Improvements to the Wandering View Tanks project for the City of Westminster, Colorado. The project

consisted of improvements to a 3 million gallon and a 5 million gallon, welded-steel, potable water storage reservoirs. Repairs involved removal and replacement of structural elements damaged due to corrosion. Improvements included replacement of manways in the tank shells, improvements to overflow weirs and piping, installation of new check valves, and application of new interior linings and exterior coatings.

→ Performed a condition assessment of eleven, covered potable water storage reservoirs, totaling more than 25 million gallons of storage capacity, for the City of Westminster, Colorado. The tanks included one prestressed, concrete reservoir, two elevated, welded steel storage tanks, and eight ground-supported, welded steel storage tanks.

→ Lead structural engineer for the Second Creek Interceptor Segment IE Design, City of Aurora, Colorado. The pipeline is saving Aurora \$14 million that would have otherwise been invested in a temporary increase to their lift station. The project includes 5,000 linear feet of 36-inch pipe, and involves trenchless technologies.

→ Structural engineer for the Colorado Springs Utilities McCullough Filter Rehabilitation, Colorado Springs, Colorado. Evaluated leaking filter basins at a water treatment plant. Leakage was observed at numerous locations, including at backwash troughs, through walls to adjacent gallery spaces, and at pipe penetrations. Alternative repair options were evaluated and formal recommendations were presented to the client.

→ Project manager and structural engineer for the Repairs and Improvements to the Northwest Water Treatment Facility clearwell for the City of Westminster, Colorado. Developed detailed bid documents and provided full construction management services for the restoration and rehabilitation of the 2 million gallon clearwell for the City's Northwest Water Treatment Facility. The tank, constructed only 11 years earlier, suffered from premature lining failure and corrosion.



Education

BS Geological Engineering, Colorado School of Mines, 1992

MS Engineering Systems, Colorado School of Mines, 1998

Licenses

Professional Engineer, Colorado, Kansas

Professional Affiliations

American Society of Civil Engineers

National American Society for Trenchless Technology

James J. Kriss, P.E.

Jim Kriss has 27 years of experience in infrastructure and environmental engineering and has served as both project manager and project engineer on a wide variety of projects. Project delivery for various designs has included traditional design bid build and alternate deliveries including both design build and CM at risk. Mr. Kriss' design and construction experience includes mechanical pumping and piping systems, raw and potable pipelines, sanitary and storm sewer pipelines, sanitary forcemains, hydraulic design and modeling, general civil site development, disinfection and dechlorination systems, geomembrane liner systems for primary and secondary containment, and solid waste permitting and design.

Pipeline and Pump Station Design

→ Project manager for the City of Aurora, Colorado, Gun Club Raw Water Expansion. The project involved design and construction of raw water system improvements to expand the City's existing raw water deliveries to Heritage Eagle Bend golf course. The existing raw water pumps were undersized for the expanded service, and replaced with higher capacity pumps, including soft starters, pump control valves, and surge anticipator valves for transient control. A new 1.6-mile, 12-inch raw water transmission pipeline was designed to tie into the existing raw water pipeline for conveyance to Heritage Eagle Bend. The new pipeline alignment is routed through both urban and open space areas and includes environmentally sensitive areas in the floodplain, wetlands construction, and two horizontal directional drill sections. In addition, a very complex flow split and flow control system was designed to deliver raw water to the two end users at varying flow rates.

→ Project manager for the Arapahoe County Water and Wastewater Authority, Colorado, Chambers Reservoir Connection Pipeline. Managed the raw water transmission pipeline connecting a raw water storage reservoir pump station to the Authority's reuse distribution system. The pipeline design consisted of approximately 4,400 lf of 24-inch PVC pipe. Multiple routes were evaluated to minimize impacts to landowners' developable properties and to minimize the cost of a required tunneled crossing for the E-470 Public Highway Authority. The tunnel crossing consisted of approximately 435 lf of 42-inch steel casing and was designed to meet E-470 crossing requirements. The project was permitted

through the State Engineers Office, E-470, Town of Parker and Douglas County jurisdictions, which included a grading, erosion, and sediment control (GESCC) permit, Douglas County Location and Extent public hearing process, Douglas County floodplain permit, and Town of Parker Use by Special Review public hearing process.

→ Project engineer for the East Cherry Creek Valley Water and Sanitation District (ECCV), Colorado, Western Water Transmission Pipeline and Pump Station. The project included construction of a new 14-mile 48/54-inch steel water transmission pipeline and 15 trenchless crossings totaling 3,493 lf, including highways (C-470, E-470, and I-70) and various roadways. In addition, a 30-mgd pump station was designed to convey potable water to ECCV's existing water storage reservoirs. The pump station was designed for an initial operating flow of 15 mgd, expandable to 30 mgd, and included sodium hypochlorite disinfection systems. Specific tasks included pipeline design, tunneled crossings of various roadways, and multiple stream crossings. Mr. Kriss was responsible for hydraulic analyses, pipeline alignment, thrust analysis, wall thickness design, and tunnel casing design. Also responsible for pump station process piping design, pump station layout, and civil/site development.

→ Project manager for the City of Fresno, California, \$45 million Kings River Pipeline. The City of Fresno is currently designing a new 80 mgd surface water treatment and conveyance facilities as part of a decades long Metro Water Plan whose goal is to replace groundwater sources that have been experiencing over draft since the 1950s. The Kings River pipeline will convey

James J. Kriss, P.E.

raw water from the Kings River and associated irrigation canals to the surface water treatment and potable distribution. The design consists of 66,000 linear feet of 72-inch welded steel pipeline, a check structure and turnout to divert raw water to the pipeline, a flow meter vault, access manways, CAVs, blow-offs, and all associated electrical and instrumentation design. Preliminary design included routing analysis, hydraulic evaluations, development design and operating criteria, traffic control analysis, utility potholing, geotechnical investigation, and corrosion investigation and design.

→ Project manager for the East Cherry Creek Valley Water and Sanitation District (ECCV), Colorado, Northern Water Supply project. Served as project manager for design of the District's Northern Water Supply Project Water Transmission Pipeline, involving 31 miles of 48-inch steel pipeline and 15 trenchless crossings totaling 2,000 lf, including highways (E-470 and I-70), railroads (BNSF and UPRR), and various roadways. Project delivery was CM at Risk with a guaranteed maximum price contract. Multiple procurement packages were assembled to expedite construction, including pipeline materials, valves, tunnel installation contractor, and pipeline installation contractor. Various alternatives were evaluated during design, including a phased approach with two pipelines. Each alternative was designed in sufficient detail to provide accurate cost estimating along with power consumption and present worth evaluations to allow the District to make prudent decisions on final system configuration. Ultimately, a single 48-inch pipeline was designed and constructed. Also functioned as a technical advisor and design engineer for two 9-mgd booster pump stations, performing hydraulic evaluations and pump selection along with preliminary pump station layout. Specific tasks included managing multiple subconsultants including geotechnical, surveying, cathodic protection design, and land acquisition; managing multiple design tasks including pipeline alignment routing, system hydraulic analysis, power consumption and present worth evaluation, pipeline design,

material/equipment selection, tunnel design, appurtenance selection and sizing, pump selection, and pump station layout; procurement of materials and equipment including pipeline, valves, pumps, and tunneling contractor; and coordination with multiple jurisdictions across five cities and three counties.

→ Design engineer for the Ute Water Conservancy District, Colorado, Plateau Creek Pipeline Replacement Preliminary and Final Design. The project involved replacement of an existing 15-mile, 24-inch diameter raw water RCCP pipeline with a 48- and 54-inch welded steel pipeline to convey raw water from the District's surface water reservoirs to their water treatment plant. The existing pipeline alignment followed the environmentally sensitive Plateau Creek, and a parallel replacement alignment was not possible for most reaches. The new alignment included 2.5 miles of hard rock tunneling to allow the existing pipeline to remain in service during construction of the new pipeline. Responsible for pipeline alignment, pipeline wall thickness and thrust analysis, downstream flow control and valving facilities, air and vacuum protection, blowoff and surge control valve configurations, and hydraulic analyses.

→ Design engineer for the Tucson Water, Arizona, Treated Water Transmission Main. Performed preliminary alignment design for the Northeast "D" Zone treated water transmission main. The project involved 5.9 miles of 30- and 24-inch ductile iron pipe. Alignment routing was established to minimize crossings of existing utilities and reducing impacts to traffic and associated traffic control to the extent possible. Survey information was available for planimetric features and surface evident of underground utilities. Final design would be developed using supplemental utility survey information to establish vertical control. The horizontal alignment was designed using station and offset relative to an alignment control line.



Steven P. Lindemann

Steve Lindemann, is a knowledgeable and focused water professional who has been praised for his commitment to quality and efficiency. He has 30 years of experience with construction of water resource projects and more than 20 years of experience on design-build water resource projects throughout the United States and Canada. He brings a broad base of experience in all phases of project delivery.

Education

B.S. (Hons) Construction Technology, North Dakota State University, 1990

AAS Architectural Drafting, North Dakota State College of Science, 1987

Certifications

Board of Certified Safety Professionals

Relevant Experience

→ Deputy design-build manager for the Metro Wastewater Reclamation District, Colorado, Northern Treatment Plant. The Northern Treatment Plant is a 24-mgd greenfield wastewater treatment plant that encompasses primary, secondary and tertiary treatment processes, along with solids handling, gas conditioning, cogeneration, and odor control. Mr. Lindemann was the lead for all construction project engineering and was directly responsible for process equipment, including procurement assistance and scope definition, submittal review, delivery and installation of equipment, submittal of operation and maintenance information. He also interfaced with the commissioning team for equipment startup. The process equipment for the Metro NTP project included 77 separate packages, with a total cost of \$28 million.

→ Construction manager for the Colorado Springs Utilities, Colorado, Fountain Creek Recovery Project. This project consisted of the construction of an 18.5 million gallon spill pond, an exchange pond, creek diversion and intake structure, and a pump station. Mr. Lindemann developed a project budget and schedule along with tools for tracking self-perform crew production and unit costs. Mr. Lindemann was also responsible for the procurement of equipment, materials and leasing of earthmoving equipment. He assisted with sub-contractor management, and implementation of the safety program.

→ Superintendent for the City of Thornton, Colorado, Columbine (Wes Brown) WTP Renovation. This was a WTP remodeling and expansion project to convert from conventional filtration to submerged membrane treatment for potable water. The project also included construction of a high service pump station, chemical building, administration building, vehicle storage fa-

cility, and water quality testing laboratories. Mr. Lindemann supervised construction of the administration building, vehicle storage facility, and water quality testing laboratories. He was responsible for manpower, equipment and material planning, and execution of self-perform and subcontractor work. He delivered the administration building, vehicle storage facility, and water quality testing laboratories four weeks ahead of schedule and with zero recordable or lost time injuries.

→ Construction manager for the City of Longmont, Colorado, Longmont WWTP Digester Rehabilitation and Odor Control Improvement. This project consisted of an anaerobic digester remodeling project that included replacement of two digester covers, sludge heating and mixing system replacement, and digester gas scrubbing. The project also included odor control system improvements in solids handling processes and construction of a biofilter. Mr. Lindemann was responsible for client communication, schedule development and progress tracking. He oversaw budgeting to ensure the scope of work was delivered in accordance with the guaranteed maximum price agreement. Mr. Lindemann also procured all equipment and wrote and negotiated all subcontractor scopes of work. He jointly managed contingency assignments with the City of Longmont and returned over \$40,000 in shared savings to the City of Longmont.

→ Project engineer for Denver Water, Colorado, Marston WTP Filtration Improvements. This project consisted of filtration facility demolition, and a replacement project that also included backwash system replacement, chemical facility upgrades, and construction of a new administration building. Mr. Lindemann was responsible for the procurement of equipment and materials, shop drawing review, delivery of material to

Steven P. Lindemann

meet the construction schedule, self-perform crew management, and implementation of the safety program. He also developed equipment and process system startup plans. Mr. Lindemann received commendation from Denver Water inspection group for commitment to quality.

→ Design-build manager for the City of Midland, Texas, Midland Water Pollution Control Plant Upgrades. The \$136M project includes design, permitting, construction, and commissioning of new secondary treatment, tertiary treatment, dewatering facilities, and a SCADA system for an existing wastewater plant. The project also includes extensive upgrades to existing primary treatment facilities. Responsibilities included project management during design preconstruction and construction. Design phase management focused on alignment between the engineering team, client, and stakeholders to ensure project performance requirements, budget, and schedule could be met. Preconstruction phase project management included building the site construction team, budget development, schedule development, bidding and award, safety planning, and detailed client cash flow analysis.

→ Project engineering manager for the City of Santa Fe, New Mexico, Buckman Direct Diversion (BDD) Project. The BDD project consisted of the construction of a raw water intake structure, raw water pump stations, an advanced water treatment plant, and 27 miles of raw water and finish water pipelines. Mr. Lindemann was responsible for procurement and installation of mechanical equipment and systems, startup and commissioning of mechanical systems including micro filtration, granular activated carbon, ozone, and pumping equipment. He developed a membrane module installation plan that contributed to saving three weeks on the schedule and allowed system testing and production of potable water to occur.

→ Project engineer for the City of Fort Bliss, Texas, Temporary Unit of Action and Underground Utilities. This project was for the installation of 27 miles of underground utilities (water, sanitary sewer and storm sewer) as part of a Temporary Unit of Action pro-

gram on the Fort Bliss Army Base. Also included, were two sewage pump stations, installation of a 3-million gallon above ground storage tank, and a booster pump station. Mr. Lindemann was responsible for procurement of equipment and materials, self-perform crew management, and implementation of the safety program. The CH2M Hill Engineers team included six underground utility crews and 85 craft personnel.

→ Commissioning engineer for the City of Hamilton, Ontario, Woodward Avenue WWTP Biogas Enhancement and Digester Upgrade Project. The project consisted of construction of a new sludge thickening facility, upgrades to an existing digester facility, installation of a new bio filter odor control system, and installation of a gas conditioning system for purifying digester gas and introducing it into the municipal natural gas grid. Mr. Lindemann was responsible for development of commissioning plans and startup, and commissioning of mechanical equipment, treatment processes, and instrumentation systems. He operated the sludge thickening facility during acceptance testing period. He also completed acceptance testing for the project without significant interruption to any system and turned over the facility to the client three weeks ahead of the contractually required date.



Education

MS Civil Engineering,
University of Colorado,
Boulder, 2016

BS Environmental
Engineering, University of
Colorado, Boulder, 2014

Licenses

Professional Engineer,
Colorado

Professional Affiliations

American Water Works
Association

Engineers Without
Borders-USA, Rocky
Mountain Professional
Chapter

John A. Meyer, P.E.

John Meyer joined Carollo in 2016 and has experience working on both water and wastewater treatment projects. He has worked on water treatment planning studies, benchtop and pilot testing, water treatment system designs, construction oversight, and treatment plant start-up and commissioning.

Water

→ Project engineer for the City of Greeley, Colorado, Boyd Lake WTP Improvements project. Served as the primary design process design engineer for a new chemical storage and feed facility to house caustic soda, hydrogen peroxide, and sodium hypochlorite equipment. Also provides design support for the conversion of an existing sedimentation basin into an intermediate ozone facility, and the addition of a liquid oxygen system for hypolimnetic lake aeration of the facility's source water body.

→ Project engineer for the South Adams County Water and Sanitation District, Colorado, Pellet Softening Disinfection Improvements. The project consisted of the design of a full-scale pellet softening system at the Klein WTF for the removal of calcium hardness. This included a series a pellet reactors, a stabilization basin of pH adjustment, anthracite over sand filters for turbidity removal, a new chemical storage building, and all of the associated facilities required to implement the system. Also included in this project is the design of a temporary sodium hypochlorite feed system which allowed the District to continue operating the facility during construction after the existing chlorine system was demolished. Preliminary design work for the layout of the facility was completed using Sketchup modeling.

→ Project engineer for the City of Aurora, Colorado, Griswold Water Purification Facility Solids Study and Preliminary Design. Developed hydraulic models of the facility's backwash, filter-to-waste, and washwater recycle systems. Performed bench scale tests to characterize residual sludge and the condition of the existing lagoon sand. Responsibilities also included analyzing solids dewatering alternatives including engineered lagoons, sand drying beds, and mechanical dewatering systems. Developed

two Blue Plan-it® models to evaluate the various solids handling alternatives. The first was a dynamic model which simulated solids drying in a lagoon or sand drying bed to evaluate how lagoon size and loading rate impacted long term operations and cost. The second model was used to evaluate how different solids handling alternatives would be impacted by operational changes, energy consumption, drying time, and disposal cost.

→ Project engineer for the City of Thornton, Colorado, Water Treatment Plant Replacement Owner's Advisor. The City elected to replace the 20-mgd Water Treatment Plant with a new 20-mgd plant through a design-build (DB) contract. Assisted in the development of a conceptual design for a new treatment plant to replace the existing Thornton Water Treatment Plant. Evaluated historical data to establish treatment process design criteria and goals.

→ Project engineer for the City of Aurora, Colorado, Wemlinger Treated Water Reservoir Rehabilitation. The project involves replacing roof access hatches; adding vents; demolishing piping and appurtenances inside and connecting to the existing 10-MG concrete treated water reservoir; installing multiple sections of piping, including tie-ins to existing piping; adding a valve to the reservoir drain pipe; and miscellaneous treated water reservoir concrete penetrations and repairs associated with piping and demolition. The bid price for the project was \$2.5 million, and the fast-track project needed to be constructed during the winter/spring of 2017. The project was staged to prevent shutdown of the Wemlinger Water Purification Facility during construction of the disinfection contact basin.

→ Project engineer for the Willmar Municipal Utilities, Minnesota, Master Plan and Preliminary Design Report for Conversion to Biofiltration. Researched and

John A. Meyer, P.E.

Awards

Distinguished Senior in Environmental Engineering, University of Colorado, College of Engineering and Applied Science, 2014

Best Student Paper Award, "Assessing Population Weighted Risk Reduction Implications for Centralized vs. Distribution System-Based DBP Control Strategies." AWWA Water Quality Technology Conference, 2016. Indianapolis, Indiana.

Other Accomplishments

Open for Quote

evaluated several alternative treatment plant and point-of-use technologies to reduce salty discharges from domestic water softeners to the wastewater treatment system. Developed hydraulic models for the Northeast Water Treatment Plant and Southwest Water Treatment Plant which incorporated process changes from green sand filtration to Biofiltration. Estimated project construction, operations, and maintenance costs.

→ Project engineer for the City Aurora, Colorado, 80-mgd Wemlinger WPF CT Chamber Design. The project consisted of a 2.5 mg buried concrete disinfection chamber with a serpentine channel and a baffling factor of 0.80 outside of the treated water reservoir at the Wemlinger WPF. The design included chlorine and ammonia dosing and flash mixing to produce chloramines at both the beginning and the end of the CT Chamber, sodium hydroxide dosing to adjust pH, chlorine, ammonia, pH monitoring, and turbidity monitoring, and a supplemental chlorine boosting location part way through the CT chamber. Additional design elements included flow metering, pumped CT-to-waste to enable quick draining of the CT chamber, and the ability to bypass the treated water reservoir to two different pressure zones in order to allow the treated water reservoir to be maintained without taking the water treatment plant offline. The preliminary design work through the 30 percent deliverable for this project was completed using Sketchup modeling to develop an initial layout of the CT Chamber and the associated pipe galleries.

→ Project engineer for the City of Greeley, Colorado, Boyd Lake WTP and Bellvue WTP Solids Study. Evaluated the existing solids handling systems for the City's two water treatment plants. Developed conceptual designs for several alternatives at each facility to improve those systems in order to produce better recycled water quality and enhance solids dewatering. Provided cost estimates for the preferred alternatives and made recommendations to the City on which technologies would be best suited to meet their unique needs.

→ Project engineer for the South Adams County Water and Sanitation District, Colorado, Pellet Softening Study. This project consisted of a month-long pilot skid operation to evaluate the feasibility of pellet softening as a viable hardness removal strategy at the Klein Water Treatment Facility. During this study, various testing was conducted to determine the impact of adjusting pH, reactor loading rate, source water wells, and seed bed characteristics to determine the optimal operating parameters required to achieve the District's hardness removal goals. The results of this pilot study were used to develop alternative treatment schemes, site layouts, and cost estimates for various full-scale pellet softening systems which would potentially be implemented at the site.

→ Project engineer for the City of Aurora, Colorado, Wemlinger Water Purification Facility Disinfection Evaluation and Alternatives Analysis. Evaluated computational fluid dynamics data and historical water quality data to create several alternatives for improving disinfection contact time at the facility. Developed cost estimates for each of the proposed alternatives and created a preliminary design and 3D model of the preferred CT Chamber alternative.

→ Project engineer for Colorado Springs Utilities, Colorado, Edward W. Bailey Water Treatment Plant Water Quality Testing. Performed bench scale experiments to help optimize coagulation and flocculation processes upon plant start-up. Investigated water quality monitoring issues related to manganese.

→ Project engineer for the City of Thornton, Colorado, Wes Brown Water Treatment Plant Alternative Coagulants and Ammonia Injection Relocation Study. Responsibilities included analyzing data from bench and pilot scale experiments with different coagulants to determine the most viable approaches for increasing membrane production rates. Assisted in developing process train modifications, which could be implemented at full scale to enhance treatment capacity while achieving established water quality goals.



Monte K. Richard, P.E.

Monte Richard brings more than 17 years of experience in electrical and control system engineering and design. His focus is in electrical distribution systems, process control, and industrial instrumentation for water and wastewater facilities and infrastructure. He works on a company wide basis with plant operations and managers to test, start-up, optimize and troubleshoot water and wastewater treatment plants. His experience includes:

Education

MS Electrical Engineering,
Colorado School of
Mines, 2009

BS Electrical Engineering,
Colorado School of
Mines, 2003

Licenses

Professional Engineer,
Colorado, Hawaii,
Oregon, Washington,
Illinois, Florida, Ohio,
New York, Maine

Electrical Engineer,
Arizona, California

Professional Affiliations

Institute of Electrical and
Electronic Engineers

Illuminating Engineering
Society of North America

Relevant Experience

→ Lead electrical and instrumentation design engineer for the Arapahoe County Water & Wastewater Authority (ACWWA), Colorado, flow connecting main. This project involved the design of the control and instrumentation for a new metering vault.

Strict coordination with ACWWA's radio and communications standards was followed in order to establish communications with the overall distribution SCADA network. The control system allowed for automated flow control based on operations selection of either set point flow or set point level in distribution tanks.

→ Project manager and lead electrical and instrumentation engineer responsible for providing electrical upgrades at the City of Aurora, Colorado, Griswold Water Purification Facility. The project included the design of a new service entrance medium voltage switchgear, replacement of the existing faulty Automatic Transfer Controller, and generator breaker trip unit modification to reduce arc flash incident energy.

→ Project engineer responsible for providing a Flow Control Center for the City of Aurora, Colorado. The project included the design for the relocation of the City of Aurora Flow Control Center. Design included 3D modeling of room layout options, SCADA console development, and network routing required to provide desired monitoring and control to the Flow Control Center Staff.

→ Lead electrical and instrumentation design engineer for the City of Boulder, Colorado, Betasso Water Treatment Plant improvements. The project included various upgrades to the water treatment plant including flash mix, sludge-drying beds, and a new powdered activated carbon system design.

→ Performed electrical and instrumentation condition assessment reports for the City of Boulder, Colorado, Betasso Water Treatment Plant and the 75th Street Wastewater Treatment Plant. The project included site investigations and a condition assessment report. The condition assessment report addressed the timeline and cost for asset replacement/ rehabilitation. The purpose of the report was to provide guidance for asset management planning over a 20-year period.

→ Project manager and lead electrical and instrumentation design engineer for various projects for the City of Fort Collins, Colorado. This series of design-build projects required on-site construction services and a close working relationship with the contractor. The projects included the design and construction of a new chemical storage facility, pump station, fluoride mag, and polymer chemical feed system, emergency generator, powder activated carbon system improvements, an odor control system, septage receiving, several motor control center replacements, uninterruptible power supply (UPS) support systems, and several other plant improvements.

→ Project manager and lead engineer responsible for providing an Electrical Master Plan to the City of Fort Collins, Colorado, Water Treatment Facility. The plan detailed the electrical distribution system along with vulnerability studies and suggested improvements. An improvement plan was provided to assist the client in budgeting construction and improvement efforts.

→ Lead instrumentation design engineer for the City of Ute, Colorado, Ute Water Treatment Plant Filter Upgrades project. This design-build project included an addition of four media filters and the rehabilitation of four existing filters. The project involved upgrades to the existing supervisory control

Monte K. Richard, P.E.

and data acquisition (SCADA) and programmable logic controller network, as well as a new plant fiber optic backbone. In order to give flexibility during a backwash, a new automated control strategy was implemented, allowing operators to select an automated filter-to-waste, scour wash, rinse-to-waste, and filter resting.

→ Lead electrical and instrumentation design engineer for a new diversion structure and metering vault for the City of Fresno, California, King's River Pipeline. This project included an evaluation of communication options, a technical memorandum was delivered comparing radio versus fiber. This design project required working in conjunction with the general contractor to provide efficient design and on-site construction services. The project included the design of the diversion structure Rubicon automated gates and associated control as well as the control and instrumentation for a new metering vault. The project required interconnection with the City's existing SCADA network, security network, as well as the Fresno Irrigation District SCADA network. Virtual path studies were performed to prove feasibility of radio paths during design.

→ Project manager and electrical, instrumentation, and control design engineer for the City of Aurora, Colorado, Prairie Waters Pump Station No. 1, No. 2, and No. 3 relay improvements. The project included the study and design for the replacement of 9 protective relays in existing medium voltage switchgear. The project also included the update of the electrical system study including updating the protective relay settings.

→ Project engineer responsible for providing a system wide Uninterruptable Power Supply (UPS) study and recommendation for the City of Aurora, Colorado. The project included the investigation, analysis, cost estimate, and recommendation for replacement of over 200 UPS systems located throughout the City's water treatment and transmission and distribution systems.

→ Electrical and instrument design engineer for the Metropolitan Water District of Salt Lake and Sandy, Utah, Point of the

Mountain Water Treatment Plant. This project involved the implementation of a new filtration plant and raw water pumping station. The pumping station required medium-voltage variable frequency drives to run 1,250- and 2,000-horsepower motors.

→ Lead electrical and design engineer for a new nanofiltration (NF) plant for Miami Dade County, Florida. The project included the electrical, instrumentation, and control design for 20 trains of NF skids, clean-in-place, various chemical feed systems, and ultraviolet disinfection reactors. The project involved implementing various electrical safety by design concepts including arc-flash-resistant gear, remote breaker control and racking, and reducing transformer sizes to limit the arc flash energy. The design included the addition of a distributed programmable logic controller and supervisory control and data acquisition (SCADA) network with a redundant fiber optic communication backbone. The control network included the implementation of communications with 15 remote well sites using Ethernet radio.

→ Lead instrumentation design engineer for the filter plant expansion for the Kern County Water Agency, California, Henry C. Garnett Water Purification Plant expansion. The project involved doubling the filter plant capacity by designing a second treatment train including a raw water and treated water pump station, filters, flocculation and sedimentation basins, various metering vaults, and chemical systems. The project included the design of a new plant-wide supervisory control and data acquisition (SCADA) system, programmable logic controller system, and redundant fiber communications backbone. Electrical, instrumentation, and control construction management services were provided. Start-up and control optimization services were provided for all plant processes.



Stephanie M. Riley, Ph.D.

Stephanie M. Riley earned her Ph.D. in Environmental Engineering Science from the Colorado School of Mines. Her area of focus is water reuse with expertise in pilot operation and research studies. She currently serves as a technologist assisting in water, reuse, and wastewater projects.

Education

Ph.D. Environmental Engineering Science, Colorado School of Mines, 2018

MS Environmental Engineering Science, Colorado School of Mines, 2015

BS Biology, Newman University, 2013

Relevant Experience

→ Lead investigator for Water Research Foundation (WRF) project 4833:

Understanding the Impacts of Wastewater Treatment Performance on Advanced Water Treatment Processes and Finished Water Quality. Led ozone (O₃), biofiltration (BAF), and granular activated carbon (GAC) pilot testing to investigate removal of per- and polyfluoroalkyl substances (PFAS) and contaminants of emerging concern (CECs).

→ Lead investigator for WRF project 4958: *New Techniques, Tools, and Validation Protocols for Achieving Log Removal Credit Across Nanofiltration (NF) and Reverse Osmosis (RO) Membranes.* Project included evaluation and testing of membrane integrity methods on nanofiltration (NF) and reverse osmosis (RO) systems. Led coordination and preparation of pilot testing.

→ Lead investigator for Bureau of Reclamation Desalination and Water Purification Research Project (BOR DWPR): *Evaluation of Novel Integrity Tests for Reverse Osmosis and Nanofiltration and Performance Comparison to Non-membrane-based Systems for Potable Reuse.* Developed test plan to investigate novel surrogates and tracers (e.g., conductivity modeling, charged aerosol detection, sucralose) for online monitoring of membrane integrity (i.e., log removal).

→ Lead investigator for WRF project 4719: *A Biofiltration Guidance Manual for Rapid-rate Filtration Facilities.* Project included the development of operator toolkits, checklists, and chapters in the published manual.

→ Lead investigator for WRF/California State Water Board Direct Potable Reuse Grant #4 (DPR-4): *Treatment for Averaging Potential Chemical Peaks (Experimentation to Address Knowledge Gaps).* Led the experimental plan and round-robin study at California utilities and total organic carbon

(TOC) manufacturers to evaluate the ability of TOC meters to detect volatile organic compounds (VOCs).

→ Co-investigator for the City of Ventura, California, DPR Pilot Testing. Led rapid bench-scale testing of O₃/BAF/UF/RO and UF/RO process trains to assess the toxicity of RO brine.

Publications/Presentations

→ Verdugo, E. M., Kumar, P.S., Riley, S.M., Gifford, M., Glover, C., Dickenson, E.R.V. "Removal of Disinfection Byproducts and Trace Organic Contaminants in Treated Wastewater using Pilot-scale Ozonation, Biofiltration, and Granular Activated Carbon." *Environmental Science: Water Research & Technology*, 2019.

→ Vatankhah, H., Riley, S.M., Murray, C.C., Quinones, O., Steirer, K.X., Dickenson, E.R.V., Bellona, C. "Simultaneous Ozone and Granular Activated Carbon Treatment of Micropollutants During Potable Reuse of Municipal Wastewater Effluent." *Chemosphere*, 234, 845-854, 2019.

→ Riley, S.M., Ahoor, D.C., Cath, T.Y. "Enhanced Biofiltration of O&G Produced Water Comparing Granular Activated Carbon and Nutrients." *Science of the Total Environment*, 640, 419-428, 2018.

→ Riley, S.M., Verdugo, E., Dickenson, E.R.V. "Assessment of Ozone, Biofiltration, and GAC Pilot Studies for Removal of Trace Organic Contaminants and DBP Precursors." Proceedings of the Water Quality Technology Conference (WQTC), Dallas, TX, Nov. 3 – 7, 2019.

→ Riley, S.M., Verdugo, E., Dickenson, E.R.V. "Pilot Demonstration of Ozonation, Biofiltration, and Activated Carbon Systems." Proceedings of the 34th Annual WaterReuse Symposium, San Diego, CA, Sept. 8 – 11, 2019.



Education

BS Civil Engineering,
South Dakota School of
Mines and Technology,
1995

Licenses

Professional Engineer,
Colorado

Professional Affiliations

Invited Member of the
Sage Timberline Industry
Advisory Board

Jason Rozgony, P.E.

Jason Rozgony has more than 24 years of experience in the water and wastewater industry, the majority of which has been full-time cost estimating for engineering projects and "at-risk", CMAR, design-build, and hard bid projects. He has been responsible for the development of corporate estimating standards, and has managed estimating staff across the United States. Jason has prepared discipline-level estimates and has led complete estimates for more than 250 design and fixed price construction projects requiring collaboration with design engineers, vendors, and subcontractors from preliminary through final design.

Relevant Experience

- Estimator for the Pellet Softening, Disinfection, and Facility Improvements Project, South Adams County Water and Sanitation District, Colorado, \$42 million.
- Cost estimator for the City of Westminster, Colorado, North Huron Interceptor. Jason was responsible for AACE cost estimating consistent with design level submittals for the detailed design and routing of the under-capacity sections of sewer interceptor, resulting in approximately 7,400 linear feet of new interceptor piping.
- Estimator for the Water Quality Improvements – Phase III, City of Odessa, Texas, \$154 million.
- Estimator for the Northwood Water Treatment Plant – Phase II Improvements, City of North Miami Beach, Florida, \$30 million.
- Estimator for the Wemlinger CT Chamber Project, City of Aurora, Colorado, \$19 million.
- Estimator for the City of Sunnyvale, California, Water Pollution Control Plant Secondary Treatment Facilities Design.
- Estimator for the City of Richmond, California, Veolia Wastewater Treatment Plant Critical improvement project.
- Estimator for the Avon Wastewater Treatment Facility Nutrient Upgrades, Eagle River Water and Sanitation District, Colorado, \$43 million.
- Estimator for the Blue River Wastewater Treatment Plant Biosolids Upgrades, City of Kansas City Water, Missouri, \$215 million.
- Estimator for the Treasure Island Wastewater Treatment Plant, San Francisco Public Utilities Commission, California, \$139 million.
- Estimator for the Northeast Water Purification Plant Expansion Owner's Advisor Services, City of Houston, Texas. As part of the project advisory task, Jason provided estimates for the design-build project. His primary responsibilities included reviewing GMPs from the other program consultants, McCarthy and Balfour Beatty.
- Estimator for the South Mesquite Regional Wastewater Treatment Plant Solids Handling Improvements, North Texas Municipal Water District, \$20 million.
- Estimator for the Filtration Building Improvements, City of Las Vegas, Nevada, \$20 million.
- Estimator for the City of Cape Coral, Florida, Southwest Water Reclamation Facility Biosolids Facility. Project included the construction of a Biosolids Thermal Drying Facility at the Southwest Water Reclamation Facility (WRF). Responsibilities included cost estimate development, subcontractor and vendor solicitation and evaluation, and final project cost determination.
- Lead estimator for the City of West Palm Beach, Florida, South Florida Water Management District L-8 Pump Station and Reservoir Project. Responsible for estimating the cost of the work and evaluation of subcontractor and vendor bids in preparation of the fixed price bid.
- Cost estimator for the City of Salem, Oregon, Geren Island WTP Improvements. Provided cost estimating for a \$39 million project delivered through a CM/GC method to construct a new ozone facility.

Jason Rozgony, P.E.

- Water Treatment Facility Expansion, Town of Eagle, Colorado, \$23 million. CMAR project.
- Hillcrest Reservoirs and Pump Station, Denver Water, Colorado, \$100 million. CMAR project.
- PAR 1225 South Headworks and Grease Processing Improvements, Metro Wastewater Reclamation District, Colorado, \$52 million.
- Wastewater Treatment Plant Expansion, City of Louisville, Colorado, \$27 million.
- Estimator for the Water Reclamation Facility Improvements, City of Niles, Ohio, \$51 million.
- Estimator for the Lancaster Water Reclamation Plant Expansion – Phase I, County Sanitation Districts of Los Angeles County, California, \$120 million.
- Estimator for the West Seattle and Maple Leaf Reservoirs, Seattle Public Utilities, Washington, \$66 million.
- Estimator for the Peace River Reservoir Expansion, Peace River Manasota Regional Water Supply Authority, Florida, \$45 million.
- Estimator for the Point of the Mountain Water Treatment Plant, Metropolitan Water District of Salt Lake and Sandy, Utah, \$81 million.
- Ft. Polk North and South Wastewater Treatment Plants, American Water, Florida, \$64 million. Design-Build project.
- Rio Tinto Holden Mine Reclamation and Water Treatment Facility, Washington, \$23 million. Design-Build project.
- Water Reuse Facility, Pueblo of Santa Ana, New Mexico, \$17 million. Design-Build project.
- Central Treatment Plant Upgrade and Expansion, City of Tacoma Department of Public Works, Washington, \$74 million. Design-Build project.
- Lead estimator for the Berl L. Handcox, Sr. Water Treatment Plant (formerly Water Treatment Plan No. 4), City of Austin, Texas. While with a previous firm, Jason served as the lead construction cost estimator for the \$150 million project located in located in Austin, Texas. Major elements of work included construction of clarifiers, gravity filters, sludge facilities, maintenance and administration buildings, pump stations, and clearwells. Jason collaborated with procurement staff to prepare the subcontractor scopes of work and solicitation documents, led the internal estimating effort, and completed all of the bid evaluations and GMP development. CMAR project.
- Southeast Treatment Plant Biosolids Improvements, San Francisco Public Utilities, California, \$1.1 billion. CMAR project.
- Next Level Treatment, City Spokane, Washington, \$126 million. CMAR project.
- Wastewater Pollution Control Center, City of Fremont, Ohio, \$57 million. CMAR project.
- Phase A Expansion, Upper Blackstone Water Pollution Abatement District, Massachusetts, \$23 million. CMAR project.
- Estimator for the Thomas P. Smith Water Reclamation Facility Expansion, City of Tallahassee, Florida, \$170 million. Responsibilities included managing the estimating team during the internal cost estimates preparation for the all of the work and completing subcontractor and vendor bid analysis, risk analysis, and other pricing reviews. In addition to traditional estimating, prepared Value Engineering (VE) estimates at multiple locations throughout the facility. Several of the VE concepts were actualized resulting in a significant savings to the overall project costs. CMAR project.
- Wastewater Treatment Plant Expansion, North Davis Sewer District, Utah, \$90 million. CMAR project. Hard-Bid project.
- Wastewater Treatment Facility, Trinity River Water Authority, Texas, \$196 million. Hard-Bid project.
- Lake Texoma Water Treatment Plant Expansion, City of Sherman, Texas, \$24 million. Hard-Bid project.
- Water Storage Improvements, City of Avon Lake, Ohio, \$23 million. Hard-Bid project.

STEVEN C KUEHR, PE

SENIOR CONSULTANT



Years of Experience: 40

Education

MS, Civil Engineering, Purdue University, 1985

BS, Civil Engineering, Purdue University, 1980

Professional Registration

Professional Engineer:

CO (0024369) & CA

Professional Societies

American Water Works Association

American Society of Civil Engineers

Colorado Association of Geotechnical Engineers

Rocky Mountain Water and Environment Association

Colorado Stone, Sand and Gravel Association

Mr. Kuehr is a Senior Consultant at Lithos Engineering. Mr. Kuehr specializes in geotechnical and tunnel engineering as it relates to water supply, sewerage, water resources, aggregate mining, roadway and bridge projects. He has technical expertise in tunnel engineering, foundation engineering, slope stability, expansive soils, ground modification, retaining walls, landslide evaluation and repair, embankment dam design and groundwater collection trenches and cutoffs constructed by the slurry trench method. He has 40 years of progressive engineering experience. He has performed and managed geotechnical engineering investigations for storm drain outfall projects, treatment plants, interceptor sewers, water transmission pipelines, water storage reservoirs, intake structures and pump stations.

RELEVANT PROJECTS

Griswold WPF Raw Water Structure – Phase 2, Aurora, Colorado

Principal-in-Charge and Project Manager for the new raw water vault at the Griswold Water Purification Facility. The subsurface conditions consist of eolian deposits and claystone/siltstone bedrock. Due to the presence of swelling claystone, a minimum 5 feet deep overexcavation with select fill backfill was recommended for the lower portions of the vault. There was a 72-inch raw water line adjacent to the vault. Provided geotechnical consultation including specification language and instrumentation recommendations regarding this issue. Reviewed Contractor's submittals for shoring and instrumentation.

Wemlinger WPF Sediment Drying Beds, Aurora, CO

Served as Principal-in-Charge and Project Manager. This project involved replacing the existing sediment drying beds with new, engineered sediment drying beds. The new concrete lagoons were constructed within the same footprint of the existing earthen lagoons. Provided recommendations for a permanent dewatering system which will operate as the water levels in nearby Quincy Reservoir approach the high-water level. Also provided foundation design recommendations for various structures and considerations for a tunneled waterline crossing beneath Quincy Avenue.

Colorado Springs Utilities SDS Water Treatment Plant, Colorado Springs, CO

Principal-In-Charge for Colorado Springs Utilities (CSU) Southern Delivery System's (SDS) 50 mgd water treatment plant and finished water pump station. The surface geology in the project area consists primarily of eolian soils extending to depths as

much of 60-ft below existing ground surface. The eolian soils are hydro-collapsible and exhibit a collapse potential up to 6.3 percent. Design, construction and operation measures were necessary to mitigate the potential for water to collect below grade or to pond above grade. To mitigate the collapsible soils, the design-build team implemented Deep Dynamic Compaction techniques for ground improvement.

East Cherry Creek Valley Water & Sanitation District (ECCVWSD) Northern Water Supply Project, Reverse Osmosis Treatment Plant and Booster Pump Stations, Adams, Denver and Arapahoe Counties, CO

The ECCV Northern Supply Project includes a Reverse Osmosis Treatment Plant, High Service Pump Station, and North and South Booster Pump Stations and a 35-mile transmission line. The treatment plant, which includes a water storage tank, is located in the Beebe Draw geographic area which contains thick and soft clayey soils; a condition that is unusual for the Denver area. Consolidation testing and settlement analyses indicated that approximately six inches of settlement could occur beneath the heavily loaded storage tank. Designed a temporary site surcharge to preload the tank area; this will preconsolidate the site such that settlement under the plant will be minimal. The surcharge consisted of compacted soil constructed to a height of 20-ft and included settlement monitoring platforms. Settlement monitoring indicates that settlement is occurring. The surcharge will be removed when settlement is complete so that the tank can be constructed.

Bellvue Water Treatment Plant Residuals Handling Facility, Bellvue, CO

the Firm performed subsurface geotechnical investigations and provided design recommendations for this project, which involved rehabilitation of existing sedimentation basins, construction of a thickening tank, a new pump station, and a new flow-equalization basin. Site conditions consisted of saturated fine- and coarse-grained alluvium overlying siltstone and sandstone bedrock. Mr. Kuehr served as Project Manager for this project.

Public Wholesale Water Supply Project Water Treatment Plant and Pipeline, Ellis and Russell Counties, KS

Performed geotechnical investigations and provided design recommendations for construction of a new water treatment facility in Russell County, Kansas. The proposed facility consisted of tanks and structures for administration, treatment, and pump housing, and residuals handling ponds. Mr. Kuehr evaluated the potential for collapse or dissolution within soils with high calcium carbonate content. He also provided recommendations for the residuals handling pond liners and for the on-site proposed pavements. Evaluated subsurface conditions and identified potential high groundwater and soft soils along the proposed pipeline alignment. Mr. Kuehr provided recommendations for trenchless and open cut crossings of streams and local drainages, paved county roads, highways, and existing active railroad. He also performed in-situ resistivity testing during site investigation to provide the corrosion engineer with design parameters.

87th Avenue and Wadsworth Boulevard Lift Station, Westminster, CO

Provided geotechnical engineering recommendations for a lift station, overflow storage tank and for several trenchless roadway crossings. The lift station required a deep excavation in a congested urban environment. Recommendations included over-excavation and replacement of expansive bedrock. Trenchless engineering recommendations were provided for the roadway crossings.



Christopher P. Juliana, PLS
Precision Survey & Mapping, Inc.
Colorado PLS No. 31158

Professional Experience

Precision Survey & Mapping, Inc.

7/1997 to Present

9145 E. Kenyon Ave., Suite 101

Denver, CO 80237

Position: Principal, Professional Land Surveyor

Mr. Juliana is the founder and Principal of Precision Survey & Mapping, Inc. He has a wide breadth of experience covering many types of land surveying projects. His responsibilities include oversight and management of all surveying efforts at PSM. He is experienced in the determination of boundary lines, the preparation of GPS control networks, property descriptions for the acquisition of real property and easements, ground control for aerial photogrammetry projects, ground surveys in support of civil engineering design projects including field cross-sections, utility and improvement locations. He is responsible for developing, training and implementing standards and processes for PSM's LiDAR Surveying Methodology.

Key points include:

- Responsible for Business Development
- Estimating and Bidding of Projects
- QA/QC
- Project Oversight and Project Management
- Survey Office Technician
- Field Crew Chief

Work History

- 10 years with other firms

Education

- Mercer County Community College, Trenton, New Jersey
A.A.S., Concentration in Civil Engineering/Surveying

Qualifications

- Registered Professional Land Surveyor, State of Colorado-PLS No. 31158
- 31 years of experience in the Land Surveying Profession.

Professional Affiliations

- Member Professional Land Surveyors of Colorado-Central Chapter

Additional Proficiencies

- Proficient with Mobile/UAV LiDAR Data Collection and Post Processing

Commercial Drone Pilot

- FAA Part 107 Drone Pilot Certification

**GREGORY SHORT, AIA, LEED AP, PMP**

PRINCIPAL

Recent Design
Experience **WATER****City of Greeley, Boyd Lake WTP Process Improvements**

New and expanded treatment facilities at the existing plant including a new chemical building storing hazardous chemicals, retrofitting existing exterior chemical tanks to be enclosed, and repurposing portions of an existing wet well to contain ozone operations. New structures are constructed of pre-engineered metal buildings for economy and efficiency.

South Adams County Water and Sanitation District, Pellet Softening Water Treatment Plant

New treatment and support spaces at the existing Klein Water Treatment Plant in Commerce City, including process facilities, control room, office space and training room. Pellet reactors and filters, designed to provide softened water to the district's customers, along with electrical and mechanical rooms, are housed in a 23,000 SF process building. Adjacent to this is the 3,500 SF administrative area. A separate building contains the hazardous chemicals. Site layout includes vehicle circulation, parking, transformers and generator.

City of Westminster, Big Dry Creek WWTP Dewatering Facility

New dewatering facility at the existing Big Dry Creek treatment plant. Two story building contains centrifuges and truck bays for the processing and removal of solids via semi-truck. Additional space is provided for chemical storage. Another feature of the facility is an elevator for ease of personnel movement. A control area, small open office area, and lockers are also provided for the staff.

Metro Wastewater Reclamation District, Biosolids Dewatering and Storage Facility

A large new treatment facility at the Robert W. Hite plant, this four-story dewatering and storage building includes 12 centrifuges and four hoppers feeding into semi-trucks in one of four truck bays. Stair towers and a freight elevator provide access throughout the building. A mezzanine level provides access to the top of the hoppers. In addition to the process areas, several electrical and mechanical rooms are interspersed through the building. A control room is located at the top floor and, due to the proximity to gas and oil production, is designed as a shelter-in-place room. Large expanses of translucent panels on either end of the hoppers provide diffuse natural daylight to enhance staff performance and safety.

City of Black Hawk, Colorado, Dory Hill Water Treatment Plant

New water treatment facilities for a historic mining town in the Colorado mountains, including new and upgraded structures for process, maintenance, administration and staff support. This challenging project made use of existing concrete water basins as the foundation for a new superstructure, containing treatment equipment and office areas. Architecture of the buildings emulates historic mining structures found nearby.

Colorado Springs Utilities, Southern Delivery System Raw Water Pump Stations

Responsible for 30% Design through Construction Administration of Bradley Pump Station, Williams Creek Pump Station, and Juniper Pump Station. As components of the Southern Delivery System the Raw Water Pump Stations move water 1,500 feet in elevation from Pueblo Dam to El Paso County. Major materials include brick veneer, metal wall panels, and translucent wall panels.

City of Boulder, 75th Street Wastewater Treatment Plant Upgrades

New and expanded treatment and support facilities at the existing plant included office space and lab. The design of these new structures matches the original plant's architectural vocabulary.

City of Longmont, Nelson Flanders Water Treatment Plant

Multi-structure plant located on a historic rural farm site adjacent to neighboring park and farm land, with wildlife corridors, public access to trail heads and historic structures. One of the goals of the design of the plant is to use siting, forms and materials to integrate the plant into the landscape. The Plant includes structures to house filters, chemical storage, pump stations, maintenance bays and administration and staff support facilities.

Arapahoe County Water and Wastewater Authority, Lone Tree Creek Water Reuse Facility

Design of five new structures at the existing plant's site. Design of the expansion unifies and upgrades the



plant's architecture and better integrates it into the developed residential and commercial neighborhood. New structures include Headworks, Blower, RAS, AWT, and Dewatering Buildings.

Denver Water, Williams Fork Reservoir Small Hydro/Outlet Works Building

Design of an outlet works structure addition housing a turbine for power generation. New construction blends with the historic structure while accommodating current operational needs, such as a bridge crane, monorail and vehicle bay, and the function of the turbine and associated piping. Design of a maintenance and office facility for the site

Metro Wastewater Reclamation District, Northern Treatment Plant Design Definition

As the architect on the Owner's Advisor team, headed by Carollo Engineers and in cooperation with process and civil engineers and landscape architects, we developed drawings and renderings to a 30% level in order to provide design definition for the project. Spearheading the programming effort on the Visitors' Center and Facilities Support Building, we conducting workshops and coordinated with staff to establish schematic design requirements. One of the design goals for the plant was to use building locations, grading and materials to integrate the plant into the landscape, working with existing topography and vegetation, rather than imposing the facilities on the site.

PUBLIC

Bureau of Land Management Fire Facilities

Site analysis, master planning and architectural design for several fire and hotshot facilities throughout the Western states. Campus designs include living quarters, maintenance and operations buildings, staff support and recreation facilities. Buildings designed using LEED guidelines.

Bureau of Land Management, Kanab Office Building

Overall design combines numerous functions from public facilities to office, laboratory and warehouse uses, as well as pedestrian and vehicular circulation, storage and other site amenities such as parking, landscaping and recreational areas. The public and administrative components are located in the 16,000 SF office building while the laboratory and warehouse components have been combined into the 5,000 SF warehouse building.

Professional
Experience

Short and Brennan Architects, Principal, Project Manager, Designer

As Principal, Greg's responsibilities include project management and design, client coordination, project planning and budget analysis, selection of project team, technical information and code conformance, and other necessary tasks depending upon each individual project.

Licensed Architect: States of Colorado, Arizona, NCARB Certificate

Years at Short and Brennan: 19

Years of Professional Experience: 20

Education: Master of Architecture, University of Wisconsin-Milwaukee

Awards

Gold Hard Hat Award 2009 - SILVER, Outstanding Higher Education / Research Project: Sun Microsystems Data Center and Laboratory Conversion

Design-Build Institute of America - 2006 National Design-Build Awards - Best Project, Water Over \$15 M: Nelson-Flanders Water Treatment Plant, Longmont, Colorado

Professional
Organizations

American Institute of Architects, Colorado Chapter

LEED Accredited Professional

Project Management Institute



390 Interlocken Cresent, Suite 800 | Broomfield, CO 80021

carollo.com

Fee Proposal

Carollo’s fee for this project is based on the proposed ozone and biofiltration approach (option 3). We have initially assumed approximately 250 drawings would be required for this project and have included 30%, 60%, and 90% design milestones. We are open to negotiating the fee based on the Town’s preference for how to progress the design and whether this project is ultimately delivered as Design Bid Build or CMAR. We have also included a series of optional tasks for your consideration.

Item #12.

Town of Johnstown | Johnstown WTP Expansion Carollo Engineers, Inc. Fee Estimate | 2/05/2020

	Team Member	Senior Specialist	Senior Professional	Lead Project Professional	Project Professional	Professional	Assistant Professional II	Assistant Professional I	Senior Designer	Senior Technician	Technician	Doc Processing	Clerical	Carollo Hours	Carollo Labor Cost	Sub Consultants	Carollo ODCs	Total Engineering Cost
Task	Description	\$275	\$250	\$225	\$200	\$175	\$160	\$140	\$180	\$160	\$135	\$120	\$100					
1	Task 1 - Project Management																	
1.1	Project Coordination	20	200											220	\$55,500	\$-	\$-	\$55,500
1.2	Progress Meetings	20	60	20	20	40	40	40				10		250	\$49,200	\$-	\$750	\$49,950
	Subtotal Hours Task 1	40	260	20	20	40	40	40	0	0	0	10	0	470				
	Subtotal Task 1	\$11,000	\$65,000	\$4,500	\$4,000	\$7,000	\$6,400	\$5,600	\$-	\$-	\$-	\$1,200	\$-	470	\$104,700	\$-	\$750	\$105,450
2	Task 2 - Preliminary Process Selection and Design																	
2.1	Process Alternatives Evaluation	20	80		20	40	40	80		8				288	\$55,380	\$-	\$250	\$55,630
2.2	Survey and Geotechnical Engineering		4		8		16			8	8			44	\$7,520	\$32,670	\$100	\$40,290
2.3	Preliminary Design	10	40	40	60	80	80	120	40	100	200	20	20	810	\$131,950	\$-	\$100	\$132,050
2.4	Preliminary QC	10	40	40										90	\$21,750	\$-	\$100	\$21,850
2.5	Conceptual Cost Estimate	4	80				10							94	\$22,700	\$-	\$100	\$22,800
	Subtotal Hours Task 2	44	244	80	88	120	146	200	40	116	208	20	20	1326				
	Subtotal Task 2	\$12,100	\$61,000	\$18,000	\$17,600	\$21,000	\$23,360	\$28,000	\$7,200	\$18,560	\$28,080	\$2,400	\$2,000	1326	\$239,300	\$32,670	\$450	\$227,970
3	Task 3 - Detailed Design (60% Drawings and Specifications)																	
3.1	Site Civil and Yard Piping				10		40		20		40	10		120	\$18,600	\$-	\$-	\$18,600
3.2	Structural		20				160		20	60	80	10		350	\$55,800	\$-	\$-	\$55,800
3.3	Architecture							40				4		44	\$6,080	\$41,580	\$-	\$47,660
3.4	Process Mechanical		20		80			180	40	60	200	10		590	\$91,200	\$-	\$-	\$91,200
3.5	Building Mechanical			20				100	20	60	100	10		310	\$46,400	\$-	\$-	\$46,400
3.6	Electrical					160			20	140	100	10		430	\$68,700	\$-	\$-	\$68,700
3.7	I&C					200		40	20	120	160	10		550	\$86,200	\$-	\$-	\$86,200
3.8	60% QC	12	60	60										132	\$31,800	\$-	\$-	\$31,800
3.9	60% Cost Estimate	4	30			4		4						42	\$9,860	\$-	\$-	\$9,860
	Subtotal Hours Task 3	16	130	80	90	364	200	364	140	440	680	64	0	2568				
	Subtotal Task 3	\$4,400	\$32,500	\$18,000	\$18,000	\$63,700	\$32,000	\$50,960	\$25,200	\$70,400	\$91,800	\$7,680	\$-	2568	\$414,640	\$41,580	\$-	\$456,220
4	Task 4 - Final Design (90% Drawings and Specifications)																	
4.1	Site Civil and Yard Piping				60		20		20	60	80	8		248	\$40,160	\$-	\$-	\$40,160
4.2	Structural		20				100		20	80	80	8		308	\$49,160	\$-	\$-	\$49,160
4.3	Architecture						40					4		44	\$6,880	\$20,790	\$-	\$27,670
4.4	Process Mechanical	4	40		80			140	60	100	120	8		552	\$90,660	\$-	\$-	\$90,660
4.5	Building Mechanical			40				100		60	80	8		288	\$44,360	\$-	\$-	\$44,360
4.6	Electrical					200			20	100	200	8		528	\$82,560	\$-	\$-	\$82,560
4.7	I&C					100		40	20	200	100	8		468	\$73,160	\$-	\$-	\$73,160
4.8	90% QC	4	60	60	40									164	\$37,600	\$-	\$-	\$37,600
4.9	90% Cost Estimate		24		4	4		6						38	\$8,340	\$-	\$-	\$8,340
	Subtotal Hours Task 4	8	144	100	184	304	160	286	140	600	660	52	0	2638				
	Subtotal Task 4	\$2,200	\$36,000	\$22,500	\$36,800	\$53,200	\$25,600	\$40,040	\$25,200	\$96,000	\$89,100	\$6,240	\$-	2638	\$432,880	\$20,790	\$-	\$453,670
5	Task 5 - Issued For Construction																	
5.1	IFC Drawings and Specifications	4	20		40	40	40	80	40	40	140	40	20	504	\$78,000	\$6,930	\$250	\$85,180
	Subtotal Hours Task 5	4	20	0	40	40	40	80	40	40	140	40	20	504				
	Subtotal Task 5	\$1,100	\$5,000	\$-	\$8,000	\$7,000	\$6,400	\$11,200	\$7,200	\$6,400	\$18,900	\$4,800	\$2,000	504	\$78,000	\$6,930	\$250	\$85,180
6	Task 6 - Permitting																	
6.1	Permitting	8	30		40	40		60		10		4	0	192	\$35,180	\$-	\$-	\$35,180
	Subtotal Hours Task 6	8	30	0	40	40	0	60	0	10	0	4	0	192				
	Subtotal Task 6	\$2,200	\$7,500	\$-	\$8,000	\$7,000	\$-	\$8,400	\$-	\$1,600	\$-	\$480	\$-	192	\$35,180	\$-	\$-	\$35,180
	Total Base Project Hours	120	828	280	462	908	586	1,030	360	1,206	1,688	190	40	7,698				
	Total Base Direct Labor Dollars	\$33,000	\$207,000	\$63,000	\$92,400	\$158,900	\$93,760	\$144,200	\$64,800	\$192,960	\$227,880	\$22,800	\$4,000		\$1,304,700	\$101,970	\$1,450	\$1,363,670
	Optional Tasks																	
	Electrical System Study		8			80	60	12			20		10	190	\$30,980	\$-	\$-	\$30,980
	Raw Water Pump Station and Pipeline Alternatives Evaluation		80		80					40				200	\$42,400	\$-	\$-	\$42,400
	CMAR Selection Support	12	20				12	12						56	\$11,900	\$-	\$-	\$11,900
	Ozone Bench Testing		8					12						20	\$3,680	\$-	\$25,000	\$28,680

Johnstown, Colorado Water Treatment Plant Expansion Design

February 5, 2021





February 5, 2021

Mr. Marco Carani, Director of Public Works
Town of Johnstown
450 South Parish
Johnstown, CO 80534

www.jvajva.com

RE: Proposal for the Professional Engineering Services for the Expansion of the Johnstown Water Treatment Plant

Dear Mr. Carani and Selection Committee Members:

JVA, Incorporated (JVA) appreciates the opportunity to provide our response to the Town of Johnstown (Town) Request for Proposal for the Expansion Design of the Johnstown Water Treatment Plant (JWTP) project. JVA has reviewed the RFP, addendums, and attended the preproposal meeting and site walk for this project. We have assembled a team of qualified and experienced engineers to assist the Town in meeting its goals and objectives for the expansion to 10 million gallons per day (MGD) firm capacity. JVA's key staff committed to the success of this project are primarily based in our Fort Collins and Denver offices. To provide the Town the most qualified services, JVA has teamed with Browns Hill Electrical & Controls, Inc. (BHEC) for the design expansion. Charles Page of BHEC is on the project team and is currently working with the Town on upgrading the SCADA system and very familiar with the JWTP electrical and control systems. In addition, JVA has teamed with Northern Colorado local firms for geotechnical engineering (Lithos) and survey (King Surveyors) who have experience working with both JVA and the Town.

Since this project will be accomplished within the tight confines of the existing treatment facility and there is much to know about site constraints and constructability issues, we believe this project is an excellent example of how the Construction Manager at Risk (CMAR) delivery process will benefit the Town. Having the contractor involved in the design from the 30 percent level through final design will help to confirm the assumptions we have made and give us all an accurate price confirmation including a Guaranteed Maximum Price (GMP) before the design is completed. This delivery method removes the bid day surprise, and develops a strong team of owner, engineer and contractor that will carry into the construction phase of the project. JVA is considered experts in the CMAR delivery method, and we are proud of the successes we have had in delivering these projects for many of our clients on similar water treatment plant expansions. Our expertise not only lies in our ability to provide solutions and work as a team, but in our skill to foresee and mitigate potential conflicts and challenges. The numerous CMAR projects we have completed to date has given us the experience and understanding of how to best implement this project delivery method to meet the Town's objectives.

The JVA team is very qualified for this project based on our past work experience with design upgrades and expansion to existing WTP filtration processes including mixed media and membranes (pressure and submerged). Over the last 5 years JVA has designed and upgraded several WTPs that required filter expansion / rehabilitation or conversion to membrane filtration throughout Colorado including projects for North Table Mountain W&SD, Town of Berthoud, Town of Crested Butte, Mount Crested Butte W&SD, City of Grand Junction, and Woodmoor W&SD to name a few and as described in our proposal to follow. John McGee will be the Principal-in-Charge for the project and located in the Fort Collins office within a 25-minute drive to Johnstown. Andrew Sparn will be the project manager who is just coming off the North Table Mountain Filter Expansion project and will be dedicated to your project. Melissa Rhodes will lead the process team for JWTP expansion and is very experienced with both mixed media and membrane filtration design. She will be assisted by Leah Opitz and Ryan



Wienphal as project and design engineers. Leah was project engineer for the \$20.3 million Mt. Crested Butte WTP which partly consisted of abandoning a mixed media direct filtration system with ultrafiltration membranes and brings her experience and expertise to your project. recently joined JVA as a design engineer and was formerly employed with Ramey Environmental Compliance as a Class A licensed Operator for water treatment operations.

JVA has a very structured and detailed QA/ QC program to ensure that all deliverables are reviewed prior to submitting to the Town. Josh McGibbon will lead the QA/QC efforts for the project. Josh has been principal-in-charge or Technical Lead for the WTP filter expansion and rehabilitation projects referenced in our proposal. Adam Teunissen will be the lead structural engineer on the project who specializes in water and wastewater structural tank designs.

In addition to our design qualifications, JVA has extensive experience and skills to effectively coordinate the planning and permitting efforts with the Colorado Department of Public Health and Environment (CDPHE). Our staff has outstanding relationships with CDPHE personnel. JVA also has extensive experience and success in assisting municipalities with funding assistance, including both SRF and DOLA grants and loans.

Please review the attached proposal document and call any of the numerous references cited, and feel free to call me with any questions. In summary, we believe our team is uniquely qualified for completing the JWTP Expansion project to the Town's complete satisfaction. We are a local firm and are looking to build a long-term relationship with Johnstown. We take pride in our commitment to quality work, proactive communication, and highest levels of service and it would be our pleasure to work closely with Town staff for years to come.

Sincerely,
JVA, INCORPORATED

By:

A handwritten signature in black ink, appearing to read 'John P. McGee', is written over a horizontal line. Below the line, the text 'John P. McGee, P.E.' and 'Principal' are printed.

John P. McGee, P.E.
Principal

Attachments



Introduction

JVA, Inc. (JVA) appreciates the opportunity to present our team and qualifications for the Town of Johnstown Water Treatment Plant Expansion project. This proposal is based on the requirements outlined in the RFP issued on December 30, 2020. Our project team members have extensive experience in master planning, particularly with Colorado communities similar to Johnstown. We have a strong presence in the region, working on critical wastewater and water projects for the Towns of Berthoud, Mead, Platteville and the City of Greeley. We look forward to assisting the Town in expanding your water treatment plant.

Section 1: Identification of Proposer



JVA is a Civil, Environmental, and Structural consulting engineering firm headquartered in nearby Boulder, Colorado, with Front Range offices in Fort Collins and Denver, and

mountain offices in Winter Park and Glenwood Springs. JVA celebrates our 65th anniversary of engineering excellence, serving municipalities, special districts, and owners throughout Colorado. Our current staff size consists of 130 experienced engineers, designers, and administrative staff. We are committed to excellence in our service to all clients. As consulting engineers, we are dedicated to superior design, and understand the need to communicate, work as a team, and complete projects on time. JVA provides its clients with creative thinking, design sensitivity, and cost-effective engineering. We

Contact:

John P. McGee, P.E.
JVA, Incorporated
213 Linden Street, Suite 200
Fort Collins, CO 80524
Tel: 303-565-4958
Email: jmcgee@jvajva.com
Web: www.jvajva.com

recognize that true service to the client is more than quality engineering. Efficient use of the Town's resources, meeting project deadlines, and being sensitive to your needs are our primary goals.

This project will primarily be run out of our Fort Collins office, with John McGee as the Principal-in-Charge. Our team and subconsultant information can be found in Section 4 of our Proposal.

Section 2: Project Overview and Approach

Project Approach

JVA attended the pre-proposal meeting, attended the Johnstown Water Treatment Plant (JWTP) walk through and have read the RFP and supporting documents to fully understand the goals and objectives for the JWTP expansion. The JWTP is rated for a firm capacity of 5 MGD limited by filtration with one filter out of service. The original filter plant was constructed in 1966 and has been maintained by the Town with improvements over the 50 years. The most significant improvement was the addition of a 10 MGD Dissolved Air Flotation (DAF) system for pretreatment that replaced outdoor aged flocculator / clarifiers that remain abandoned today. Based on recent peak demands, the JWTP is not capable of meeting the Town's potable water needs

without use of the emergency interconnects from Greeley, Little Thompson Water District (LTWD) and Central Weld County Water District (CWCWD). The Town completed a raw water master plan in 2005 that describes the Town's water rights portfolio which includes 4,757 acre-feet of Consolidated Home Supply Ditch and Reservoir Company and 360 acre-feet of Consolidated Hillsborough Ditch Company for a total of 5,117 acre-feet. The Town also owns some Colorado Big Thompson (CBT) shares that can be delivered upon request to the Town through the Home Supply system. The Town also has a substantial portfolio of water rights for non-potable irrigation including numerous shares in Farmers, Hill and Brush, Greeley-Loveland, and Highland Ditch companies. The Town's municipal and irrigation water rights portfolio are adequate to meet the current and 10-year demands for domestic and irrigation uses. The Town has been proactive with residential and commercial developments encouraging non-potable irrigation as well as water conservation practices to reduce or flatten the curve of peak day demands at the JWTP.

The primary raw water source for the JWTP is the Lone Tree Reservoir (LTR) located approximately 10 miles east of the plant. The secondary raw water source for the JWTP is the Johnstown Reservoir located approximately $\frac{3}{4}$ mile east of the plant. Both raw water sources are pumped to the JWTP. Back in 2008, the Town constructed a new raw water pump station at the Johnstown Reservoir with a net pumping capacity of 6.7 MGD. The LTR pump station will not meet this next phased expansion of the JWTP and will need to be expanded to meet future demands. The existing 16-inch LTR raw water transmission line will need to be upgraded or another transmission line installed parallel to the existing 16-inch to meet future JWTP capacity needs. Over the last several years, the Town has implemented projects at both raw water pump stations and the JWTP to improve SCADA / HMI automation and communications of delivering raw water to the JWTP more reliably and less manual operation intervention. On-going improvements at these sites have also included replacing aged PLCs, raw water pump

VFDs, DAF saturator / compressor, and equipment repair and replacement (i.e. repair of LTR powered activated carbon (PAC) system, etc). On the finished water side, the Town has made numerous improvements to the Town's distribution system over recent years including upsizing, replacement and rehabilitation of watermain, installation of PRVs, water storage and booster station upgrades / expansions. The Town's intent is become less reliant on the emergency interconnects with Greeley, LTWD and CWCWD and continue to develop a more robust and reliable water distribution system throughout the year. Johnstown budget and prioritizes capital projects for the water distribution system every year for meeting current and future needs.

Based on JVA's understanding, review of the RFP documents (including addendums), and discussions with operation staff during the JWTP walk through, JVA has put together a task-by-task approach for this project. Each task outlined below will include a technical memorandum that will serve as the basis of design for the JWTP expansion.

- *Task 1* - 5 MGD to 10 / 12.4 MGD (one filter off-line / all in service) expansion of the existing JWTP with addition of a matching mixed-media filtration system or replacement of the mixed-media filtration system with an ultrafiltration membrane system.
- *Task 2* - Evaluate and expand (if necessary) the existing Clearwell to meet CT and compliance with DOVE (Policy 5)
- *Task 3* - Evaluate and expand (if necessary) the Finished Water Pumping system to meet new pumping demands
- *Task 4* - Design of a new building (if necessary) to house either the additional mixed media filters or membranes
- *Task 5* - HVAC and plumbing design for the existing filter building and any new buildings added for the expansion
- *Task 6* - Coordination with the Town's on-call system integrator (Browns Hill Engineering and Controls) for electrical, SCADA and controls

- *Task 7* - Design of a new raw water pipeline integrated with the existing LT Raw Water Pump Station from LT Reservoir to the JWTP
- *Task 8* - The JWTP Expansion shall include the design of safety devices required for staff to operate and maintain the treatment processes effectively and reliably
- *Task 9* – Value Added Ideas

Task 1 – Filter Expansion

JVA has developed three- (3) alternatives for expanding or replacing the JWTP mixed media filtration system. The three alternatives include:

- ✓ Alternative 1: Expand the existing filtration process / building
- ✓ Alternative 2: Replace existing filtration process with Membrane Gravity Filters (MGF)
- ✓ Alternative 3: Replace existing filtration process with Conventional Submerged Membranes

Alternative 1: Expand Existing Filtration Process:

This alternative will include expanding the existing filter building to the west to allow extension of the filter piping gallery and addition of the new filter boxes. A schematic of the filter building expansion is shown on Figure 1. The new filters will be the exact same size of the existing filters (12' x 18') to double the capacity of the existing plant. Some of the filter piping (i.e. filter effluent common header piping) will need to be expanded to handle the increased flow from each train. It is proposed to add the following improvements to the existing filters and to include the same for the new filters:

- Filter-to-waste piping and discharge
- Replace surface wash with air scour
- New Leopold underdrains and media
- PLC / SCADA / HMI integration for automated control

The challenges faced with this option will be maintaining treatment operations during construction of the new filters and rehabilitation of the existing. Sequencing construction with system demands will be a major challenge with this option. The Town has the option of utilizing their interconnects with Greeley, LTWD and NWCWD however, this is not a guaranteed reliance since the supply interconnect entities will serve their needs first prior to supply water to Johnstown. Historically the peak summer demand decline by late September / early October allowing an opportune time to begin the rehabilitation of the existing filters. The new filter building addition can be constructed throughout the year while the existing filters remain on-line to meet system demands. Once the new filters are constructed there will be a down time for each train when the new filter piping (backwash, filter effluent, drain, filter-to-waste) is integrated and upsized as necessary with the existing piping. A detailed structural analysis will be conducted of the southwest filter piping gallery wall to determine rehabilitation for cutting out a portion of the wall to extend the gallery and expose the influent piping from the DAF. Construction Manager at Risk (CMAR) delivery for expanding the existing filter process should be considered by the Town. Projects that involve major rehabilitation of existing water retaining structures, treatment processes, piping, and electrical / controls that require detailed scheduling, process shutdowns, operations coordination and contractor insight invites consideration of CMAR delivery.



Figure 1: Alt #1 - Expand Existing Filter 1

Alternative 2: Replace Existing Filtration Process with MGFs

JVA reached out to ultrafiltration membrane manufacturers to determine what systems that would be most adaptable to the existing infrastructure for minimizing additional tankage and buildings. One such system is Membrane Gravity Filters (MGFs) that function like gravity flow mixed media filters. MGFs can be installed inside the existing filter boxes with modifications to the influent, backwash, drain, and filter effluent piping. Addition of air scour would be required for backwash and cleaning the membranes. The compressors for air scour could be located on the main process floor or down in the pipe gallery. The existing backwash supply could be integrated with the MGFs with minor piping modifications. Pumps would be necessary for wasting the backwash and to drain down the MGF boxes. Shown on Figure 2 is a schematic of the MGFs retrofitted into the four existing filter boxes. A total of four converted MGF trains each with four membrane chains would be capable of producing 3.33 MGD per train for a total of 13.33 MGD with all trains operating and 10 MGD firm capacity with one train out of service. During construction, one side of the existing filters can be operated while the other side is gutted (underdrains, media, gullet, and backwash troughs removed) and retrofitted with the MGFs. The influent piping from the DAF will have to be modified for distribution to each filter train as well as the permeate and backwash supply piping. Again, a CMAR delivery for this project is highly recommended due to the down time and operation coordination required between the contractor, Town, and engineer. Like Alternative 1, the filter rehabilitation work would need to be conducted during the non-peak season (October to May) to minimize the use of interconnects.



Figure 2: Alt #2 – Convert Existing Filters to MGFs

Alternative 3: Construct New Membrane Filtration Facility – Abandoned Existing Filter Plant

This alternative would compare GSM (Alternative 2) retrofit with skid mounted membrane filtration (MF) facility. It is proposed that the new MF facility be constructed just west of the existing DAF building. The advantage of this alternative is that the existing filtration process can maintain treatment operations with very limited shutdowns and reliance on emergency interconnects during construction of the new MF facility. The existing filter building could be retrofitted for additional chlorine contact and / or finished water pumping improvements. The pipeline that exists between the DAF building and Filter building could be repurposed for conveyance between the two structures. The MF treatment process is a proven technology with many systems throughout Colorado. JVA has in-depth experience with MF design and retrofits of existing filter plants. The MF are slab skid mounted and arranged in multiple arrays and trains with dedicated influent pumps, clean-in-place (CIP), air scour and backwash processes. In contrast to GMFs, MFs required influent pumping to the membranes skids to pressurize the membranes for the filtration process. The primary disadvantages of this alternative compared to Alternatives 1 and 2 is the required pumping to feed the membranes and chemicals and storage needed for CIP.

Included in Appendix B is an example drawing set for installing Gravity Membrane Filters (GMFs) within the mixed media filter basins. Included in Appendix C are Site Drawings for Alternatives 1, 2 and 3



Figure 3: Alt #3 - Construct New Membrane Filtration System

Task 1 Deliverable

JVA will prepare a technical memorandum (memo) for evaluating Alternatives 1 through 3 and based on selected criterion prepare a recommendation for preliminary design of the selected alternative. The memo will include a feasibility analysis, cost evaluation, design criteria and concept design. This memo will serve as a basis for subsequent design tasks. *To avoid redundancy of this approach section, a technical memo will be prepared for all the tasks below to set the design parameters, criteria, and concepts for preliminary and final design phases.*

Task 2 - Evaluate Existing Clearwell and Chlorine Contact

For Alternative 1, the existing clearwell will need to be expanded for additional chlorine contact time (CT) to achieve adequate disinfection credit for viruses and giardia inactivation. For Alternatives 2 and 3, the existing clearwell may have enough volume for CT because membrane filtration has a pore size opening that prevents giardia from passing through which allows 3 log removal credit, thereby only needing to meet CT for virus inactivation. Existing filtered water quality data would have to be trended for pH, temperature, and chlorine residual to determine the required volume required to achieve adequate CT for virus inactivation at the new peak day design flow. It should be noted that assigned baffling factor will be an important design consideration for CT. JVA will discuss with the Town whether a Disinfection

Outreach and Verification Effort (DOVE) was conducted by CDPHE for the JWTP. If a DOVE was conducted, a baffling factor would have been assigned. If a DOVE was not conducted, JVA would calculate the baffling factor to determine CT required for giardia and virus inactivation. For any added clearwell volume, the tank would be baffled to achieve a minimum baffling factor of 0.7.

Task 3 - Evaluate Finished Water Pumping

The existing finished water pumping system consists of three vertical turbine pumps that pump finished water to the Town distribution system.

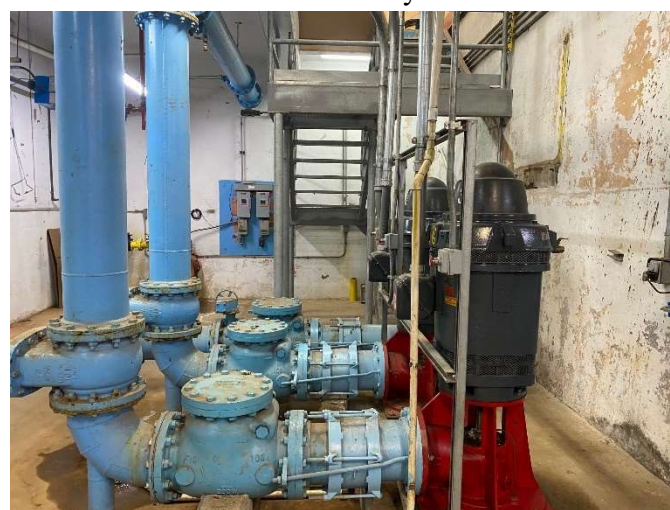


Photo: JWTP Finished Water Pumps

JVA will evaluate and prepare a condition assessment of the finished water pump system to determine what improvements and expansion would be required for meeting the new peak day demand of 12.4 MGD. If it is determined in Task 2 that more CT is required, it is proposed that additional clearwell volume is added, the new tankage would be connected to the existing pump station.

Task 4 - New Filter Building Addition (if necessary)

For Filtration Alternatives #1 and #3, would require a new building to house the new mixed media filters (Alt #1) and new MF facility (Alt #3). For Alternative #2, a new building for housing additional filters would not be required since there is enough filter train volume for GMF to achieve a peak day flow of 12.4 MGD (10 MGD firm). If a new filter building is

added, the building would match the existing material (CMU) and architectural style of the existing Filter and DAF buildings.



Photo: JWTP Existing Filter Pipe Gallery

JVA has architectural and structural team members in house that will design the filter building addition if Alternative #1 or #3 is selected for the filter expansion.

Task 5 - HVAC and Plumbing for Existing and New Filter Addition

The existing Filter building was constructed in 1966 and has aged HVAC and plumbing equipment that will need to be upgraded to improve heating, cooling and ventilation efficiency and reduce corrosion of piping and structures and extend the life of the Town's assets. For a new filter building addition, the HVAC and plumbing design will be prepared in accordance with the Town's adopted IBC code and NFPA code related to the selected processes and functionality of the building.

Task 6 – Electrical, Controls and SCADA Integration

JVA will subcontract with Browns Hill Electrical and Controls (BHEC) to conduct a condition assessment of the existing electrical infrastructure and evaluate the electrical upgrades / improvements for each the filtration alternatives and associated process improvements. JVA will also work with BHEC for integrating controls and SCADA with the recommended filtration alternative. The Town is

currently working with Charles Page with BHEC for on-going SCADA integration and improvements for both the water and wastewater facilities.

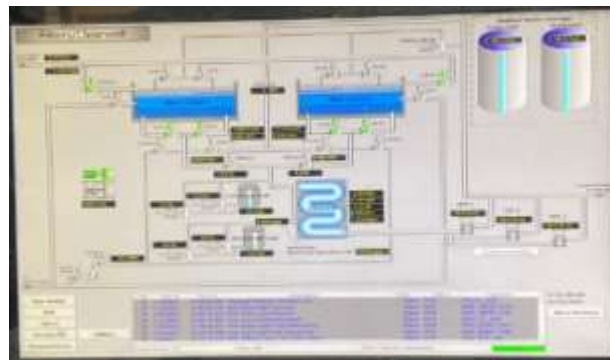


Photo: JWTP Filter / Clearwell SCADA Screen

It is likely that electrical improvements will be required for the existing Filter building along with the new buildings and expansion. The extent of electrical upgrades will depend on the filter expansion alternative selected.

Task 7 - Design of a New Raw Water Pipeline from Lone Tree

Based on Addendum #1 of the RFP, the Town decided to negotiate with the selected consultant the design of the new LTR raw water pipeline and associated improvements to the LTR pumping station. In preparation of the LTR pipeline design, JVA has teamed with Lithos and King Surveyor to conduct the survey, geotechnical testing and report, easement preparation and design of the trenchless crossings. Based on a preliminary alignment provided by Johnstown, we have identified at least five necessary tunnels (locations where third parties will not allow for open-cut construction) including Highway 287, Berthoud Parkway, I-25, State Highway 60, and the BNSF Railroad. Lithos has significant experience in designing geotechnical and tunnel specific components of pipeline projects.

To help manage construction risk for the proposed pipeline project, it is important Johnstown develop appropriate requirements and consider development of a Geotechnical Baseline Report (GBR). GBRs identify ground conditions to be encountered during tunnel construction, specify allowable tunnel means and methods for individual tunneled crossings, and

provide considerations for shaft and tunnel construction. A GBR is a unique geotechnical document that is directly incorporated into the contract for a project. We have extensive experience and understanding in available tunnel means and methods and how to couple these means and methods with ground conditions as identified through a prudent subsurface investigation. In addition, we have produced numerous multi-crossing GBRs for various project types. Appropriate specifications and tunnel detail drawings are an important consideration; our experience with tunnel construction have aided in the development of robust tunnel specifications and drawings.

A recent project, currently in design, where tunnel specific design documents were developed is the South Tank and Waterline Loop for Johnstown. This project will include roughly 10 tunneled crossings of county roads, irrigation ditches, the Little Thompson River, and railroad tracks. The project is currently in the final stages of design with anticipated bid in mid-2021. The Town's understanding of the critical nature of tunnel crossings and the need for specific construction documents addressing these components of construction will lead to the selection of qualified contractor(s) and appropriate risk allocation for the project team.

Once the scope for the LTR pipeline design is negotiated with the Town, the JVA team will prepare the LTR plan and profile drawings and specifications including details for open cut and trenchless pipeline design. A minimum of Level B Subsurface Utility Engineering (SUE) will be prepared for the entire alignment of the LTR pipeline design with Level A SUE for each conflicting utility crossing or interference. Level A SUE includes potholing to confirm both horizontal and vertical alignment of the conflicting utility.

Task 8 – Code Compliance for Reliable and Safe Operations

The filter expansion design will include compliance with all applicable codes, including the latest OSHA, NFPA, NEC and IBC requirements to provide safe

and reliable environment for the JWTP operation staff. Safety is of number one importance for treatment operations since operators are dealing with corrosive and hazardous chemicals, dust, and confined spaces. Proper ventilation and lighting in work areas is essential for safe access and to maintain and operate equipment or change out chemicals. All areas that contain chemicals will have spill protection and tempered emergency eye wash stations.

Task 9 – Value Added Ideas

In addition to the eight tasks described above, JVA has come up with several ideas the Town may want to consider for this project.

Repurposing of the Abandoned Clarifiers - for DAF solids storage and thickening or backwash recycling and / or for Powered Activated Carbon (PAC) or Ozone contact basins to mitigate taste and odor compounds in the raw water. The JVA team has a



significant amount of experience with both ozone and PAC treatment for reducing taste and odor in drinking water. There have been significant advances in on-site generation of ozone for use as an oxidant and for controlling taste and odor in raw water.

Converting existing Mixed Media Filters to GMFs - As presented in Task 1, converting the existing mixed media filters to GMFs would save the Town a significant amount of money avoiding or delaying the construction of additional filter trains and a building while still meeting the Town's objective for producing 12.4 MGD filtration capacity (10 MGD firm).

The Construction Manager at Risk (CMAR) approach - for project delivery has become much more popular over the last several years for the construction of water and wastewater treatment facilities. JVA recommends this approach for expansion of the LPWWTP. This approach includes a competitive process for selecting the CMAR which includes an RFP along with either 30 or 60 percent design documents. The selection process for the CMAR includes weighted qualitative and quantitative criteria evaluated by the Town and JVA to select the most qualified CMAR. For this project, JVA recommends preparing the CMAR RFP with 30 percent design documents for competitive selection. Post 30 percent design effort will include the CMAR with the design team to assist with constructability and valued savings for the project. The design team works together to produce construction documents and a guaranteed maximum price (GMP) for the project. The distinct advantages of the CMAR delivery versus the Design-Bid-Build delivery is that the Contractor has had time to provide input for constructability and sequencing to the work for the expansion and to reduce interruptions to operations during construction. The CMAR process has shown to be highly successful especially with rehabilitation of existing WWTPs that involve complex tie-ins, bypass pumping, shutdowns, and process improvements. Early involvement allows for the CMAR to plan and efficiently sequence the construction and methods employed and produce a high-quality product and Owner satisfaction.

Project Funding - JVA has a reputation for being creative when it comes to project funds. Often smaller communities do not have limitless, or even adequate, financial resources. JVA is well versed in the available State and Federal funding opportunities for infrastructure projects, and we will assist the Town in pursuing grant and/or loans to fund the necessary infrastructure improvements. We understand the importance of funding when working with small communities and do our best to even seek financing for the engineering services that we provide. The vast majority of our water projects involve State or Federal funding assistance. JVA generally takes the lead on the application process and meeting the

conditions of the grant/loan after the award. Listed below are some funding sources that JVA and our staff have assisted our municipal and Special District clients in obtaining for water infrastructure projects:

- ✓ ***DOLA Energy and Mineral Impact:*** With Johnstown located in Weld County, a County that has experienced significant impacts from the oil, gas and mineral development, the Town may qualify for the Energy and Mineral Impact Assistance Fund. This fund provides financial assistance for wastewater treatment and collection system projects. The assistance includes loans and/or grants for planning, design and construction. There are matching grants for projects between \$200,000 and \$2,000,000. Loans are also available, but other sources provide lower interest rates and have better terms. We have developed excellent relationships with DOLA staff. Contact Barry Cress at 303-866-2352 for a reference on JVA's level of service.
- ✓ ***CDPHE Planning Grants:*** JVA has recently been successful in assisting some communities in receiving planning grants for under \$50,000. These grants are obtained by writing a letter of request, and do not have a lengthy application process. The planning grants can be used for planning and preliminary design of infrastructure improvements.
- ✓ ***CDPHE State Revolving Fund:*** JVA has extensive experience assisting communities in obtaining State Revolving Fund (SRF) grants and loans. This funding source can be used for infrastructure planning, engineering and construction. Direct loans are available to the Town for up to \$2,500,000 and leveraged loans for larger amounts. Direct loans have an interest rate of 0.0 to 2.0 percent based on your MHI and a term of 20 years. JVA has worked extensively with CDPHE and the Colorado Water and Power Development Authority and will assist the Town with the application and loan processing.

Section 3: Management Approach

The JVA team will be managed to optimally balance quality, schedule, and costs on this project. Project management is a focus of our training at JVA. We utilize an outside consultant, Trever Renquist with Impact Management Systems, for individual trainings for key management staff. We also have a monthly in-house training program for all project engineers and managers. Here we focus on a variety of topics such as effective communications, delegation, time management and tools to make each of us more effective managers.

Managing the design and engineering process starts with the development of a detailed Work Plan. The Work Plan identifies the goals of the project, the team, roles, communication, deadlines, deliverables, and all other aspects of the project. The Work Plan will be shared with Town Staff and updated throughout the project. The Work Plan will also include a detailed workload breakdown including hours for each task and a schedule developed using Microsoft Project.

Our management team meets weekly where we discuss staffing needs, workload, and other department level topics. The JVA project managers also meet weekly to allocate staff, set deadlines, and assign projects. This is followed by a department level staff meeting where project tasks are assigned and coordinated, and deadlines are presented. Individual project team meetings occur as needed based on project size. We recommend weekly team meetings for this project. This level of internal communication is also promoted with our clients.

To manage cost, JVA incorporates cost reporting software into our project management, which allows us to monitor the project design budgets on a weekly basis or even daily if needed.

Our project success is a result of close coordination and communication with the owners, designers, contractors, and vendors, allowing us to serve you more effectively. Project progress is regularly

communicated through the design, review, construction, and inspection procedures on all projects. This careful attention to your needs creates projects that run smoothly and efficiently.

Specifically, for the JWTP Expansion JVA proposes to provide a work plan that will provide milestone dates for work-in-process deliverables as outlined in the RFP. The deliverables will include the 30, 60 and 100 percent design documents for Town review followed up by design progress meetings for each deliverable to obtain input prior to finalizing. All deliverables and milestones will be agreed with the Town at the project kick-off meeting. At the 30 percent design deliverable, JVA proposes to assist the Town with the CMAR selection, value engineering and GMP proposal reviews.

The JVA team is committed to excellence in our service to our clients. The JVA team recognizes that true service to the client is more than quality engineering. Quality in JVA projects is maintained by several important factors:

- Our similar work on past projects of similar scope promotes efficiency
- Work is reviewed internally for quality, possible value engineering benefits, and engineering excellence
- Our firm excels in building state and local regulatory relationships, and public outreach.

"I had the privilege of working closely with several engineers and managers from JVA following the Sept. 2013 flood. I can highly recommend JVA and the team I worked with, namely Mark Van Nostrand, Andrew Sparn, and Josh McGibbon. They were thorough, professional, and committed to bringing Lyons' residents home as quickly and safely as possible. Thanks, JVA!"

**—Sandy Banta, Former Board of Trustee
Town of Lyons**

Section 4: Staff Qualifications



John McGee, P.E.
Principal / Client Manager

John has over 32 years of experience with water treatment related projects and will serve as the Principal-in-Charge for the CLFP South Plant project. John's primary role of the project will be weekly check-ins with JVA staff members on project status, budget and schedule. John will represent JVA as the contract signatory and licensed engineer for stamped reports and drawings. As principal-in-charge, John will correspond directly with Town staff on the execution of the Town/JVA agreement, negotiated scope and fees, and any value-added services that may arise during the project. John is familiar with the Johnstown WTP from previous discussions with plant staff and attendance at the pre-proposal meeting. John brings in-depth experience with the rehabilitation of mixed media filters and expansion as technical lead for the Berthoud WTP expansion, Pueblo West Metro District (PWMD) WTP expansion, City of Loveland WTP expansion and North Table Mountain WTP expansion. Prior to joining JVA, John was the Water Treatment Manager and Project Manager for the City of Loveland. During his tenure at the City, John managed and prepared in-house designs for the rehabilitation of 16 mixed media filters, addition of a 12 MGD flocculation / sedimentation using plate settlers, and rehabilitation of a 30-year old flocculation and sedimentation process with the replacement of baffle walls, flocculation paddles and drives and tube settlers. John brings this experience and expertise for the JWTP expansion project and will share his in-depth experience with project team members and Town staff throughout the evaluation, design and construction stages.



Josh McGibbon, P.E.
Technical Lead and Funding Expert

Josh's role for this project will be the Technical Lead and Funding Expert. Josh will provide technical leadership to the team and draw on his past experience with similar projects to meet the Town's goals. Furthermore, Josh has spent the past 20 years working with the State's various funding agencies to make projects a reality by finding the necessary funding. Josh has significant amount of experience with both conventional filtration (mixed or dual media) and alternative filtration systems such as membranes. He will attend reviews and workshops with the client, commit project resources, and provide technical QA/QC to all design deliverables.



Andrew Sparn, P.E.
Project Manager

Andrew will be the project manager for the JWTP Expansion project. He will be the primary contact and manage the design teams for this project. Andrew is currently wrapping up as the project manager for the 16 MGD North Table Mountain Water & Sanitation District (NTM) expansion project. The CMAR delivery is on schedule to be completed on time and within the \$13.6M guaranteed maximum price. This project is very similar in size and scope to the JWTP expansion project including an 8 MGD filter addition and pretreatment expansion. With the NTM project winding down, Andrew will be committed to this project as your project manager and will spend the time needed with the project team and Town staff to produce a high-quality product delivered on time and within budget. Prior to joining JVA, Andrew worked for Aslan Construction as a Superintendent is familiar with water treatment plant construction and large pipeline construction. Andrew is the On-Call Engineer for the City of Lamar and has successfully completed multiple recent projects involving replacing, rehabilitation and upsizing water distribution and transmission pipelines. Andrew is

skilled in all facets of design, permitting, and construction management of water treatment and pipeline projects. He has extensive knowledge and experience in grant/loan funding for water and wastewater treatment facilities and water quality projects. Andrew excels in communication and project management to ensure projects stay on schedule and budget. Andrew has been with JVA for 10 years and has coupled his construction experience with a strong design and project management experience which aligns him very well to serve as Project Manager for the JWTP Expansion project.



**Leah Opitz, P.E.
Project Engineer**

Leah will be the project engineer for the JWTP Expansion project. Ms. Opitz is very familiar with mixed media filtration from past projects including Carter Lake Filter Plant Filters #14 and #15, Filter Media replacement for the Soldier Canyon Filter Plant and North Table Mountain WTP expansion. Leah has also been the lead design engineer for numerous membrane filtration projects including Tod Creek Metro District WTP improvements, Mount Crested Butte WTP expansion, Lochbuie WTP expansion, and the Town of Crested Butte WTP expansion. For this project, she will assist / coordinate with Melissa, Ryan and sub-consultants during the concept design / evaluation phase, preliminary / final design phases, and Basis of Design report for the JWTP expansion project.



**Ryan Wienpahl
Design Engineer**

Ryan Wienpahl is a design engineer based in the Boulder JVA office. He has four years of experience in the water and wastewater treatment field, including more than three years as a treatment plant operator. Through working for a contract operations company, Ryan had the opportunity to operate a wide variety of drinking water and wastewater treatment systems, allowing him to develop a strong foundation in water

treatment processes. He now brings this strength to bear in the design of new systems with JVA. Prior to turning his focus to water treatment, he worked for two years on water quality assessment projects with the U.S. Geological Survey, including the National Water Quality Assessment project. He has also volunteered for water-related non-profit organizations, including Water for People in the Denver area and El Porvenir in Nicaragua. Ryan received his M.S. degree in Civil Engineering from the University of Colorado at Boulder in 2016.



**Laurie Laos
Raw Water Pipeline Design**

Laurie Laos will lead the Raw Water Pipeline Design for the JWTP Expansion project. Laurie is a senior project engineer and certified floodplain manager that has been with JVA for 5 years, specializing in water distribution and conveyance. In addition to her work on infrastructure design and analysis projects and master planning, she assists the civil site teams on stormwater flood control and water quality design. Laurie is proficient in the preparation of utility design drawings and specifications. Laurie is well versed in modeling and design programs including the EPA Stormwater Management Model (SWMM), ArcGIS, WaterGEMS, and AutoCAD for developing base maps and drawings, and PCSWMM and Infoworks products.



**Adam Teunissen, P.E.
Structural and Architectural
Lead**

Adam will be leading the structural design for this project. Adam has specialized in structural engineering and design for water and wastewater treatment facilities and pump stations for the last 17 years. His experience includes cast in place concrete basin and wet well designs as well as treatment buildings of several different building materials including masonry, precast concrete, steel, and wood. Adam has also performed several designs which

utilize pre-engineered metal building systems for water, wastewater, and commercial applications. Adam works extensively on just water and wastewater applications that involve structural engineering and is very familiar with all applicable ACI codes for water retaining structures. Adam has completed and actively involved with most the CMAR water and wastewater infrastructure projects with JVA, including North Table Mountain WTP, Mount Crested Butte WTP, Idaho Springs WWTP, Nederland WWTP, Crested Butte WTP to name a few.

Subconsultants

We supplemented our design team with subconsultants who have expertise in geotechnical engineering, survey, and mechanical. JVA has worked extensively with these team members. We know and trust them to provide the best possible service to the Town.



Browns Hill Electrical and Controls (BHEC)

BHEC is currently performing work for the Town at the JWTP including upgrading the SCADA system and is familiar with the existing electrical and control systems. JVA will team with BHEC staff Ted Willie, PE and Charles Page for the electrical and controls design of the JWTP Expansion. Both Charles and Ted will attend the kick-off meeting and conduct a thorough electrical and controls condition assessment to determine limiting factors of the JWTP. The limiting factors along with the selected filtration expansion alternative will set the stage for the electrical and controls design upgrades and improvements.

Established in April of 2000, Browns Hill Engineering and Controls LLC (BHEC) is an Electrical Engineering consulting firm located in Littleton, Colorado. Browns Hill and JVA have a relationship going back to 2000 and have worked together on numerous water and wastewater projects.

LITHOS

ENGINEERING

Lithos – Geotechnical

Lithos Engineering (Lithos) specializes in geotechnical evaluations for utility and water and wastewater plant construction and the evaluation and design of trenchless techniques such as pipe bursting, horizontal directional drilling (HDD), sliplining, and cured-in-place-pipe (CIPP).

For this project, Lithos will conduct the Geotechnical Investigation which will include the soil borings located at the proposed WTP site structures and pipelines, groundwater depth determination and soil testing. From the results of the investigation, Lithos will prepare the Geotechnical Investigation Report which will provide recommendations for foundation construction and compaction. As discussed earlier, Lithos will provide the geotechnical engineering and trenchless design for the LTR raw water pipeline and construction.

Lithos will be lead by **Lance Heyer, P.E.** and **Steven Kuehr, P.E.** Lance is is an associate and geotechnical engineer with Lithos Engineering and has 11 years of experience in the engineering industry. Mr. Heyer has over 7 years of specific experience designing and observing construction for water treatment plant related infrastructure. Steven a Senior Consultant at Lithos Engineering. Mr. Kuehr specializes in geotechnical and tunnel engineering as it relates to water supply, sewerage, water resources, aggregate mining, roadway and bridge projects.



King Surveyors – Survey

King Surveyors (King) has been serving municipalities in northern Colorado for over 30 years. Based in Windsor, CO, King is near Johnstown and

has provided survey services in the Johnstown area for many years.

King will prepare Design Topographic Exhibits, establish a job site benchmark tied to the Town GIS vertical datum, and data collect topographic site features, trees, surface evidence of utilities and type (including physical characteristics such as inverts or top of pipe), curbs, access and design features noting the ROW or property lines of each site. In addition to the visible location of the utilities, they will show the location of the utilities as they are noted on the maps from local municipalities and utility companies, and any utility flagging or paint markings existing at the time of fieldwork. King will include underground utility locator services with 811 call in to meet requirements of Senate Bill 18-167. To confirm the elevation and location of critical utility crossings for the sewer alignment, potholing services will be used in conjunction with survey. A potholing firm will be selected during pre-design based on potholing firm availability. Potholing will be performed in conjunction with survey to achieve quality level B design drawings.

Vladislav Skrejev, PLS will be the project manager for this project and will schedule the survey crew for

the work. Chad will also be reviewing all deliverables and will be the Professional Licensed Surveyor for the project.

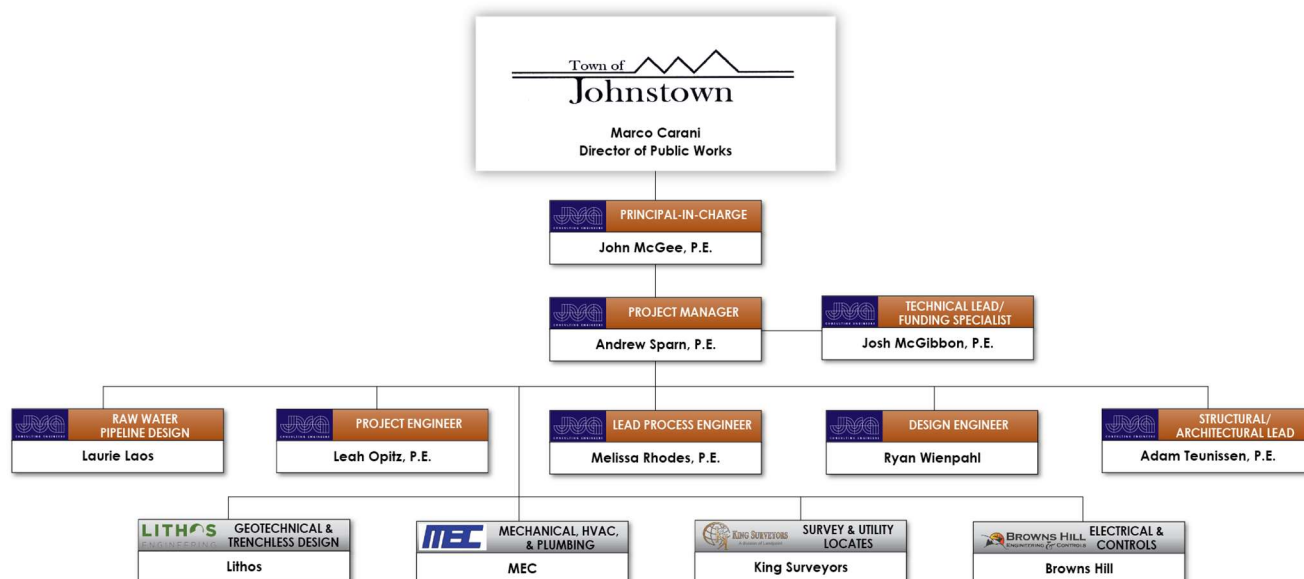


MEC – Mechanical Engineering

Based on Westminster, CO Moen Engineering Consultants, Inc (MEC) has been providing mechanical engineering services throughout Colorado and other states for over 16 years.

Bryan Moen, P.E. will be the lead mechanical engineer for the lift station design. Bryan has worked with JVA on several water treatment, wastewater treatment and lift station projects and have established a trustworthy and quality relationship. JVA and MEC brings this experience to this project. Bryan is very familiar with the applicable NFPA and mechanical building codes that will be required for this project. For the existing filter building and proposed building additions HVAC design critical for proper ventilation, energy efficiency and dust control.

Water Treatment Plant Expansion Design Organizational Chart



Section 5: Related Project Experience

Woodmoor WSD Water Treatment & Raw Water Pumping & Transmission Monument, CO	
	Reference: Woodmoor Water and Sanitation District Jessie Shaffer, District Manager JessieS@WoodmoorWater.com 719-488-2525

JVA has been serving as the District's On-Call Engineer since 2018 after delivering the design of the Well 21 project. We have implemented all water and wastewater capital improvement projects in the last two years. JVA has developed a close relationship with District staff, working weekly with staff engineers, management, and operators. We regularly attend Board meetings and assist in planning and annual budgets.

Well 21

JVA completed the design, permitting, and construction administration for the Well 21 project. The project included the drilling of a new 2,100 ft deep groundwater well, equipping the well with a pump, motor, pipe, and pitless adaptor. JVA permitted and designed a well house with air relief valve, sample station, flushing valve, VFD, pump controls, and instrumentation. JVA provided AutoCAD training and worked closely with the District Engineer to develop construction documents for the 5,300 ft raw water transmission line to tie the new well into the Central Water Treatment Plant.

Scrub Oaks Water Line Replacement

JVA designed the 2,000 LF Scrub Oaks water line replacement. The existing water line was experiencing frequent breaks and leaks. The design took into consideration maintaining service to numerous customers while replacing the waterline. The waterline was relocated within the County right-of-way to maintain separation from the existing sanitary sewer main. JVA received utility permits

from El Paso County. The project was bid with a pipe bursting alternative, allowing the District to compare costs for open trench versus pipe bursting and budget for future capital projects. The project was delivered under budget and within the desired schedule.

South Water Treatment Plant Improvements

JVA is designing the improvements to the SWTP which include replacing the on-site sodium hypochlorite generations system, relining an existing FRP tank, improving ventilation in the mechanical room, complying with CDPHE's Disinfection Outreach Verification Effort (DOVE), improving chemical feed systems, and modifying the raw water feed system to alleviate pressure surges and metering issues.

Central Water Treatment Plant Improvements

JVA is designing and permitting the improvements required to covert the CWTP from a groundwater treatment facility to a surface water treatment facility. This project includes replacing the clarifier and filter media; replacing the underdrains; adding air scour; recoating the filter units; adding filter-to-waste; complying with DOVE; optimizing pretreatment for iron, manganese, and radium; adding a raw water blending tank; and replacing instrumentation and controls. JVA is advising the District on complying with the draft TENORM regulation due to elevated levels of radionuclides in the raw water sources. JVA is performing a demonstration scale study in compliance with CDPHE for radium removal.

Lake pump Station

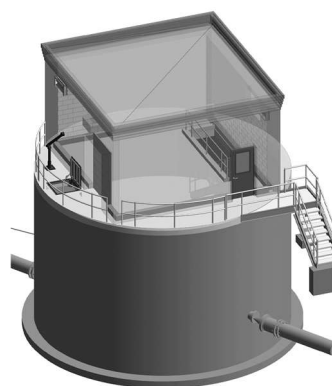
JVA is designing and permitting a new raw water pump station at Lake Woodmoor to feed the CWTP. The new pump station will be designed with redundant reservoir feed lines to draw water off the deepest levels of the reservoir. The pump station will also have the ability to pump to both the SWTP and the CWTP. The pump station alternatives and effects to the dam are being evaluated thru a Semi-Quantitative Risk Analysis (SQRA). The project includes 3,000 ft of new raw water transmission line to tie the pump station into the CWTP.

Evergreen WTP Improvements
Evergreen, CO



Reference:
 Evergreen Metro District
 Dave Lighthart, General Manager
 dlighthart@evergreenmetro.org
 303.674.4112

JVA was hired by Evergreen Metro District (District) in early 2019 to make improvements to the high service pump station (HSPS), site piping, membrane reject waste and recovery system, and chlorine contact basin. The project also included demolition of existing structures, drainage improvements, new automated security gate and entrance, and electrical and control upgrades. JVA prepared the Project Needs Assessment for the District to apply for State Revolving Fund (SRF) program and obtain low interest loans for construction of the project. The WTP processes include flocculation and sedimentation followed by submerged membrane filtration, and chlorine disinfection. The major focus of the design was replacing and aged high service pump station with a new HSPS which was designed within a repurposed abandoned clarifier and included a new HSPS building on top of the HSPS.



New High Service Pump Station

The WTP site was very constrained with limited room for expansion with an abundance of active and abandoned underground utilities. The District elected to utilize the CMAR delivery to construct the project. JVA assisted with the District with CMAR selection process at the 60 percent design document phase and

was awarded to Stanek Constructors. The construction documents and GMP was finalized in December 2020 and notice to proceed for construction January 2021. JVA has been retained by the District to begin water system modeling and master planning for 2021 and will be providing construction administration services for the WTP improvements.

Project Size: 4.5 MGD Capacity
Design Contract Amount: \$280,000
Construction Administration: \$120,000 million
Guaranteed Maximum Price: \$2.77 million
Project Completion: May 2022

Water Treatment Plant Filter Upgrades
Grand Junction, CO



Reference:
 John Eklund, Utility Engineer
 City of Grand Junction
 970.244.1558
 Approximate Total Project Cost:
 \$1,200,000
 Cost of JVA Services:
 \$143,000

JVA designed and permitted filter upgrades to the City of Grand Junction 16.0 MGD Water Treatment Plant. The project included replacing the existing filter underdrains and media as well as the addition of new blowers and air scour. The project was a fast track design with only 60 days to complete and submit to CDPHE. The design included converting the existing filters from surface wash to air scour. JVA working extensively with Leopold to pre-purchase the equipment to meet the aggressive schedule. The project was constructed by Moltz Construction on schedule and below budget.

Project Size: 16 MGD Capacity
Design Contract Amount: \$114,000
Construction Administration: \$29,000
Construction Price: \$900,000
Project Completion: June 2017

“JVA has been excellent. Their expertise has made our WTP Filter Retrofit project seem almost effortless. A few things stand out:

JVA makes sure our plans are going to work – Updating an old treatment plant to current standards is no small feat. JVA coordinated local and state design standards (including getting exemptions approved), equipment suppliers, and sub-consultants seamlessly to create a comprehensive project plan set in a mere 62 days.

JVA never seems busy (even though I know they are) – They always seem pleased to investigate the best solution or answer questions when I call. I never feel rushed or put off, and responses are always prompt and well thought out.

JVA has a full range of services at their fingertips – Whether structural, environmental or other, they can provide services and answers from within their company. Also, they provided structural inspection of our facility which has kept the contractor moving. It is much simpler than dealing with multiple subs, whether in design or construction. This is incredibly important when our project schedule is so short.

JVA is enjoyable to work with – Their resume speaks for itself. Their professionalism is paramount. However, the fact they are friendly and fun to be around is the icing on the cake.”

City of Grand Junction

Mt. Crested Butte Water & Sanitation District WTP Expansion

Mt. Crested Butte, CO



Reference:
Mike Fabbre, District Manager
Mt. Crested Butte Water &
Sanitation District
970.349.7575
mfabbre@mcbwsd.com

JVA designed and permitted the Mt. Crested Butte Water and Sanitation District (District) Water Treatment Plant (WTP) Expansion. The District’s WTP is a 1 MGD direct filtration water treatment

facility consisting of flocculation, sedimentation and filtration in packaged unit followed by chlorine disinfection. The WTP treats water from the East River, Malensik Ditch, and four springs. The project includes capacity expansion to 1.5 MGD firm capacity and changing to membrane filtration for the new water treatment plant and construction of a new East River raw water pump station. These improvements will provide adequate system redundancy during peak demands. The project also includes a new redundant raw waterline connecting the pump station to the water treatment plant. In addition to process improvements, the project includes repurposing the existing water treatment plant building and a new administration building with a water quality laboratory, operations room, kitchen, locker rooms, and operations offices. As part of the permitting process, JVA prepared a comprehensive Basis of Design Report (BDR) which analyzed current and projected full buildout peak demands to comply with CDPHE design criteria for potable water systems. The project is utilizing the Construction Manager and Risk (CMAR) project delivery method and will be funded by the State Revolving Fund. JVA is in the process of developing 90% construction drawings and specifications for the CMAR contractor to prepare their Guaranteed Maximum Price.

JVA has worked on numerous water and wastewater projects for the District and currently serves as their on-call engineer. Projects have included a new Disinfection Building, Process Building Improvements, Paradise Lift Station building, development review and construction observation services.

Project Size: 1.5 MGD Capacity

Design Contract Amount: \$1.2 million

Construction Administration: \$1.2 million

Guaranteed Maximum Price: \$20.3 million

Project Completion: March 2022

Town of Berthoud Water Treatment Plant Expansion, Berthoud, CO



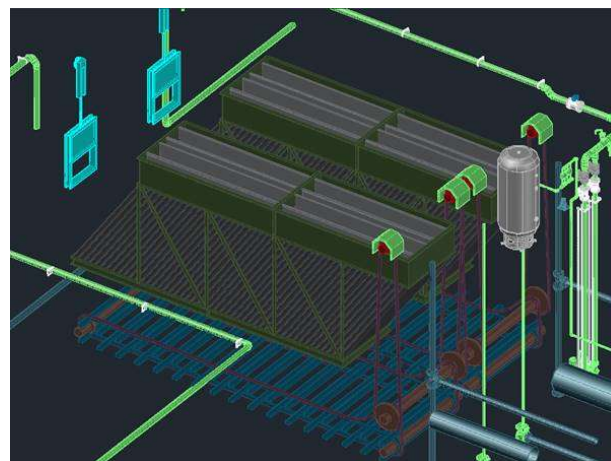
Reference:

Stephanie Brothers, P.E. Public Works
Director Town of Berthoud
970.532.2643
sbrothers@berthoud.org

JVA completed a water system Master Plan for the Town of Berthoud in 2011 and updated the Master Plan in 2017. A detailed Capital Improvement Plan for the WTP was developed based on findings during a Comprehensive Plant Evaluation (CPE) in the 2011 Master Plan. The improvements included a 2017 WTP expansion project to increase capacity from 2.2 MGD to 4.2 MGD. Other successful projects that have been completed as part of the Master Plan include distribution mains for new developments, storage mixing, a booster pump station for a new pressure zone, and distribution system interconnects with the Little Thompson Water District.

In 2017, JVA completed the planning, permitting and design of the Berthoud WTP Expansion and Improvements. The design included the demolition of the existing single basin flocculator / clarifier and conversion to a two-train pretreatment plate settler system and hoseless sludge vacuum track removal doubling the capacity within the same footprint along with the addition of a third flocculation stage. The pretreatment upgrade allows for the Town to take one basin off at a time without the need of shutting down

the entire plant for maintenance of the pretreatment process.



Plant 3D Modeling for Plate Settler System

The design also included doubling the capacity of the dual media filtration system, backwash waste basin improvements, new electrical service and standby generator, demolition of the old filter building, addition of a powder activated carbon (PAC) system, plant drain pump station upgrade, corrosion control improvements, and new clearwell overflow.

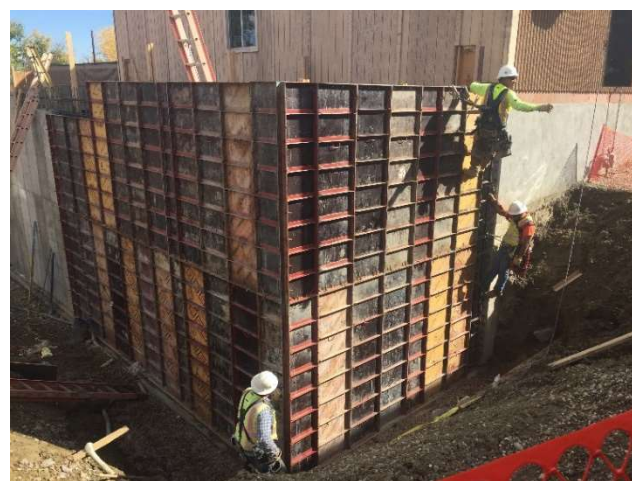


Photo: Construction of the New Filter Trains #3 and #4

JVA prepared the Basis of Design Report at the 60 percent design and submitted to CDPHE for approval. The Town elected to use the CMAR project delivery to construct the project. JVA prepared the RFP for the CMAR review and selection. Moltz Construction was awarded the CMAR design / constructability review contract and construction contract with a GMP of

\$3.44 million. The construction began late August 2017 and completed by August 2018.

JVA also performs on-call engineering services for the Town of Berthoud including WTP permitting, compliance and water quality assessments, hydraulic modeling, and development utility reviews.

Project Size: 4.2 MGD

Design Contract Amount: \$175,900

Construction Administration / Observation:
\$134,100

Construction GMP: \$3.44 million

Construction Completion Date: August 2018



JVA was retained from the conceptual design phase of the project to begin the preliminary and final design and permitting phases for the North Table Mountain Water and Sanitation District (NTM) Water Treatment Plant (WTP) Expansion. The NTM WTP is an 11 MGD conventional water treatment facility consisting of ballasted flocculation / sedimentation, filtration, and chlorine disinfection. The project includes capacity expansion to 16 MGD capacity, while providing adequate treatment redundancy during peak summer demand. Water treatment improvements included the upgrade and replacement of the first generation Actiflo™ ballasted flocculation / sedimentation with the latest generation ballasted floc / sed system (Actiflo Turbo). The ballasted floc / sed upgrade increased the pretreatment capacity from 11 MGD to 16 MGD within the existing basins with minimal structural improvements. The design also included multi-media filter expansion, baffling the chlorine contact basin to increase the baffling factor from 0.1 to 0.5 and achieve DOVE compliance, housewater pumping improvements, and complete revamping of the primary and electrical service, ATS and standby generator, and SCADA / HMI / controls.

In addition to process improvements, the project includes a chemical storage / feed facility and an administration building with a water quality laboratory, operations laboratory, training center, kitchen, locker rooms, and operations offices. JVA prepared the 30 percent, 60 percent, and 100 percent design phases along with an opinion of construction cost for each phase. There was a significant amount of collaboration and workshop sessions with the District to refine the design and specifications. At the 60 percent design phase, the Basis of Design Report (BDR) was submitted to CDPHE for review and was approved within two months. In addition, JVA prepared the RFP with the 60 percent design documents to solicit qualified contractors for review and selection of a Construction Manager at Risk (CMAR) project delivery. The successful CMAR was Aslan Construction from Berthoud, Colorado. Aslan was on the project team during the final design phases and assisted with constructability, creativity and cost savings to meet the construction budget. This collaborative effort resulted in a successful Guaranteed Maximum Price (GMP) for the project. JVA also assisted the District in the preparation of a Department of Local Affairs (DOLA) Energy Impact Assistance Grant (EAIG) application. The District was awarded a grant of \$1,000,000 partly due to an innovative hydrothermal HVAC heat pump design to reduce carbon fuels required to heat and cool the administrative / lab building (Green Energy). The project construction kicked off in March of 2020 and is anticipated to be substantially completed by August of 2021. JVA has been retained by the District for construction observation and construction administrative services. A summary of project costs for the engineering design and construction services and construction cost is provided below.

Project Size: 16 MGD Capacity

Design Contract Amount: \$644,000 (no change orders)

Construction Administration and Observation

Engineering Services Contract Amount: \$426,000

CMAR Guaranteed Maximum Price: \$12,800,000 (includes the \$1 million DOLA grant)

Date of Project Completion: August 2021

Town of Crested Butte Water Treatment Plant Improvement Project, Crested Butte, CO



Reference:

Town of Crested Butte
David Jelinek, Water System Manager
970.349.0885
DJelinek@crestedbutte-co.gov

JVA was hired by the Town of Crested Butte (Town) in 2018 to conduct a Project Needs Assessment in accordance with the State Revolving Fund (SRF) program to obtain low interest loan for expanding the Town's WTP. In 2018, the WTP had experienced peak day demand approaching the plant capacity of 1.25 MGD. The Town and JVA were successful in obtaining the loan along with a DOLA grant for expanding the WTP to 1.66 MGD sufficient for project demands for the next 10 years. The Town's WTP is an ultrafiltration membrane filtration water treatment plant. The expansion project featured an increase in the system capacity from 1.25 MGD to 1.66 MGD, redesigned chemical pretreatment system to optimize treatment efficiency and improve system hydraulics, and a building expansion to improve operability and access to process equipment. As part of this effort, funding from DOLA and SRF was facilitated to finance the construction. The project was designed on an expedited schedule and went from the planning stages of a comprehensive performance evaluation to 100% design and permitting in under one year.

Project Size: 1.66 MGD Capacity

Design Contract Amount: \$139,000

Construction Administration: \$139,000

Guaranteed Maximum Price: \$2.3 million

Project Completion: December 2019

Northglenn Water Treatment Plant Master Plan Northglenn, CO



Reference:

Mike Roman, Civil Engineer II
303.450.4079
mroman@northglenn.org

The City of Northglenn (City) operates a conventional water treatment facility (WTF) consisting of chemical addition, rapid mix, flocculation, sedimentation and mixed media filtration. Serving a population of about 40,000 people, the 14 million gallon per day (MGD) facility operates at about 60 percent capacity in the peak summer months. Build-out maximum day demands were projected at about 10 MGD. As part of the Water Treatment Plant Master Plan Update the treatment capacity, facility performance, and operations were evaluated and performance limiting factors (PLFs) were identified. Recommendations were made for treatment process improvements to address the identified PLFs. The highest prioritized recommendation was water treatment residual solids handling improvements. The current solids handling system consists of two recycle basins and a pump station. Filter backwash, clarifier blow-down and plant drains all feed the recycle basins and the combined product is pumped to the sanitary sewer without recycle to the front end of the WTF. Staff indicated that about 60 million gallons of water per year are wasted to the sewer that could be recycled.

JVA document potential comprehensive solutions to improve the residual solids handling process. The primary objectives for the improvements include backwash water recycling and solids dewatering. Several passive dewatering options were explored, however, due to property constraints, mechanical dewatering was preferred and documented in the Master Plan Update. It was recommended to replace the liner and solids removal system for the backwash recovery ponds with a new recycle pump station. The combined solids loading (backwash waste and clarifier blow-down) was projected at about 2,300 lbs/day, including the soon to be added filter to waste. A detailed description and cost estimate for the solids

handling and mechanical dewatering facility was provided in the Master Plan Update, including backwash recovery pond and recycle pump station improvements, solids handling basin, decant system, equalization and thickening, process building and plan for potential beneficial reuse. The Master Plan is

complete, and the City is using the document to develop a long-term CIP.

Project Size: 14 MGD Capacity

Design Contract Amount: \$64,300

Project Completion: April 2020

Section 6: Project Schedule

Project Milestones	2021										2022			
	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Project Initiation and Site Investigations	B		C											
Concept Design Phase	B			C										
Concept Design Phase Workshops			X											
30 Percent Preliminary Design Phase			B			C								
Preliminary Design Phase Workshops					X									
60 Percent Design Phase and BDR / CMAR Selection						B			C					
60 Percent Design Workshops								X						
CDPHE BDR Approval											X			
Construction Documents and GMP Phase										B		C		
Construction Documents Workshops											X			
Notice to Proceed Construction												B		
Construction Administration Phase												B		

B = Begin

C = Complete

Project Initiation and Site Investigation Phase

As shown in the Project Schedule, JVA will schedule a kick-off meeting and JWTP field visit with the Town and Operation staff. It is anticipated that the project will begin in the middle to late March 2021. All key team project team members including subs, will attend the kickoff meeting. Following the meeting, the project team will tour the JWTP and interview operation staff regarding plant operations and design features. JVA will prepare meeting / plant tour notes and distribute to the Town.

The geotechnical investigation and topographic survey and utility locates would be launched following the kickoff meeting. Lithos will conduct the Geotech investigation and develop a geotechnical

report for recommendations for structure foundation support and dewatering. The survey will include topo for the entire site along with critical tie in elevations and hydraulic elevations of existing piping and processes. The Project Initiation and Site Investigations will be completed by May 2021.

Concept Design Phase

The intent of this phase is to evaluate and prepare the design concept for each design task presented in the *Approach Section* of this proposal. JVA will prepare a technical memo for each design task that will set the design parameters for treatment processes and equipment, hydraulics, mechanical (i.e. HVAC), electrical and controls. JVA will schedule a half-day workshop review session with the Town and

operation staff to discuss the technical memos and respond to comments. It is anticipated that the Concept Design Phase will be completed by June 2021.

30 Percent Preliminary Design Phase

Once the concept design for the filter expansion is completed and agreed upon with the Town, JVA will kick into the 30 percent design phase. At this phase, the filtration alternative has been selected which will allow for an efficient schedule to complete the 30 percent design documents. The 30 percent design will include site plans, site piping plan, hydraulic profile, process & instrumentation diagrams, process plans and sections, and electrical one-lines drawings. JVA will prepare an opinion of cost (OPC) for the construction. During the final stages of the 30 percent design a half day workshop session will be Town to obtain feedback prior to finalizing the 30 percent design documents. It is anticipated that the 30 percent design documents will be completed by August 2021.

60 Percent Design Phase

JVA will produce 60 percent design documents which will include drawings and technical specifications (Divisions 1 through 16). JVA will prepare the Basis of Design Report (BDR) in accordance with CDPHE guidelines for submittal. The drawings will include general, civil, process, architectural, structural and electrical drawings. For specifications, the Construction Specification Institute (CSI) 5-digit Master Format will be used to create the technical specifications. JVA will communicate closely with the Town on specified process equipment, instruments, piping, valves, and building materials to ensure that these products meet the Town's standards and are compatible with existing equipment, instruments, and materials. JVA will prepare an RFP and draft contract documents to solicit qualified contractors for delivering the project using the Construction Management at Risk (CMAR) method. Once the CMAR proposals are received, JVA will assist the Town with review of the proposals and recommendation of Award. Once selected, the CMAR will be on board with the project team to

complete the final design phases of the project. Typically, the CMAR will have a separate contract with the Town for pre-construction design tasks. JVA will schedule with the Town and CMAR for review and schedule a half-day workshop to review the design and respond to comments and input from the Town and CMAR. It is anticipated that the 60 Percent Design Documents and CMAR selection will be completed by November 2021. It is anticipated that the BDR submittal to CDPHE will be completed by November 2021. From JVA's experience, CDPHE will take two to three months to review the BDR for approval.

Construction Documents and Guaranteed Maximum Price (GMP)

JVA will advance the design details and technical specifications to produce construction documents (CDs). During development of the construction documents, JVA will be working with the Town and CMAR to obtain review comments on constructability and design details. The advantage of having a CMAR on board allows for efficiency during the design process which includes input from the contractor throughout.

The documents will include the executed CMAR contract documents and final GMP. The final GMP is a result of a collaborative effort between the Town, JVA and Contractor during the design reviews and coordination with sub-contractors, suppliers, and equipment sales representatives to arrive at the most competitive contract price. JVA will submit the 100 percent design documents to the Town for review and schedule a half-day workshop to review the design and respond to comments and input from the Town. It is anticipated that the CDs, GMP, and execution of the CMAR contract will be by February 2022.

Construction Administration Phase

Based on the project schedule shown above, the notice to proceed (NTP) for the CMAR will be March 2022. JVA will assist the Town with providing in-office and field construction administration services. We have estimated for a project of this size (not including the LTR pipeline construction) a

construction timeline of 18 months. JVA will provide the following construction administration services:

- Attend pre-construction meeting – prepare meeting minutes
- Review of pay applications, shop drawing submittals, O&M manuals, Request for Information (RFIs), and Work Change Directives (WCDs)
- Attend weekly construction progress meetings
- Provide part-time onsite inspection and prepare observation reports (we have assumed weekly 4-hour visits for a duration of 18-months)
- Prepare record drawings (CAD and PDF)

Section 7: Work Breakdown Schedule and Estimated Fee

Please see the sealed envelope attached for a detailed work breakdown structure (WBS) for this project with hourly rates and a total estimated fee for JVA’s design and bidding services for the Johnstown Water Treatment Plant Expansion Project. Our estimated fees are based on an estimated total construction cost of \$8 million. There will be opportunities to reduce costs through the CMAR process and the collaborative approach presented in this proposal.

“You and your team have delivered every bit of what you said you would and more. We are very pleased to have gone with JVA for this project.”

—Brian G. Prunty, Public Works Director
City of Rifle

RESUMES



Laurie A. Laos

Senior Project Engineer, Environmental and Civil Engineering

Education

M.S. Civil Engineering,
Colorado State University, 2014

B.S. Environmental
Engineering, University of
Wisconsin-Platteville, 2008

Registrations

Certified Floodplain Manager

Professional Organizations

AWWA



Project Experience

Design and Project Engineer for the following projects:

Town of Berthoud I-25 Water Distribution and Wastewater Collection Systems, Berthoud, CO.

Design Engineer for design and construction of 4,250 linear feet of a 16-inch PVC water transmission main and 8,000 linear feet of 15-inch and 12-inch PVC sanitary sewer main with connection to the Berthoud Regional Wastewater Treatment Facility (WWTF). Project included coordination and dual design of the water and sanitary sewer. Design included three crossing of I-25 via a boring. An interconnect with Little Thompson Water district required detailed understanding of their system and design standards for the connection to occur. Project included open cut river crossings which required floodplain and wetland analyses and an Army Corp permit.

Town of Windsor Water Transmission Main Rehabilitation, Windsor, CO.

Provided design and GIS support for the analysis and rehabilitation recommendation for 2,800 linear feet of an existing 16-inch diameter pipe. Completed an alternative analysis on the appropriate repair option of slip-lining or replacement using available information including working with Town staff to understand the current system condition and determined that the best course of action for the project was a waterline replacement. Design Engineer for the design and construction of the water main replacement.

Prospect Mountain Water Distribution System Improvements, Town of Estes Park, CO. –

Senior Project Engineer responsible for the design of water main distribution system replacement for the Prospect Mountain service area in the Town of Estes Park. Responsible for organizing and directing four design engineers used to complete the design of 30,000 LF of water distribution mains. Worked with available existing Town GIS data to develop preliminary design of the waterline and finalizing the design with the topographic survey. Developed easement figures for the legal descriptions. Coordinated with Town Staff for the preferred alignments and discussed best options for the alignment of the new waterline to provide service to all customers while considering all design constraints that are inherent with installation of a new waterline in an area that is already built out.

Hidden Valley Water District Connection to Evergreen Metropolitan District, Evergreen CO.

Senior Project Engineer responsible for the design of a new water main distribution system to connect the Hidden Valley Water District (HVWD) to Evergreen Metropolitan District (EMD). Design included 2,325 LF of 6-inch DIP with a flow meter vault, a backflow preventor vault, and an altitude valve vault. The connection required a bore under Highway 74 with several utilities, private owner concerns, and elevation difference that challenged the design and construction. The EMD waterline could not be shut down for the connection and required a wet tap of the 14-inch line. The project also included the replacement of 1,780 LF of the existing 2-inch and 4-inch water service line parallel to the 6-inch distribution line and the reconnection of 13 services.

Woodmoor Water Sanitation District Scrub Oaks Waterline Replacement, El Paso County, CO.

Project and design engineer for the design of the replacement of 980 LF of 6-inch DIP waterline that is located between two blocks in a residential subdivision. Initial design considerations included slip-lining of the existing waterline, but further analysis of the existing utility locations and available space determined that realigning the waterline was a better option. The design was completed in a condensed schedule due to construction timing and funding.

Town of Wellington Storm Sewer Design and Water Line Replacement, Wellington CO.

Design Engineer for the drainage analysis of 1,500 linear feet of 36 and 42-inch RCP storm sewer pipe within a residential roadway. The analysis included delineating storm runoff basins, creating a Stormwater Management Model (SWMM), designing the storm sewer system including a railroad crossing. In conjunction with the storm sewer design, design was completed for the replacement of the existing 8" AC water line that parallels the designed storm system and installing two new sanitary sewer mains. Worked with Town staff to determine the location of the pipe and precautions to be taken while working with the AC pipe.

John P. McGee

Principal, Environmental Engineering

Education

M.S., Civil/Environmental Engineering, West Virginia University, 1988

B.S., Civil Engineering, West Virginia University, 1986

Registration

Professional Engineer:
Maryland, Indiana, Colorado

Professional Organizations

Water Environment Federation (WEF)

American Water Works Association (AWWA)



Instructor/Trainer

Colorado State University – Part Time Instructor for teaching the Spring Semester, 3 credit hour class CIVE 437 – Wastewater Treatment Process Design

Water Projects

Principal, Project Manager, Technical Advisor or Engineer of Record for the following Facilities:

14 MGD Northglenn, CO Water Treatment Master Plan Update – Principal in Charge for the Northglenn water treatment master plan update. The project included a comprehensive performance and capacity evaluation of the treatment and solids processes and identification of performance limiting factors (PLFs). To address the PLFs, recommendations were included along with a 10-year capital improvement plan with opinions of probable costs. The master plan update was completed in May 2020 and the City will begin implementing recommended capital improvements later 2020.

45 MGD Soldier Canyon Filter Plant, Fort Collins, CO – Project Manager for the design to improve the backwash recycle and supply pumping improvements at the SCFP. The project began in July 2015 and was completed in December 2016. The project involved replacing and 20-year old pumps with a larger and more efficient pumps to provide a higher level of service and redundancy during peak filter backwash demands and increase recycle flows.

16 MGD North Table Mountain Water & Sanitation District WTP Improvements, Golden, CO – Project Manager for the Preliminary Design Improvements to the District's WTP. The Preliminary Design included a new administration / laboratory building, addition of new filters and building, addition of a second 8 MGD Actiflo Pretreatment process and building, disinfection improvements, backwash pond recovery improvements, demolition of the old filter / administration building, raw water valve vault improvements, and associated electrical, mechanical and plant process control upgrades

50 MGD Carter Lake Filter Plant, Berthoud, CO – Project Manager for the evaluation, development and permitting of a beneficial use plan to apply water treatment residuals on land areas for reclamation. The project also involved the permitting of the discharge of backwash water to surface water.

4.2 MGD WTP, Town of Berthoud, CO – Project Manager for the master planning, preliminary design and final design of 2.0 MGD expansion project to the Town of Berthoud water treatment facility. The project involved rehabilitation of existing clarifiers using plate settlers, addition of new filters new backwash waste pump station, future sludge drying area for clarifier sludge, corrosion control improvements, backwash recycle, new standby generator, and plant drain pump station.

38 MGD WTP, City of Loveland, CO – Project Manager with JVA for completing water treatment projects for transitioning the new water treatment manager that took the position that Mr. McGee held previous. The projects included final design review of the 38 MGD Water Treatment Plant Expansion, floc / sed rehabilitation / expansion with tube settlers and plate settlers, backwash and sludge ponds expansion / improvements, beneficial reuse of treatment residuals permitting on the grounds of the WTP, on-going Glade Reservoir and Big Thompson River water quality monitoring program.

2 MGD Water Treatment Plant, Mount Crested Butte Water and Sanitation District, CO – Technical Lead for the planning, design and permitting for a new membrane ultrafiltration plant replacing a 30 year old direct filtration plant. The project began construction in June 2020 and is being constructed adjacent to the existing WTP. The existing WTP will be repurposed for vehicle storage, backwash recovery and recycle (converting chlorine contact tank), and fuel storage. The project also includes construction of a new raw water pump station and intake structure for pumping raw water from East River to the pre-sedimentation basin.

City of Loveland, CO – Water Treatment Manager overseeing all personnel for water treatment operations, water quality and industrial pretreatment. In addition, functioned as project manager for all minor and major capital projects for the Loveland WWTP and WTP. John was involved with the preparation and implementation annual, 5- and 10-year CIP budgets and operation and maintenance budgets. John managed in-house designs and approval for the rehabilitation of sixteen (16) 2 MGD high-rate filters with new underdrains, air scour and media



Josh J. McGibbon

Vice President, Environmental Engineering

Education

B.S. Montana State University,
Civil Engineering, 2000

Registration

Professional Engineer:
Colorado, 2006

Professional Organizations

Water Environment Federation

Rocky Mountain Water
Environment Association –
Executive Committee

American Water Works
Association



Project Experience

Principal, Project Manager or Engineer of Record for the following Facilities:

North Table Mountain Water and Sanitation District Water Treatment Plant Expansion, Arvada, CO
Principal-in-Charge for the design of a water treatment plant expansion. The project included preliminary design, followed by a 60 percent design package and assistance with the Construction Manager at Risk (CMAR) procurement for the expansion. The project includes a new administrative building, metering vault improvements, expansion of the ballasted flocculation pretreatment process, new conventional filters, chemical system improvements, clearwell baffling, a new valve vault, backwash automation, new onsite wastewater treatment system (OWTS), heating ventilation and cooling (HVAC) upgrades, and electrical and controls upgrades.

Town of Erie Water Treatment Plant Solids Handling Facility, Erie, CO. Principal-in-Charge for the Design Build of the Town of Erie WTP Solids Handling Project. Performed pretreatment optimization of plate settler system. The WTP site has space constraints so mechanical dewatering will be utilized. The project includes solids storage tanks, dewatering equipment, PAC relocation and the addition of sodium permanganate as a preoxidant. The new equipment will be housed in a new building over the old WTP tanks that will be reconfigured for solids storage. The solids handling facility will be designed to handle the current 10 MGD capacity with expansion to 17 MGD.

Woodmoor Water and Sanitation District 2021 Water Capital Improvement Projects, Monument CO.
Principal-in-Charge for the design of the improvements to South Water Treatment Plant (SWTP), Central Water Treatment Plant (CWTP) expansion, and new Lake Pump Station, and new Well No. 21. The SWTP and CWTP are designed with oxidation and filtration for iron and manganese and both surface water and groundwater compliance. Each plant is designed to be converted seasonally from groundwater only to surface water. The projects included a new well and building, pretreatment building, filter replacement, chemical feed modifications and a new pump station.

Parker Water and Sanitation District Rueter-Hess Water Purification Facility Residuals Ponds Expansion, Parker CO. Principal-in-Charge for the water treatment residuals project. Project included the preparation of a technical residuals analysis for the treatment system including ballasted flocculation pretreatment and ceramic membrane filtration. Quantified the solids quantity and types to size the pond expansion project. Prepared design drawings and CDPHE and BDR.

Berthoud Water Treatment Plant Expansion, Berthoud, CO. Engineer of Record for the design and permitting of a 2.0 MGD expansion of the water treatment facility to 4.2 MGD firm capacity. Process upgrades include coagulation (chemical feed/dispersion), decreasing gradation of flocculation, two-train inclined plate settlers, two dual media filters with air scour, high service pump, and caustic corrosion control treatment prior to distribution. Improvements to the solids handling and backwash recovery system includes retrofitting an existing clarifier to a gravity thickener and upgrading a backwash holding basin to a residuals drying bed.

Pueblo West Metropolitan District Water Treatment Plant Expansion, Pueblo West, CO. Engineer of Record for the design of a 5.0 MGD expansion of the water treatment facility which will assure the District will have additional water supply capacity for current peak water demands. The water treatment expansion includes upgrades to filtration, disinfection, chemical feed, backwash basins, and backwash solids drying beds. The new facility will have a total capacity of 21 MGD.

Grand Junction Water Treatment Plant Improvements, Grand Junction, CO. Engineer of Record for the design and permitting of a filter upgrade to 16 MGD water treatment plant. The project includes replacement of existing filter underdrains and media as well as the addition of new blowers and air scour.

City of Idaho Springs Water Treatment Plant Improvements, Idaho Springs, CO. Principal-in-Charge for design and construction administration of numerous improvements to the existing 2.0 MGD microfiltration water plant. Project included improvements to the Clean in Place (CIP) system such as chemical dosing, piping, and automation and dedicated sewer system. Chlorine gas disinfection system was replaced with sodium hypochlorite feed and remote fill system. Automated coagulant dosing system for TOC reduction was installed.

Town of Crested Butte Water Treatment Plant Improvement Project, Crested Butte, CO QA/QC Manager for the design of a treatment plant expansion project for the Town's existing membrane filtration water treatment plant. The expansion project featured an increase in the system capacity from 1.25 MGD to 1.66 MGD, redesigned chemical pretreatment system to optimize treatment efficiency and improve system hydraulics, and a building expansion to improve operability and access to process equipment. As part of this effort, funding from DOLA and SRF was facilitated to finance the construction. The project was designed on an expedited schedule and went from the planning stages of a comprehensive performance evaluation to 100% design and permitting in under one year.

Leah C. Opitz, P.E.

Project Engineer, Environmental Engineering

Education

B.S. Colorado State University,
Civil and Environmental
Engineering course work,
2014-2016

B.S. University of Maryland,
Microbiology, 2009

Registration

Professional Engineer
Colorado, 2020



Project Experience

Project Engineer for the following Facilities and Utilities:

Carter Lake Filtration Plant, Berthoud, CO – Design Engineer for the Carter Lake Filter (CLFP) Backwash Irrigation Beneficial Use Plan (BUP) Project. The CLFP consists of two plants with a combined capacity of 50 MGD. The CLFP has historically stockpiled WTP residuals on-site. Leah prepared a beneficial use plan (BUP) and permit for the use of CLFP water treatment residuals as well as use of the filter backwash water for irrigation. The BUP was prepared in accordance with CDPHE criteria and the permit for use was recently approved by the CDPHE. As a result, the residuals can be used for land reclamation and construction fill at designated areas. In addition, the CLFP has minimized discharges to surface water from their backwash water ponds.

North Table Mountain Water and Sanitation District Water Treatment Plant Expansion, Arvada, CO –Design Engineer for the design of a water treatment plant expansion. The project included preliminary design, followed by a 60 percent design package and assistance with the Construction Manager at Risk (CMAR) procurement for the expansion. The project includes a new administrative building, metering vault improvements, expansion of the ballasted flocculation pretreatment process, new conventional filters, chemical system improvements, clearwell baffling, a new valve vault, backwash automation, new onsite wastewater treatment system (OWTS), heating ventilation and cooling (HVAC) upgrades, electrical and controls upgrades, and an evaluation of their sludge drying beds and residuals handling practices..

Water Treatment Plant Master Plan, City of Northglenn, CO – Project Engineer for the water treatment plant master plan for the City of Northglenn. The master plan included an evaluation of water quality and raw water resources and evaluation of existing infrastructure, which included analysis of treatment capacities for pretreatment, filtration, disinfection, chlorine contact, chemical systems and pumping systems. Improvements and operational modifications were estimated and cost estimates were developed for each capital improvement project for the next 10 years.

Soldier Canyon Filtration Plant, Fort Collins, CO – JVA was hired by SCFP to evaluate backwash supply (BWS) pumping to provide a higher level of service and redundancy during the peak water production periods. Currently the SCFP operates two (2) BWS pumps; the larger of the pumps used primarily during higher production periods and the smaller pump during lower production periods. During the peak production periods there is no backwash pump supply redundancy in a situation when the larger pump fails. The smaller BWS pump is unable to keep up with the backwashing demands required by the filters. JVA was tasked with designing a redundant pump that would replace the smaller pump to meet peak BWS demands and minimize electric demand charges of BWS pumping during the lower production periods. JVA conducted a detailed site visit to collect data for the existing process equipment and electrical service and controls. Following this phase, JVA prepared a hydraulic model based on the current peak day.

Solids Handling Facility, Town of Erie, CO – Design Engineer for a new solids thickening and dewatering process at the Town's microfiltration water treatment plant. The process is designed for ultimate WTP buildout of 16.65 MGD and an estimated 4,600 pounds of solids per day. The existing solids settling and pretreatment sedimentation processes were evaluated and improvements recommended to improve the concentration and consistency of solids from the vacuum systems. Design included a new gravity thickener, yard piping and vaults, 60,000 pound powder activated carbon silo and feed system, sodium permanganate system, centrifuge, site improvements, and a new building. The project was a Design/Build alternative delivery.

Berthoud Estates Wastewater Treatment Facility, Berthoud, Colorado – JVA completed a preliminary engineering report, site application, and wastewater utility plan based on ammonia discharge limits for an existing lagoon wastewater treatment plant. Alternatives evaluated included lagoon improvements, a new mechanical wastewater treatment plant, and several options for connecting to the Town of Berthoud sanitary sewer collection system. The recommended alternative was to construct a new mechanical facility, and Berthoud Estates has secured State Revolving Fund (SRF) to commence design. The design phase will include a hydraulic profile of the WWTF that will remain within the existing constraints from the stationary collection system and discharge location elevations.



Melissa L. Rhodes

Senior Engineer, Environmental Engineering

Education

M.S. Colorado School of Mines,
Environmental Science and
Engineering, 2010

B.S. Colorado School of Mines,
Environmental Engineering,
2010

Registration

Professional Engineer:
Colorado, 2015

Professional Organizations

RMWEA Industrial Pretreatment
Committee

Water Environment Federation
(WEF)



Project Experience

Senior Engineer for the following Facilities:

Town of Crested Butte Water Treatment Plant Improvement Project, Crested Butte, CO – Project engineer for the design of a treatment plant expansion project for the Town's existing membrane filtration water treatment plant. The expansion project featured an increase in the system capacity from 1.25 MGD to 1.66 MGD, redesigned chemical pretreatment system to optimize treatment efficiency and improve system hydraulics, and a building expansion to improve operability and access to process equipment. As part of this effort, funding from DOLA and SRF was facilitated to finance the construction. The project was designed on an expedited schedule and went from the planning stages of a comprehensive performance evaluation to 100% design and permitting in under one year.

North Table Mountain Water and Sanitation District Water Treatment Plant Expansion, Arvada, CO – Project engineer for the design and construction of a water treatment plant expansion. The project included preliminary design, followed by a 60 percent design package and assistance with the Construction Manager at Risk (CMAR) procurement for the expansion. The project includes a new administrative building, metering vault improvements, expansion of the ballasted flocculation pretreatment process, new conventional filters, chemical system improvements, clearwell baffling, a new valve vault, backwash automation, new onsite wastewater treatment system (OWTS), heating ventilation and cooling (HVAC) upgrades, and electrical and controls upgrades.

Berthoud Water Treatment Plant Expansion, Berthoud, CO – Project engineer for the design and permitting of a 2.0 MGD expansion of the water treatment facility to 4.2 MGD firm capacity. Process upgrades include coagulation (chemical feed/dispersion), decreasing gradation of flocculation, two-train inclined plate sedimentation, two dual media filters with air scour, high service pump, and caustic corrosion control treatment prior to distribution. Improvements to the solids handling and backwash recovery system includes retrofitting an existing clarifier to a gravity thickener and upgrading a backwash holding basin to a residuals drying bed. Personal responsibility also included corrosion control analysis of the finished water quality and mitigation recommendations by utilizing bench-scale testing and water chemistry modeling.

Town of Crested Butte Water Treatment Plant OCCTR Project, Crested Butte, CO – Project engineer for the design and permitting of an optimal corrosion control treatment evaluation. Project included water chemistry modeling to determine the best corrosion control approach.

Town of Erie Water Treatment Plant Solids Handling Facility, Erie, CO – Project engineer for the Design Build of the Town of Erie WTP Solids Handling Project. The Town of Erie has historically discharged WTP solids to the sanitary sewer system which caused issues with the biosolids handling at the WWTP due to PAC and other chemicals found in the residuals. The WTP site has space constraints so mechanical dewatering will be utilized. The project includes solids storage tanks, dewatering equipment, PAC relocation and the addition of sodium permanganate as a preoxidant. The new equipment will be housed in a new building over the old WTP tanks that will be reconfigured for solids storage. The solids handling facility will be designed to handle the current 10 MGD capacity with expansion to 17 MGD.

Confidential Client, Idaho – Project/process engineer for evaluation of alternatives, bench testing, and basic engineering for a mine site in Idaho undergoing remediation under CERCLA. An alternatives analysis was done to select between ballasted sand flocculation, the high density sludge (HDS) process, and microfiltration. Alternatives were developed for flows up to 2,900 gpm for the removal of arsenic, copper and cobalt. After the alternatives analysis was completed a Basic Engineering Report and $\pm 20\%$ cost estimate was provided.

Andrew C. Sparn

Project Manager, Environmental Engineering

Education

B.S. Civil Engineering,
Columbia University, School of
Engineering and Applied
Science, New York, NY, 2008

B.S. Physics, University of
Puget Sound, Tacoma, WA,
2006

Registration

Professional Engineer
Colorado (2015)

Professional Organizations

American Water Works
Association (AWWA)

Water Environment Federation
(WEF)



Project Experience

North Table Mountain Water Treatment Plant Expansion, Golden, CO Project Manager responsible for design, permitting, and construction administration of the NTM WTP expansion project. The existing 11 MGD WTP was designed and permitted for a capacity of 16 MGD. Water treatment improvements included the upgrade and replacement of the first generation Actiflo™ ballasted flocculation / sedimentation with the latest generation ballasted floc / sed system (Actiflo Turbo). The design also included multi-media filter expansion, baffling the chlorine contact basin to increase the baffling factor from 0.1 to 0.7 and achieve DOVE compliance, backwash recycle pumping improvements, and complete revamping of the primary and electrical service, ATS and standby generator, and SCADA / HMI / controls. In addition to process improvements, the project includes a chemical storage facility and an administration building with state certified water quality laboratory, operations laboratory, training center, kitchen, locker rooms, and operations offices. In addition, JVA prepared the RFP along at the 60 percent design documents to solicit qualified contractors for review and selection of a Construction Manager at Risk (CMAR) project delivery. JVA also assisted NTM in the preparation of a Department of Local Affairs (DOLA) Energy Impact Assistance Grant (EAIG) application. The District was awarded a grant of \$1,000,000 partly due to an innovative hydrothermal HVAC heat pump design to reduce carbon fuels required to heat and cool the administrative / lab building (Green Energy).

NTM Water Treatment Plant Evaluation and Capital Improvement Plan, Golden, CO Project Manager for a comprehensive performance evaluation and design to expand the District's WTP to a firm 16 MGD capacity. The CPE included assessing the condition and performance of each process, including raw water supply, pretreatment, chemicals, conventional filtration, clearwell/disinfection, and high service pumping. Capital improvements were identified and prioritized into a phased plan. The selected improvements include expanding the existing pretreatment process, constructing four new dual media filters, constructing a new chemical system building, baffling the clearwell, a new gravity to distribution option, and a new administration building with a state certified water quality control laboratory, operations lab, kitchen, offices and locker room.

Berthoud Water Treatment Plant Expansion, Berthoud, CO Project Manager responsible for the design and permitting of a 2.0 MGD expansion of the water treatment facility to 4.2 MGD firm capacity. Project work includes preliminary design and final design with bidding and construction anticipated for 2016 and 2017. Process equipment addition includes coagulation (chemical feed/dispersion), decreasing gradation of flocculation, two-train inclined plate sedimentation, two dual media filters with air scour, high service pump, and caustic corrosion control treatment prior to distribution. Improvements to the solids handling and backwash recovery system includes retrofitting an existing clarifier to a gravity thickener and upgrading a backwash holding basin to a residuals drying bed.

City of Lamar Main Street Potable Water Distribution, Lamar CO Project Manager for the design and construction administration for replacement of the potable water distribution system within the Main Street Corridor. The project included approximately 12,000 ft of 6", 8", and 12" PVC C900 distribution piping. Work also includes replacing the existing lead services with HDPE services to the businesses and residents along Main Street as well as transmission isolation valves, fire hydrants, and ground hydrants to facilitate the watering of the flower pots bordering Main Street. Main Street is also CO Highway 287 and the project was delivered in partnership with the City and CDOT. Project funding included a DWRP loan and DOLA EIAF grant. Phase 1 and Phase 2 were recently completed, and Phase 3 is anticipated to commence construction in Spring of 2021.

Pueblo West Metropolitan District Water Treatment Plant Expansion, Pueblo West, CO Project Engineer responsible for the design and construction administration of a 5.0 MGD expansion of the water treatment facility. Project work includes preliminary design, final design, and construction administration services. Process equipment includes prepackaged treatment units, a vertical turbine high service pump, surge anticipator valve, primary and secondary polymer chemical feed systems, chlorine gas disinfection system. The water treatment facility expansion incorporated modifications to the of the facility's filtration, chlorine gas, polymer chemical feeds, backwash waste handling process, and high service pump station expansion to meet future peak water demand of the District.

Zone 2 PRV Replacement Project, Westminster, CO Project Manager for the design of improvements to 11 existing pressure reducing valve vaults along 5 pressure zones. The project included abandoning or replacing potable water pipelines up to 30-inches diameter with pressures up to 165 psi. Pipeline materials included steel, ductile iron, PVC, and asbestos cement. Generated construction documents to demo four existing pressure reducing valve vaults, install two new pressure reducing valve and one air/vac release combination valve vaults, retrofit one pressure reducing valve vault, several direct bury valves, and ancillary potable water distribution pipeline improvements. Ancillary concrete flat work and asphalt was necessary.

Town of Lochbuie Water Treatment Plant Expansion, Lochbuie CO Project Manager responsible for master planning, permitting, and design for the Lochbuie water treatment facility. Project included expansion to 2.47 MGD peak capacity. The expansion includes two new RO skids and associated chemical feed systems, corrosion control caustic system, new chemical storage building for bulk storage and delivery of chlorine and caustic, new building exterior walls and roof to match the recently constructed Town Hall. The project is currently being solicited for CMAR delivery to qualified contractors.

City of Lamar Raw Water Transmission Line, Lamar, CO Project Manager for the design of 35,000 ft of 12" C-900 and 16" C-905 PVC raw water transmission line. Responsible for hydraulic calculations, pipeline alignment, tie-in details, and construction documents. Performed construction administration for the duration of the project, reviewing submittals, field engineering for below grade unforeseen conditions, and weekly construction meetings. Provided oversight for final commissioning, including tie-in and switchover, flushing, pressure testing and disinfection.

Todd Creek Metropolitan District Water Treatment Plant Expansion, Brighton, CO Project Manager for permitting, design, and preparation of construction documents for the expansion of the water treatment facility to 0.85 MGD. This project is ongoing and includes addition of a low pressure ultrafiltration and large capacity RO skid. Additional considerations include RO brine discharge permit, disinfection capacity evaluation and expansion, corrosion control, and potassium permanganate pre-treatment system. Andrew also managed the CMAR project delivery with the District and Contractor. Alternative delivery was needed to accelerate schedule and conform to a tight budget.

Idaho Springs Water Treatment Plant Upgrades, Idaho Springs, CO Project Engineer responsible for design and submittal of a Drinking Water Engineering Report for municipal drinking water treatment facility upgrades focused on increased membrane performance and compliance with disinfection byproduct regulations.

Rocky Ford Water Treatment Plant, City of Rocky Ford, CO. Project Superintendent for the Rocky Ford WTP funded by USDA Rural Development. Responsible for project submittals, scheduling, and day-to-day operations to complete the WTP within budget and on-time. Project included demolition of the piping, filters, and associated processes for the existing WTP. Construction of a new masonry building to house the two UV vessels capable of disinfecting 3.0 MGD. Constructed new multimedia filters, including filter underdrain blocks, air scour blower and appurtenances, control valves, filter media, FRP wash water troughs, filter controls and field instrumentation. Installed 10 stainless steel inclined plate settlers and collection troughs and supports. Installed a filter-to-waste pump, sampling system, chemical feed system and associated piping, electrical instrumentation and controls. Rehabilitated flash mix system, clarifiers and baffling system in the clear well.

Adam J. Teunissen, PE

Senior Project Manager, Structural Engineering

Education

B.S. Civil Engineering,
University of Wisconsin -
Platteville, 2003

Registrations

Professional Engineer:
Colorado
Wisconsin
Minnesota
Indiana

Professional Organizations

Structural Engineers
Association of Colorado
American Concrete Institute
Committee 350 Member

Awards

2011 ACEC Minnesota
Engineering Excellence Honor
Award, Structural Engineer:
New Wastewater Treatment
Facility at Willmar, Minnesota



Project Experience

Project Manager or Engineer of Record for the following representative projects:

North Table Mountain Water Treatment Facility, Golden , Colorado. Project Manager for the structural design of an expansion to the existing water treatment facility. Additions include the design of new administration space, new filter tanks, chemical and electrical building additions, and expansion to the secondary treatment process.

Idaho Springs Water Resource Reclamation Facility Design, Idaho Springs, Colorado. Project Manager for a new facility consisting of two 41 foot by 50 foot digester tanks and attached two story building for the headworks and dewatering processes. The first floor of the building is constructed of concrete walls and a concrete structural slab above supporting the 22 foot by 80 foot pre-engineered metal building on the second story.

Town of Milliken Water Treatment Building, Milliken, Colorado. Project Manager for the Structural design of a 62 foot by 58 foot treatment building and 18 foot by 21 foot by 13 foot deep concrete tank. The treatment building design consisted of a pre-engineered metal building over shallow concrete foundations. The tank is a cast-in-place concrete design covered with fiberglass plank grating supported by fiberglass beams.

Pueblo West States Avenue Lift Station (LS3), Pueblo West, Colorado. Lead structural engineer for the design of a 20 foot by 30 foot lift station and building. The structure consists of a 8 foot diameter precast concrete wet well, cast in place concrete foundations supported on drilled piers and a pre-engineered metal building.

Lochbuie Water Treatment Plant, Lochbuie, Colorado. Lead Structural Engineer for a small addition to the water treatment plant. The 13 foot by 20 addition expanded the existing pre-engineered metal building and was designed for chemical storage.

Hayden Water Treatment Plant, Hayden, Colorado. Lead Structural Engineer for a retrofit for new filters into and existing clarifier structure.

Berthoud Water Treatment Facility, Berthoud, Colorado. Lead Structural Engineer for an addition and remodel at the facility. Remodel work included the construction of new settling basins and flocculation tanks within the footprint of an existing clarifier. A 15 foot by 30 foot addition was added to the existing filter building to provide 2 additional filter tanks and associated pipe gallery.

Erie Water Treatment Plant, Erie, Colorado. Lead Structural Engineer for solids handling project. The project included the reuse of an existing concrete building foundation to support a new pre-engineered metal building. The completed building measured approximately 31 feet by 98 feet. Several structural modifications were made the existing structure to accommodate the pre-engineered metal building and it new purpose. In addition to the new building a 30-0" diameter cast-in-place concrete gravity thickener tank was designed. JVA teamed with Fischer Construction for this design build project.

Water Treatment Plant Improvements, Town of Rye, Colorado. Lead Structural Engineer for a small addition to and existing treatment building. The new addition (16 feet by 12 feet) was constructed of single wythe masonry walls and prefabricated roof trusses to match existing building construction.

Mt Crested Butte Wastewater Treatment Facility, Mt Crested Butte, Colorado. Lead structural engineer for addition of a new pre-engineered metal building (43 feet by 29 feet) over an existing UV treatment process. New cast-in-place foundations were designed to work with existing pipes and other existing interferences.



Ryan P. Wienpahl

Design Engineer, Environmental Engineering

Education

B.A. Anthropology/Spanish
University of New Mexico
Albuquerque, NM
2011

M.S. Civil Engineering
University of Colorado
Boulder, CO
2016

Registrations

Colorado CWP:
Class A Wastewater Operator
Class A Water Operator
Class A Ind. WW Operator
Class 3 Collect. Sys. Operator
Class 3 Dist. Sys. Operator

Professional Organizations

Rocky Mountain Water
Environment Association



Project Experience

Design Engineer for the following projects/facilities:

DoubleRL Ranch Water Treatment Systems Improvements, Ridgway, CO – Design Engineer for the design of a new water treatment system for a private ranch designed to meet a specific finished water quality profile. Responsible for process design, defining design criteria, equipment selection, project manual development, and drafting coordination. Also assisted in construction administration of the project, including facilitating the bidding process, coordinating with the contractor and equipment supplier, observing construction progress, and reviewing submittals.

Pueblo West Metro District Wastewater Treatment Plant Improvements, Pueblo West, CO – Assisted with construction administration for a project that involved installing a not-potable water reuse system in the PWMD wastewater treatment facility.

Town of Mead Wastewater Treatment Facility Improvements, Mead, CO – Design Engineer for the replacement of the existing grit pump and aerobic digester aeration grid. Responsible for equipment selection and design for replacement of the existing vertical, vacuum-primed grit pump with a horizontal, self-priming pump and for the replacement of the digester aeration grid.

Town of Winter Park LIFT Public Transit Operations Facility, Winter Park, CO – The Town of Winter Park is installing a new transit operations facility that will include a bus washing system for the public transportation buses of Fraser county. The installation will include the development of a new drinking water well and the inclusion of an Onsite Wastewater Treatment System. Design Engineer for the design of the water treatment system for the facility. Responsible for drafting the Basis of Design Report and the Technical, Managerial, and Financial Capacity Assessment, and other CDPHE permitting requirements for public water systems.

Idaho Springs WWTP Expansion, Idaho Springs, CO – Design Engineer assisting with construction administration of phase 2 of the project. The project involves retrofitting the existing two-tank Sequencing Batch Reactor with an AquaNereda Aerated Granular Sludge bioreactor from Aqua Aerobics. Responsibilities included site observations, payment application reviews, contractor coordination, and operator training.

Rifle Utility Maintenance, Capital, and Rate Study, Rifle, CO – Participated the development of a water and wastewater master plan and rate study. Specifically, assisted with the existing facilities evaluations, TDS mitigation research, and identification of priority projects for the Capital Improvement Plan.

Camp IdRaHaJe Preliminary Engineering Report, Baily, CO – Evaluated the existing utilities and helped prepare a Preliminary Engineering Report to communicate recommendations for wastewater treatment system improvements. The improvements were intended to address past CDPHE compliance excursions and more stringent impending permit limitations. Responsible for assessing potential treatment processes associated with CDPHE groundwater discharge permits to be recommended as alternatives for meeting compliance limitations.

Next Big Crop Greenhouse Modifications, Boulder County, CO – Design Engineer for the design of a greenhouse floor drain and drain water storage tank. The new design includes hauling offsite for disposal. Responsible for system design and coordinating sampling for use in identifying a hauler and wastewater treatment facility to receive the captured water from the greenhouse operation.

Pueblo West Metro District Platteville Boulevard Waterline Design, Pueblo West, CO – Design Engineer for the design and construction administration of a roughly 4,500-foot-long water distribution alignment along a section of Platteville Boulevard between N. Iliff Dr. and N. Canvas Dr. in Pueblo West. The project included hydrants, tie-ins, and appurtenances. Responsibilities included system design, site visits, coordination with other water districts and the Bureau of Reclamation for the crossing of sensitive utilities, submittal reviews, and payment application reviews.

Mt. Crested Butte Water and Sanitation District Hunter Ridge Annexation, Crested Butte, CO – Assisted with EPA Storm Water Management Model to develop design basis for re-routing segments of the Mt. Crested Butte sewer system away from a snow accumulation area so that year-round access to the manholes can be maintained.



Years of Experience: 11

Education

M.S., Colorado State University, 2012
Civil Engineering

B.S. Colorado State University, 2009

Major: Civil Engineering
Minor: Business Administration

Professional Registration

Professional Engineer, CO (#49500)
Professional Engineer, WY (#15481)
Professional Engineer, TX (#132228)

Professional Societies

American Society of Civil Engineers (ASCE)

Colorado Association of Geotechnical Engineers

North American Society of Trenchless Technologies

Certifications

OSHA 40-hr Health & Safety Training
MSHA 20-hr New Miner Training
Nuclear Density Gauge Certification

Lance Heyer is an associate and geotechnical engineer with Lithos Engineering and has 11 years of experience in the engineering industry. Mr. Heyer has over 7 years of specific experience designing and observing construction for water treatment plant related infrastructure.

PROJECT EXPERIENCE

Soldier Canyon Treatment Plant Expansion (Fort Collins, Colorado)

The Soldier Canyon Treatment Plant completed an approximately \$30M expansion throughout 2019 and 2020 to provide increased capacity up to 50 MGD. The expansion included the following specific infrastructure: flocculation and sedimentation building, chlorine contact tank building, soda ash silo and building, and associated piping. Lithos Engineering provided a geotechnical investigation and recommendations for the project. The treatment plant is located immediately west of Horsetooth Reservoir and extends onto the hillside or hogback geologic feature. The location of the plant creates unique geologic conditions where shallow bedrock consists of interbedded hard sandstones to softer, expansive claystones. Behavior of soil and bedrock conditions after completion of the improvements were considered in recommending foundation approaches for the various infrastructure. Mr. Heyer served as the project manager for the project and was the geotechnical engineer of record.

Chlorine Contact Basin (Fort Collins, Colorado)

In the fall of 2017, the City of Fort Collins completed construction of a new chlorine contact basin (CCB) at the water treatment facility. The basin was originally situated in a location requiring excavating an existing hogback, part of which was found to contain expansive bedrock. Lithos helped the City identify an alternative location that required little excavation and limited the risk of differential movement due to expansive bedrock substantially. In addition, the foundation for the CCB at the selected location was nontraditional and utilized an existing unreinforced concrete slab and approximately 3 feet of imported structural fill to provide adequate separation from expansive bedrock. Lithos' efforts in identifying the alternative site and considering various foundation alternatives saved the City approximately one million dollars on the approximately eight-million-dollar project. Mr. Heyer functioned as the project manager and engineer.

UV Building at the Drake Water Reclamation Facility (Fort Collins, Colorado)

The City of Fort Collins has decided to begin treating wastewater with UV light as opposed to chlorine due to recent difficulties in chlorine transportation. As part of the treatment upgrade, a UV building will be constructed partially over the existing Chlorine Contact Basin (CCB) at the Drake Water Reclamation Facility. For the project, Lithos provided a subsurface investigation and a geotechnical engineering report. Foundation recommendations considered the portion of the building situated over the existing foundation of the CCB and the need to extend the UV building outside of the existing CCB footprint. Although outdated by the current standard of practice, Lithos recommended the extensions of the building match the existing CCB foundation: drilled shafts extending a minimum of 5 feet into unweathered, expansive bedrock.

Aeration Basin at Drake Water Reclamation Facility (Fort Collins, Colorado)

Due to more stringent water treatment standards set by the state of Colorado, Fort Collins utilities decided to construct a new aeration basin to exceed the current requirements. The project included demolishing two existing but unused clarifiers and extending two aeration basins further to the

north. Mr Heyer was the project manager for the project with tasks including direct communication with the client, overseeing and coordinating the subsurface investigation, providing a geotechnical engineering report for subsequent structural design, and attending project design and construction meetings. In addition, due to the proximity of expansive bedrock to the base of the proposed basin and the integral nature of the basins southern wall to existing infrastructure, a deep foundation drilled shaft a structural floor approach was selected. Mr. Heyer provided geotechnical recommendations for drilled shaft design, and managed the geotechnical construction oversight program during drilled shaft installation.

Cogeneration Building at Drake Water Reclamation Facility (Fort Collins, Colorado)

In 2020, the City of Fort Collins completed construction of a Cogeneration Plant, a power generation system converting waste gas from the DWRf digesters into electricity. The main component of the plant was constructed as a slab-on-grade with a footprint of approximately 60- by 30-feet. A series of four generators located directly west of the plant required four separate slabs-on-grade with footprints of approximately 18- by 12-feet. Lithos Engineering provided a geotechnical investigation and design and construction recommendations for the project. Mr Heyer was the project manager for the project.

Pleasant Valley Forebay Sedimentation Facility (Larimer Country, Colorado)

The High Park Fire devastated the foothills immediately west of Fort Collins, CO. In order to limit suspended solids to acceptable levels, the City of Fort Collins Utilities and Northern Water proposed a sedimentation basin near eastern boundary of the Cache la Poudre River canyon. The basin is approximately 300 by 80 ft by 12 ft deep, includes a 36-in. high knee wall connected to a slab on grade system, a diversion structure, a baffle wall used to separate high- and low-sediment water, and a 40-mil thick geomembrane placed over a sloped (2H:1V) embankment. The basin will be emptied as needed to collect and dispose of deposited sediment. Mr. Heyer worked as a geotechnical engineer for the project, providing a design report and recommendations for geotechnical slope stability and seepage and for structural infrastructure and earthen embankment side slopes. The entire project, from planning through final construction, was completed in less than 5 months.

Boyd Water Treatment Plant Crane Pick Analysis (Loveland, Colorado)

During renovations for Loveland's Boyd Water Treatment Plant, the general contractor utilized a crane to lift various demolished aeration basin pieces. The crane was situated near the top of the existing below-grade basin walls. The basin was to be updated and as part of the larger renovations therefore basin wall integrity was to be maintained during and post construction. Mr Heyer worked with the general contractor to provide outrigger offsets and maximum pick weights to maintain existing basin wall stability.

Water Quality Lab (Loveland, Colorado)

Lithos Engineering provided a geotechnical investigation and geotechnical design and construction recommendations for an approximately 100' x 50' water quality lab at the Boyd Water Treatment Plant. The investigation included two test pits and two geotechnical borings. The foundation for the structure was designed and constructed as spread footings with an interior slab on grade. During construction, extensive fill with deleterious material was discovered immediately under the foundation footprint. Mr Heyer directed the removal of fill and recompaction of suitable material beneath foundations. Mr Heyer was the project manager for the project.

Storage Building (Loveland, Colorado)

Lithos Engineering provided geotechnical and structural engineering design services for a storage building at Loveland's water treatment plant. The storage building will be used to house equipment and contain a lab testing area. The geotechnical investigation provided information for the foundation conditions and utility trenches. Lithos engineering designed a foundation system consisting of shallow drilled piers and an internal building slab for the future pole barn structure. Mr Heyer was the project manager and engineer of record for the geotechnical and foundation components of the project.

STEVEN C KUEHR, PE

SENIOR CONSULTANT



Years of Experience: 40

Education

MS, Civil Engineering, Purdue University, 1985

BS, Civil Engineering, Purdue University, 1980

Professional Registration

Professional Engineer:

CO (0024369) & CA

Professional Societies

American Water Works Association

American Society of Civil Engineers

Colorado Association of Geotechnical Engineers

Rocky Mountain Water and Environment Association

Colorado Stone, Sand and Gravel Association

Mr. Kuehr is a Senior Consultant at Lithos Engineering. Mr. Kuehr specializes in geotechnical and tunnel engineering as it relates to water supply, sewerage, water resources, aggregate mining, roadway and bridge projects. He has technical expertise in tunnel engineering, foundation engineering, slope stability, expansive soils, ground modification, retaining walls, landslide evaluation and repair, embankment dam design and groundwater collection trenches and cutoffs constructed by the slurry trench method. He has 40 years of progressive engineering experience. He has performed and managed geotechnical engineering investigations for storm drain outfall projects, treatment plants, interceptor sewers, water transmission pipelines, water storage reservoirs, intake structures and pump stations.

RELEVANT PROJECTS

Griswold WPF Raw Water Structure – Phase 2, Aurora, Colorado

Principal-in-Charge and Project Manager for the new raw water vault at the Griswold Water Purification Facility. The subsurface conditions consist of eolian deposits and claystone/siltstone bedrock. Due to the presence of swelling claystone, a minimum 5 feet deep overexcavation with select fill backfill was recommended for the lower portions of the vault. There was a 72-inch raw water line adjacent to the vault. Provided geotechnical consultation including specification language and instrumentation recommendations regarding this issue. Reviewed Contractor's submittals for shoring and instrumentation.

Wemlinger WPF Sediment Drying Beds, Aurora, CO

Served as Principal-in-Charge and Project Manager. This project involved replacing the existing sediment drying beds with new, engineered sediment drying beds. The new concrete lagoons were constructed within the same footprint of the existing earthen lagoons. Provided recommendations for a permanent dewatering system which will operate as the water levels in nearby Quincy Reservoir approach the high-water level. Also provided foundation design recommendations for various structures and considerations for a tunneled waterline crossing beneath Quincy Avenue.

Colorado Springs Utilities SDS Water Treatment Plant, Colorado Springs, CO

Principal-In-Charge for Colorado Springs Utilities (CSU) Southern Delivery System's (SDS) 50 mgd water treatment plant and finished water pump station. The surface geology in the project area consists primarily of eolian soils extending to depths as much of 60-ft below existing ground surface. The eolian soils are hydro-collapsible and exhibit a collapse potential up to 6.3 percent. Design, construction and operation measures were necessary to mitigate the potential for water to collect below grade or to pond above grade. To mitigate the collapsible soils, the design-build team implemented Deep Dynamic Compaction techniques for ground improvement.

East Cherry Creek Valley Water & Sanitation District (ECCVWSD) Northern Water Supply Project, Reverse Osmosis Treatment Plant and Booster Pump Stations, Adams, Denver and Arapahoe Counties, CO

The ECCV Northern Supply Project includes a Reverse Osmosis Treatment Plant, High Service Pump Station, and North and South Booster Pump Stations and a 35-mile transmission line. The treatment plant, which includes a water storage tank, is located in the Beebe Draw geographic

area which contains thick and soft clayey soils; a condition that is unusual for the Denver area. Consolidation testing and settlement analyses indicated that approximately six inches of settlement could occur beneath the heavily loaded storage tank. Designed a temporary site surcharge to preload the tank area; this will preconsolidate the site such that settlement under the plant will be minimal. The surcharge consisted of compacted soil constructed to a height of 20-ft and included settlement monitoring platforms. Settlement monitoring indicates that settlement is occurring. The surcharge will be removed when settlement is complete so that the tank can be constructed.

Bellvue Water Treatment Plant Residuals Handling Facility, Bellvue, CO

Lithos staff performed subsurface geotechnical investigations and provided design recommendations for this project, which involved rehabilitation of existing sedimentation basins, construction of a thickening tank, a new pump station, and a new flow-equalization basin. Site conditions consisted of saturated fine- and coarse-grained alluvium overlying siltstone and sandstone bedrock. Mr. Kuehr served as Project Manager for this project.

Public Wholesale Water Supply Project Water Treatment Plant and Pipeline, Ellis and Russell Counties, KS

Performed geotechnical investigations and provided design recommendations for construction of a new water treatment facility in Russell County, Kansas. The proposed facility consisted of tanks and structures for administration, treatment, and pump housing, and residuals handling ponds. Mr. Kuehr evaluated the potential for collapse or dissolution within soils with high calcium carbonate content. He also provided recommendations for the residuals handling pond liners and for the on-site proposed pavements. Evaluated subsurface conditions and identified potential high groundwater and soft soils along the proposed pipeline alignment. Mr. Kuehr provided recommendations for trenchless and open cut crossings of streams and local drainages, paved county roads, highways, and existing active railroad. He also performed in-situ resistivity testing during site investigation to provide the corrosion engineer with design parameters.

87th Avenue and Wadsworth Boulevard Lift Station, Westminster, CO

Provided geotechnical engineering recommendations for a lift station, overflow storage tank and for several trenchless roadway crossings. The lift station required a deep excavation in a congested urban environment. Recommendations included over-excavation and replacement of expansive bedrock. Trenchless engineering recommendations were provided for the roadway crossings.

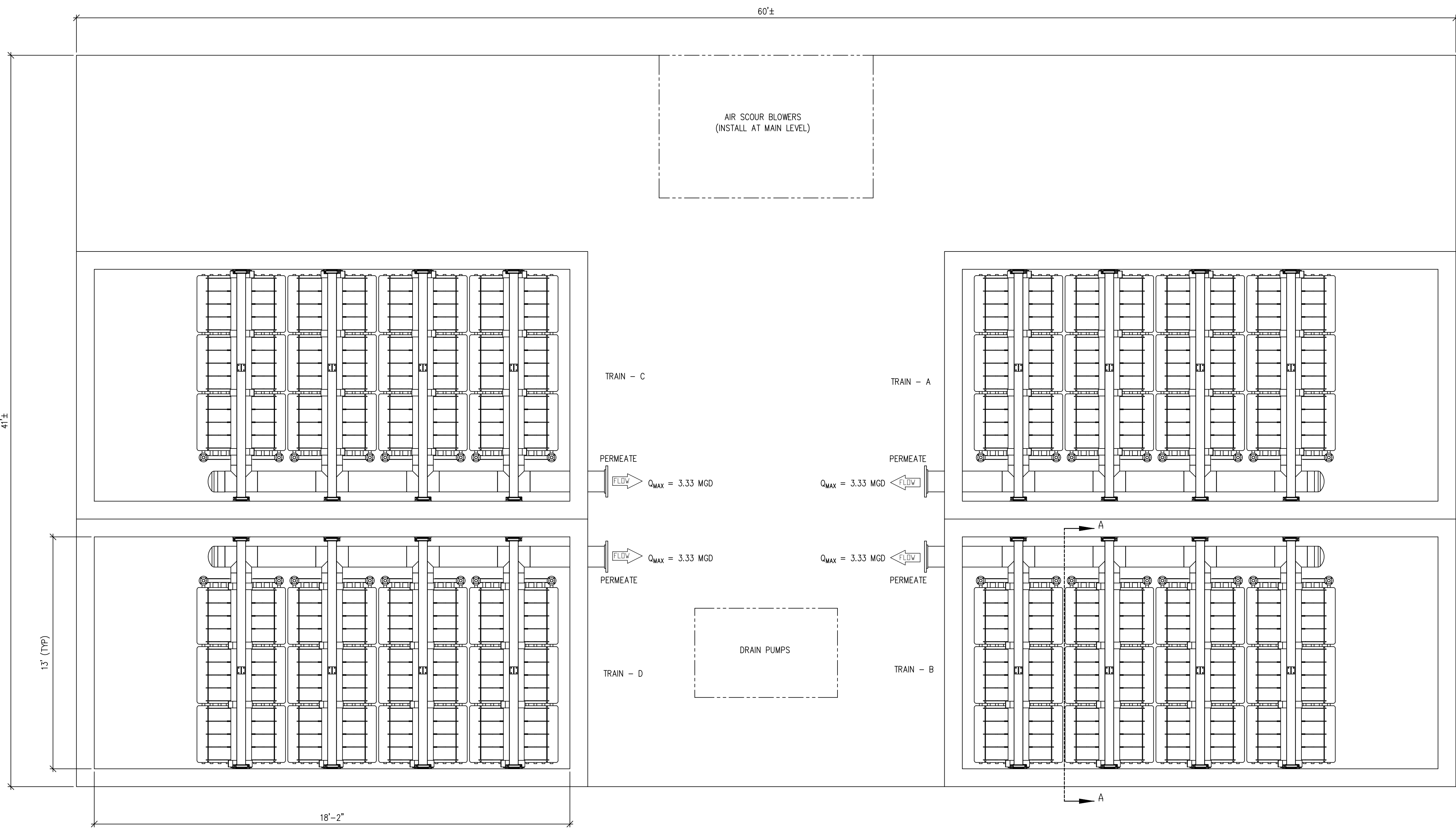
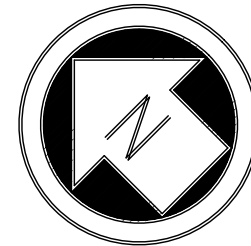
WWTP Headworks Improvements, Longmont, CO

The plant improvements included a new headworks building, a dry well pump station and grit chamber, a new influent flume with bottom, a new influent pumping station, a new Splitter Box and Control Valves structure and a new biofilter. the Firm performed three geotechnical borings and conducted geotechnical laboratory testing to supplement previous investigations at the site. We also performed field and laboratory corrosivity tests. Although some of the deeper structures were founded within claystone bedrock, we were able to demonstrate with appropriate laboratory testing that the bedrock had a low swell potential and that standard shallow foundations could be utilized.

Wemlinger Water Treatment Plant, Aurora, CO

Served as Principal-in-Charge and Project Manager. This project involved replacing the existing sediment drying beds with new engineered sediment drying beds. The new concrete lagoons will be constructed within the same footprint of the existing earthen lagoons. Provided recommendations for a permanent dewatering system which will operate as the water levels in nearby Quincy Reservoir approach the high water level. Also provided foundation design recommendations and considerations for a tunneled waterline crossing beneath Quincy Avenue.

EXAMPLE DRAWING SET: GRAVITY FLOW MEMBRANES



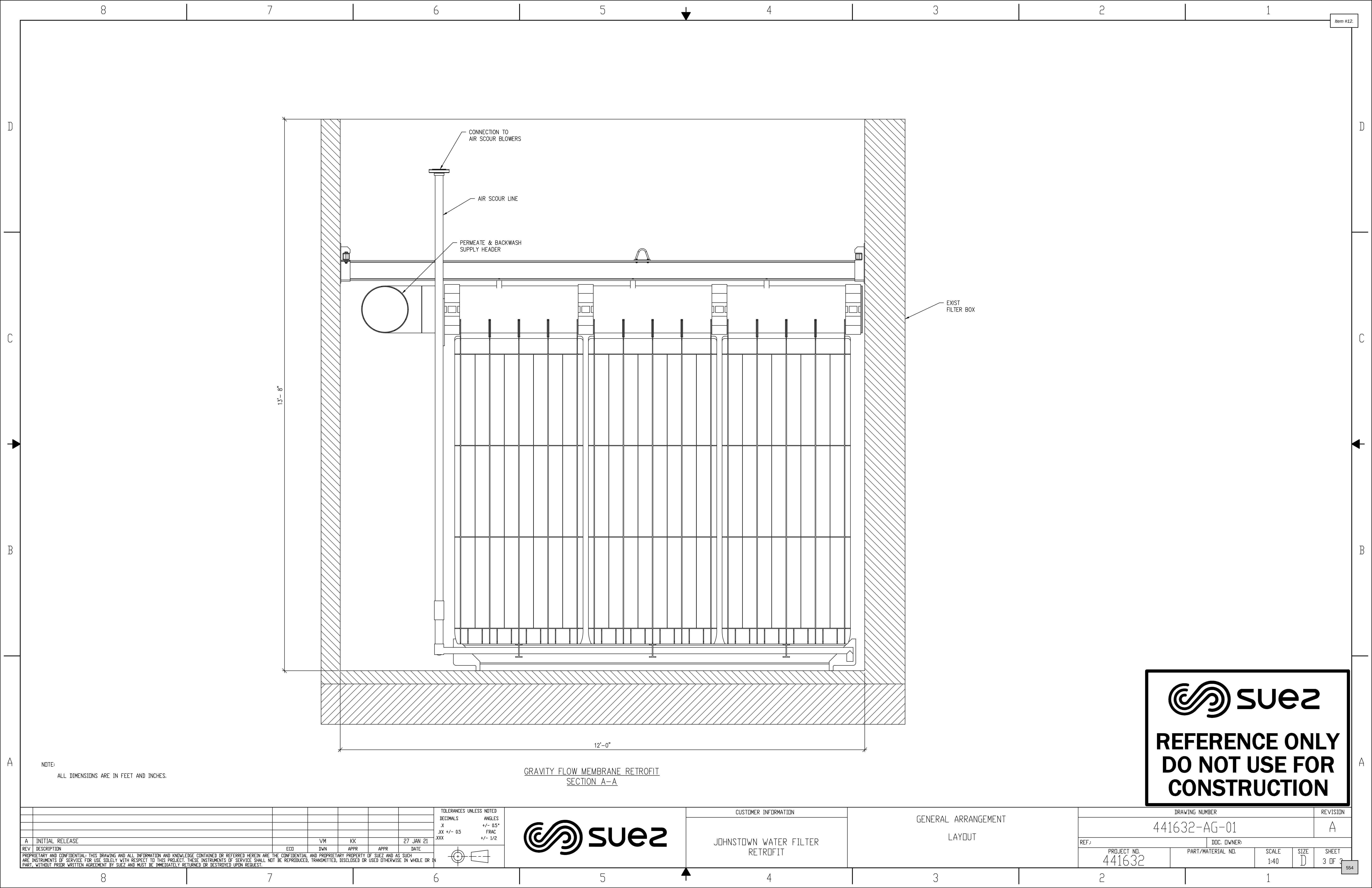
GRAVITY FLOW MEMBRANE RETROFIT
PLAN VIEW

NOTE:
ALL DIMENSIONS ARE IN FEET AND INCHES.



**REFERENCE ONLY
DO NOT USE FOR
CONSTRUCTION**

					TOLERANCES UNLESS NOTED				CUSTOMER INFORMATION		GENERAL ARRANGEMENT		DRAWING NUMBER		REVISION					
					DECIMALS	ANGLES							441632-AG-01		A					
					.X	+/- .05"														
					.XX +/- .05	FRAC														
					.XXX	+/- 1/2														
A INITIAL RELEASE		VM		KK	27 JAN 21			JOHNSTOWN WATER FILTER RETROFIT		LAYOUT		REF.:		DOC. OWNER:						
REV DESCRIPTION		ECO		DWN	APPR							APPR	DATE	PROJECT NO.		PART/MATERIAL NO.		SCALE	SIZE	SHEET
														441632				1:40	D	2 OF 3
PROPRIETARY AND CONFIDENTIAL: THIS DRAWING AND ALL INFORMATION AND KNOWLEDGE CONTAINED OR REFERRED HEREIN ARE THE CONFIDENTIAL AND PROPRIETARY PROPERTY OF SUEZ AND AS SUCH ARE INSTRUMENTS OF SERVICE FOR USE SOLELY WITH RESPECT TO THIS PROJECT. THESE INSTRUMENTS OF SERVICE SHALL NOT BE REPRODUCED, TRANSMITTED, DISCLOSED OR USED OTHERWISE IN WHOLE OR IN PART, WITHOUT PRIOR WRITTEN AGREEMENT BY SUEZ AND MUST BE IMMEDIATELY RETURNED OR DESTROYED UPON REQUEST.																				



NOTE:
ALL DIMENSIONS ARE IN FEET AND INCHES.

GRAVITY FLOW MEMBRANE RETROFIT
SECTION A-A



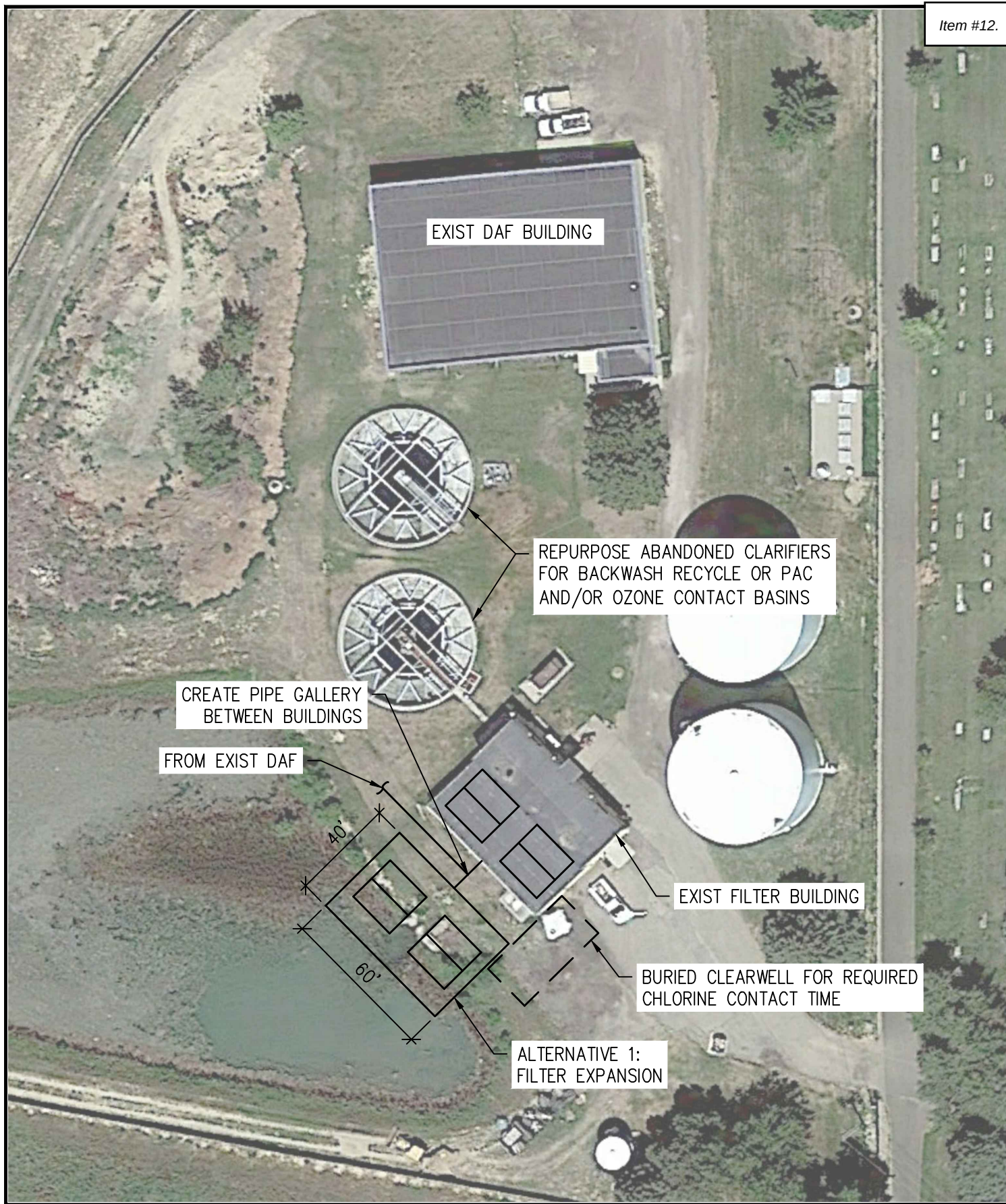
**REFERENCE ONLY
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CONSTRUCTION**

						TOLERANCES UNLESS NOTED			CUSTOMER INFORMATION	GENERAL ARRANGEMENT LAYOUT	DRAWING NUMBER		REVISION				
						DECIMALS	ANGLES				441632-AG-01		A				
						.X	+/- .05"				PROJECT NO.		PART/MATERIAL NO.				
						.XX +/- .05	FRAC				441632		SCALE				
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REV	DESCRIPTION	ECO	DWN	APPR	APPR	DATE
A	INITIAL RELEASE					27 JAN 21

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SITE LAYOUTS FOR FILTER ALTERNATIVES 1, 2, AND 3



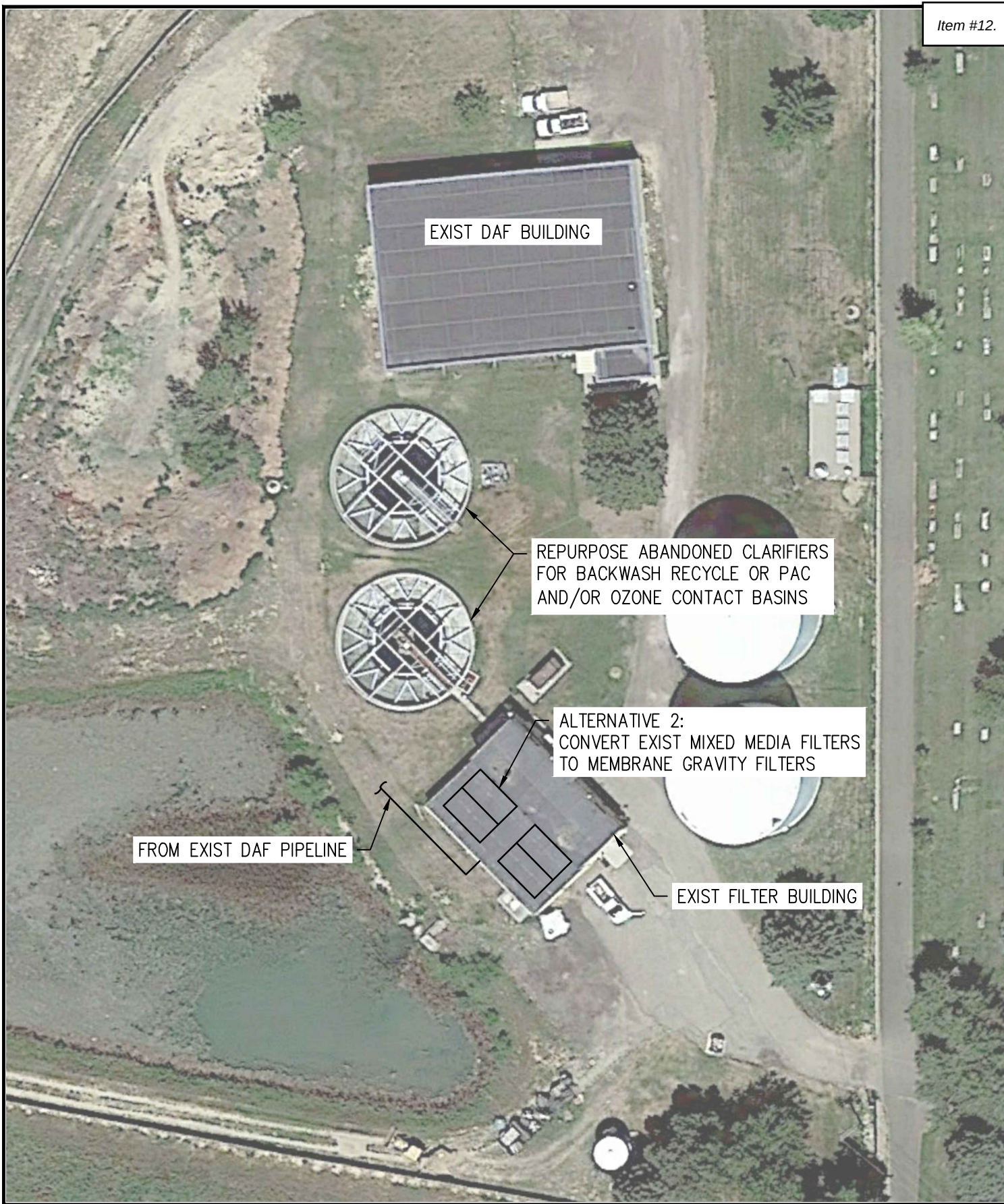
ALTERNATIVE 1

JOHNSTOWN WTP

FEB 2021



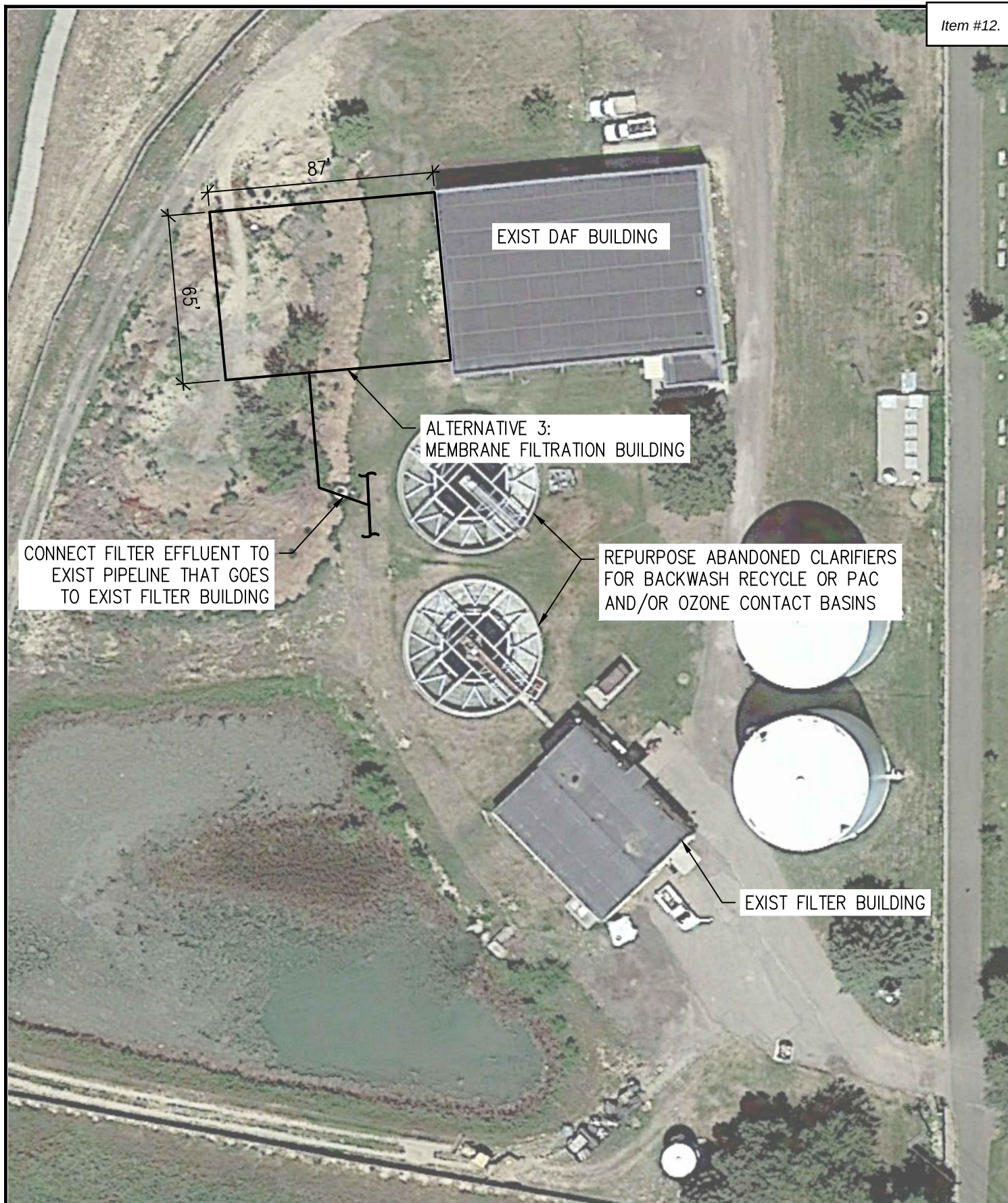
JVA, Inc.
1319 Spruce Street
Boulder, CO 80302
303.444.1951
www.jvajva.com
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Glenwood Springs • Denver



ALTERNATIVE 2 **JOHNSTOWN WTP** **FEB 2021**



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 Boulder, CO 80302
 303.444.1951
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ALTERNATIVE 3

JOHNSTOWN WTP

FEB 2021



JVA, Inc.
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Johnstown WTP Expansion from 5 to 10 MGD
2/5/2021

	Principal John P. McGee		Quality Assurance / Quality Control Lead Josh J. McGibbon		Project Manager Andrew C. Sparr		Lead Process Engineer Melissa L. Rhodes		Project Engineer Leah C. Opitz		Design Engineer Ryan Wienpahl		Structural Engineer Adam J. Teunissen		Senior Designer Jon C. Driggers		Administrative Victoria C. Austin		SUBTOTAL LABOR COSTS		EXPENSES					TOTAL COSTS (Rounded to Nearest 100)	
	\$184/hour		\$200/hour		\$152/hour		\$140/hour		\$124/hour		\$116/hour		\$156/hour		\$136/hour		\$104/hour		HRS	\$	PRINT	TRAVEL	SUB-CONSULTANTS	EXPENSE SUBTOTAL	LINE ITEM		
DESCRIPTION OF SERVICES	HRS	SUBTOTAL	HRS	SUBTOTAL	HRS	SUBTOTAL	HRS	SUBTOTAL	HRS	SUBTOTAL	HRS	SUBTOTAL	HRS	SUBTOTAL	HRS	SUBTOTAL	HRS	SUBTOTAL									
Project Initiation and Site Investigations																											
■ Kickoff Meeting and Facility Insepction	6	\$1,104	8	\$1,600	8	\$1,216	8	\$1,120	4	\$496	10	\$1,160	6	\$936	4	\$544	2	\$208	56	\$8,384		\$250		\$250	\$8,634		
■ Geotechnical Site Investigation and Report	2	\$368	1	\$200	1	\$152	2	\$280	1	\$124			6	\$936					13	\$2,060			\$13,070	\$14,377	\$16,437		
■ WTP Site Survey	1	\$184																	1	\$184			\$6,300	\$6,930	\$7,114		
SUBTOTAL	9	\$1,656	9	\$1,800	9	\$1,368	10	\$1,400	5	\$620	10	\$1,160	12	\$1,872	4	\$544	2	\$208	70	\$10,628		\$250	\$19,370	\$21,557		\$32,200	
Concept Design Phase																											
■ Task 1 - Filtration Evaluation and Selection for Expansion	6	\$1,104	6	\$1,200	16	\$2,432	24	\$3,360	32	\$3,968	60	\$6,960	16	\$2,496	40	\$5,440	4	\$416	204	\$27,376		\$400		\$400	\$27,776		
■ Tasks 2 & 3 - CT and Finished Water Pumping	2	\$368	2	\$400	16	\$2,432	18	\$2,520	24	\$2,976	36	\$4,176	4	\$624	6	\$816	2	\$208	110	\$14,520					\$14,520		
■ Tasks 4, 5 & 6 - Building Add, HVAC, and Electrical / Controls	2	\$368	2	\$400	12	\$1,824	6	\$840	8	\$992	8	\$928	20	\$3,120	12	\$1,632	2	\$208	72	\$10,312			\$5,500	\$6,050	\$16,362		
■ Task 8 - Code Compliance and Safety	1	\$184	1	\$200	4	\$608	4	\$560	4	\$496	6	\$696	4	\$624	2	\$272	2	\$208	28	\$3,848			\$2,100	\$2,310	\$6,158		
■ Task 9 - Value Added Ideas	4	\$736	2	\$400	8	\$1,216	12	\$1,680	14	\$1,736	18	\$2,088	4	\$624	4	\$544			66	\$9,024					\$9,024		
■ Weekly Conference Calls and Workshops	6	\$1,104	4	\$800	16	\$2,432	12	\$1,680	12	\$1,488	12	\$1,392	6	\$936	2	\$272	4	\$416	74	\$10,520			\$1,100	\$1,210	\$11,730		
SUBTOTAL	21	\$3,864	17	\$3,400	72	\$10,944	76	\$10,640	94	\$11,656	140	\$16,240	54	\$8,424	66	\$8,976	14	\$1,456	554	\$75,600		\$400	\$8,700	\$9,970		\$85,600	
30 Percent Preliminary Design Phase / CMAR Selection																											
■ 30% Percent Design Documents	4	\$736	4	\$800	40	\$6,080	60	\$8,400	70	\$8,680	80	\$9,280	50	\$7,800	120	\$16,320	4	\$416	432	\$58,512				\$12,900	\$14,190	\$72,702	
■ Weekly Conference Calls and Workshops	2	\$368	2	\$400	8	\$1,216	12	\$1,680	8	\$992	8	\$928	4	\$624					44	\$6,208			\$2,200	\$2,420	\$8,628		
SUBTOTAL	6	\$1,104	6	\$1,200	48	\$7,296	72	\$10,080	78	\$9,672	88	\$10,208	54	\$8,424	120	\$16,320	4	\$416	476	\$64,720				\$15,100	\$16,610		\$81,300
60 Percent Design Phase and BDR																											
■ 60 Percent Design Documents	8	\$1,472	8	\$1,600	40	\$6,080	90	\$12,600	110	\$13,640	140	\$16,240	90	\$14,040	140	\$19,040	2	\$208	628	\$84,920		\$120	\$14,400	\$15,960	\$100,880		
■ Basis of Design Report	2	\$368	2	\$400	12	\$1,824	8	\$1,120	40	\$4,960	40	\$4,640						2	\$208	106	\$13,520				\$13,520		
■ Responses to CDPHE RFIs	1	\$184	2	\$400	3	\$456	12	\$1,680	52	\$6,448	60	\$6,960						2	\$208	132	\$16,336				\$16,336		
■ Technical Specifications	2	\$368	4	\$800	16	\$2,432	32	\$4,480	40	\$4,960	48	\$5,568	16	\$2,496				2	\$208	160	\$21,312		\$2,200	\$2,420	\$23,732		
■ Design Workshops	8	\$1,472	4	\$800	10	\$1,520	8	\$1,120	8	\$992	6	\$696						3	\$312	47	\$6,912		\$220	\$220	\$7,132		
■ OPC	2	\$368	2	\$400	6	\$912	6	\$840	4	\$496	2	\$232	8	\$1,248				2	\$208	32	\$4,704				\$4,704		
SUBTOTAL	23	\$4,232	22	\$4,400	87	\$13,224	156	\$21,840	254	\$31,496	296	\$34,336	114	\$17,784	140	\$19,040	13	\$1,352	1105	\$147,704		\$340	\$16,600	\$18,600		\$166,300	
CMAR Selection, VE/GMP, and Construction Documents																											
■ CMAR RFQ ad Contractor Selection	8	\$1,472	8	\$1,600	24	\$3,648	16	\$2,240	16	\$1,984	20	\$2,320	12	\$1,872				4	\$416	108	\$15,552			\$3,500	\$3,850	\$19,402	
■ 100% Construction Drawings	7	\$1,288	6	\$1,200	40	\$6,080	70	\$9,800	96	\$11,904	132	\$15,312	94	\$14,664	180	\$24,480			2	\$208	627	\$84,936		\$120	\$3,500	\$3,970	\$88,906
■ 100% Construction Specifications	4	\$736	2	\$400	10	\$1,520	24	\$3,360	32	\$3,968	48	\$5,568	36	\$5,616				2	\$208	158	\$21,376			\$1,500	\$1,650	\$23,026	
■ Finalize GMP and Design Workshops	4	\$736	2	\$400	4	\$608	4	\$560	6	\$744	4	\$464	4	\$624	2	\$272	2	\$208	32	\$4,616			\$16,500	\$18,150	\$22,766		
SUBTOTAL	23	\$4,232	18	\$3,600	78	\$11,856	114	\$15,960	150	\$18,600	204	\$23,664	146	\$22,776	182	\$24,752	10	\$1,040	925	\$126,480		\$120	\$25,000	\$27,620		\$154,100	
Construction Administration - Office																											
■ Submittals, Pay Apps, RFIs, WCDs,	8	\$1,472	2	\$400	40	\$6,080	64	\$8,960	100	\$12,400	150	\$17,400	80	\$12,480	44	\$5,984	6	\$624	494	\$65,800		\$4,400	\$3,500	\$8,250	\$74,050		
■ Record Drawings	3	\$552	4	\$800	10	\$1,520	40	\$5,600	16	\$1,984	40	\$4,640	16	\$2,496	78	\$10,608			207	\$28,200			\$1,500	\$1,650	\$29,850		
SUBTOTAL	11	\$2,024	6	\$1,200	50	\$7,600	104	\$14,560	116	\$14,384	190	\$22,040	96	\$14,976	122	\$16,592	6	\$624	701	\$94,000		\$4,400	\$5,000	\$9,900		\$103,900	
Construction Administration - Field																											
■ Site Observations	12	\$2,208	12	\$2,400	80	\$12,160	100	\$14,000	100	\$12,400	240	\$27,840	80	\$12,480	24	\$3,264			648	\$86,752			\$16,000	\$17,600	\$104,352		
■ Progress Meetings	4	\$736	4	\$800	60	\$9,120	60	\$8,400	48	\$5,952	64	\$7,424	40	\$6,240					280	\$38,672					\$38,672		
■ Start-up, Training and Warranty	2	\$368	2	\$400	40	\$6,080	34	\$4,760	24	\$2,976	44	\$5,104						146	\$19,688		\$3,400	\$8,000	\$12,200	\$31,888			
SUBTOTAL	18	\$3,312	18	\$3,600	180	\$27,360	194	\$27,160	172	\$21,328	348	\$40,368	120	\$18,720	24	\$3,264			1074	\$145,112			\$24,000	\$29,800		\$174,900	
																										TOTAL	\$798,300

- Notes:
- 1

Fee is based on a construction budget of \$8.0M and CMAR Delivery
- 2

Scope and fee based on Selection of either Alt #1 - GFM or Alt #2 Mixed Meida Filter Expansion
- 3

Construction Administration Fees based on 14 month construction schedule and once per week site visits and periodic rebar inspections
- 4

Exclusions: LTR Raw Water Pipeline Design and Construction, geotechnical and material testing during construction



Town of Johnstown

INFORMATIONAL ITEMS ONLY

These items are for Town Council information. Any of these items can be discussed if a Councilmember desires.

The Community That Cares

www.TownofJohnstown.com

P: 970.587.4664 | 450 S. Parish Ave, Johnstown CO | F: 970.587.0141

Healthy Kids. Healthy Economy. Healthy Community.



LARIMER THRIVE BY FIVE

Without accessible, affordable child care and early childhood education, Larimer County will experience:

REDUCED ECONOMIC OUTPUT.

10% of Colorado residents quit or don't take a job because of childcare challenges. During the pandemic this challenge was heightened and families in Larimer County reduced their work by 42% due to lack of childcare. Unreliable childcare and early education leads to work absences and can remove talented employees from the workforce.

\$8.3 Billion

WAGES LOST BY U.S. FAMILIES EACH YEAR DUE TO LACK OF CHILDCARE.

\$3 Billion

LOST REVENUE FOR U.S. BUSINESSES DUE TO EMPLOYEE ABSENTEEISM FROM CHILDCARE ISSUES.

WORSE OUTCOMES FOR KIDS.

A child that is in an affordable and quality early education program will be better prepared for kindergarten, read earlier, be more likely to graduate high school and attend college, earn a higher wage, live a healthier life and have better developed life skills.

↑ Increased Healthcare costs

↑ Increased crime

↓ Decreased earnings

↑ Increased unemployment

↑ Increased remedial education

**\$12,000
A YEAR**

The average cost Larimer County families pay a year per child for childcare, often \$16,000 for an infant.

**40%
SHORTAGE**

in childcare access for families with preschoolers unable to find care due to lack of access. 75% with infants cannot find care.

37% OF INCOME

based on an average median HHI of \$64,919
spent on childcare for a family of four with two kids under the age of 5 and area.

Tackling the Challenge.



Provide affordable, quality early childhood education & care to children in Larimer County.

LARIMER THRIVE BY FIVE

STUDYING THE PROBLEM.

- » In 2008, United Way of Larimer County and the Coloradoan conducted a community-wide assessment of poverty in Larimer County and determined the absence of affordable childcare was the single greatest deterrent to a family's self-sufficiency.
- » In 2018, three local groups (Be Ready, Directing Change, and the Early Childhood Council of Larimer County) collaborated to write a white paper, A Workforce Strategy and Major Economic Driver: Child Care in Larimer County, highlighting two primary barriers for families seeking to find childcare so they can work: first, the cost of childcare & second, the lack of licensed childcare openings.
- » In January of 2021, the ECCLC launched an education campaign around the need for and benefits of quality early childhood education called, Larimer Thrive by Five.

The problem hasn't gone away: It's just gotten worse.

- » There are an estimated 7,000 children under the age of 5 in Larimer County who do not have access to licensed child care.
- » There are only two nonprofit child care centers in Larimer County providing infant care. Early childhood support and services must be an essential part of Larimer County.

OPPORTUNITIES FOR A STRONGER FUTURE.

Communities across Colorado – Aspen to Telluride, Denver to Summit County – and across the country have successfully secured dedicated public funding through ballot initiatives. They have invested those resources in a variety of programs such as:

- › tuition assistance
- › help working families cover the cost of care
- › professional development and wage support for early educators
- › capital costs to expand and improve child care and preschool facilities

These initiatives have both the political support of voters and a track record of success in supporting working families and preparing kids for success in school and life.

STAY UPDATED.

A collaborative of community leaders are pursuing a dedicated local funding source for early care and education priorities, potentially for the November 2021 ballot.

**Visit [LarimerThriveByFive.org](https://www.LarimerThriveByFive.org)
sign up for our newsletter to stay engaged & learn more!**

Background

Earlier this year, the Early Childhood Council of Larimer County, in partnership with United Way of Larimer County, convened a Steering Committee of community leaders to shape and inform a strategic viability assessment project to determine whether and when to pursue a ballot measure to raise dedicated, local public funding for early childhood programs in Larimer County. Over four months, the Committee executed a thorough due diligence process with guidance and support from a professional consulting team with extensive experience in early childhood policy and state and local ballot measures in Colorado. Based on this due diligence process, it is the ***recommendation of this group that the Larimer County Board of County Commissioners refer a county-wide sales & use tax increase question to voters at the November 2021 election for the purpose of supporting early care and education programs in Larimer County.***

Frequently Asked Questions

What are the details of the recommended ballot initiative?

The Steering Committee is recommending that the Larimer County Board of Commissioners:

- Refer a question to the November 2021 ballot
- The proposal should ask voters to increase the county-wide sales and use tax by 0.25% (25 cents on a \$100 purchase), which will generate an estimated \$17M / year in revenue
- The measure should specify that revenue generated by this tax may be used for four purposes:
 - Subsidize the cost of child care and preschool programs for Larimer families with children from birth to age 5
 - Invest in the early childhood system to expand capacity and improve quality
 - Conduct thorough evaluations to measure the impact of the program
 - Pay for administration of the program with a reasonable cap in place to ensure most money is put directly into programs and services
- The measure should include a 20-year sunset provision
- The County should partner with the Early Childhood Council of Larimer County, a community-based non-profit organization with expertise in early childhood and trusted relationships across the county, to administer, manage and advise on the distribution of funds
- These funds should be audited regularly and subject to transparency and accountability measures associated with publicly funded programs and services

Why is this needed?

Larimer County is facing a crisis in early childhood care and education. Based on 2019 estimates, licensed capacity for child care is only 25% of projected demand for infants and toddlers, and only 64% for preschool age children. The ECE workforce crisis has intensified during the pandemic. Some providers have closed, while others are struggling to meet expenses while many parents are caring for their children while working from home.

This challenge is not new and recognition of it as a major barrier to the economic and social success of our community is widely held. The [*Talent 2.0 Regional Workforce Strategy*](#) report released in 2017, identified lack of access to child care as one of three key barriers to workforce recruitment and retention in Larimer County. And, as such, the Larimer County Board of County Commissioners made expanding access to quality child care

a key priority of the County's [2019 – 2023 strategic plan](#) -- Goal 2, objective 3: *“By 2023 Larimer County public and private partners, will increase quality child care capacity by 50% by identifying and implementing investment strategies in the areas of workforce, infrastructure and funding that result in long-term systems change.”*

Why now? What makes 2021 the year to go to the ballot with this proposal?

Larimer County has struggled with child care access and affordability for more than a decade. The need has been felt by families with young children and acknowledged as a community issue by “grass-top” leaders for years. However, the Covid-19 crisis highlighted this challenge more broadly and made it a top-of-mind issue for voters and leaders, locally and nationally. There is heightened public awareness of the challenge and a sense of urgency to address it as part of our community’s pandemic recovery. We believe there is a unique opportunity to secure local, dedicated funding while the issue is top-of-mind for voters. Further, we know from public opinion research that there is a path to victory with the anticipated 2021 Larimer County electorate and do not believe that our chances for success would be greater in a different year.

What about new state and federal investments in child care and preschool? Is a local tax necessary?

The need for public investment across the early childhood spectrum, birth to age 5, is huge and requires sustained funding. Federal recovery dollars are short-term, time-limited investments and the new state program funded by Prop EE (approved Nov 2020, projected to be launched in 2023), will provide support to families for the preschool year before Kindergarten only. New, dedicated and sustained local funding will allow our county to leverage state and federal investments and maximize benefits for our community.

How will this investment impact child care and preschool access and affordability in Larimer County?

If ultimately successful, this measure will roughly double our local investment in early childhood programs and services, allowing the county to address:

- Affordability of care through tuition subsidies or credits that will reduce the cost of child care and preschool, with the greatest subsidies going to the lowest income families facing the greatest cost burdens
- Access to care by making investments in physical and human capital that will expand child care and preschool offerings in the county
- Quality of care by supporting child care and preschool providers to improve their programs
- Workforce development by supporting continuing education and training for early childhood educators

While there is no “silver-bullet” solution to the child care and preschool challenges our community faces, we are confident that this investment will make a meaningful impact in both expanding capacity of the system and reducing the cost burden for families.

Who was involved in developing this proposal?

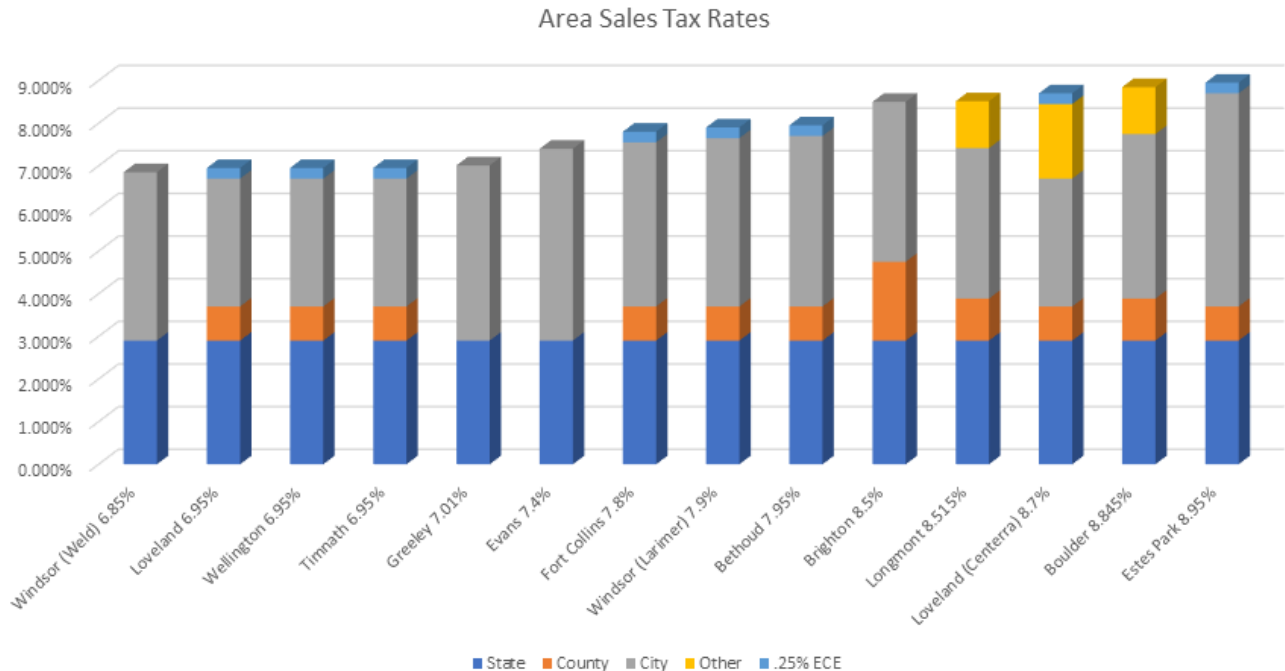
A Steering Committee of 17 Larimer County leaders participated in a four-month process to develop this proposal. Steering Committee members included:

- Early childhood experts
- Non-profit leaders
- Business leaders
- County & municipal government officials and administrators
- Academics

Members of the Committee live in Estes Park, Fort Collins and Loveland and many have a county-wide perspective. Additionally, we gathered input and feedback about the need for public investment, potential funding sources and priorities for revenue allocation through robust public opinion research program.

If referred and approved, will this new tax take our sales tax out of line with surrounding communities?

The short answer is: No. Sales and use taxes are imposed by the state, county and municipality, so there is some variation among communities in the region today and that will continue if this new tax is imposed for Larimer County communities. However, when you look at the sales tax rates of the major communities in the region, they are generally aligned and this modest increase will not substantially impact the overall tax rate. The below table shows area sales tax rates with the light blue bar at the very top being the new 0.25 percent ECE tax.



Is this proposal politically viable?

Yes. This proposal is politically viable. Public opinion research conducted in April and May of 2021 demonstrates that there is a path to victory with the November 2021 Larimer County electorate. Further, local leaders have built a robust and realistic campaign budget and plan that will enable us to communicate with targeted voters in a smart and sophisticated way about the need for and details of this proposed investment. While the outcome of a ballot measure is never guaranteed, experienced campaign professionals and local leaders are confident that this is the right time and the right proposal to bring to voters.

Dedicated Larimer County Funding for Early Childhood Exploratory Work

JUNE 2021



Final Report

Original Report Prepared for: Christina Taylor, Early Childhood Council of Larimer County

Report Contents Prepared by: Cody Belzley, Common Good Consulting, LLC

EXECUTIVE SUMMARY

Earlier this year, Early Childhood Council of Larimer County, in partnership with United Way of Larimer County, convened a Steering Committee of community leaders to shape and inform a strategic viability assessment project to determine whether and when to pursue a ballot measure to raise dedicated, local public funding for early childhood programs in Larimer County.

The Committee completed a thorough due diligence process with guidance and support from a professional consulting team with extensive experience in early childhood policy and state and local ballot measures in Colorado.

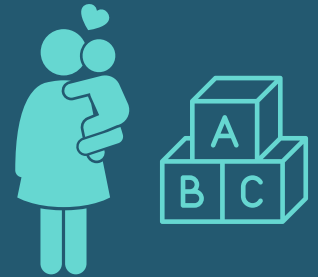
Based on this due diligence process, **it is the recommendation of this group that the Larimer County Board of County Commissioners refer a county-wide sales & use tax increase question to voters at the November 2021 election for the purpose of supporting working parents, children, and early care and education programs in Larimer County.**

Specifically, 14 of 17 members of the Steering Committee voted to support:

- A question on the November 2021 ballot
- To increase the **county-wide sales and use tax by 0.25%** (25 cents on a \$100 purchase), which will **generate an estimated \$17M / year in revenue**
- The measure should specify that revenue generated by this tax may be used for four purposes:
 - **Subsidize the cost of child care and preschool programs for families with children from birth to age 5**
 - **Invest in the early childhood system to expand capacity and improve quality**
 - **Conduct thorough evaluation to measure the impact of the program**
 - **Pay for administration of the program with a reasonable cap in place**

\$17

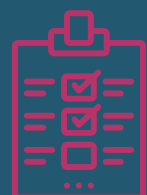
MILLION / YEAR



SUBSIDIZED CHILD CARE AND PRESCHOOL



WORKFORCE DEVELOPMENT + INFRASTRUCTURE



EVALUATION + ADMINISTRATION

EXECUTIVE SUMMARY (CONT.)

- **The measure should include a 20 year sunset provision**
- The County should partner with Early Childhood Council of Larimer County, a community-based non-profit organization with expertise in early childhood and trusted relationships across the county, to administer, manage and advise on the distribution of funds
- **These funds should be audited regularly and subject to typical transparency and accountability measures**
- Of the three members of the Steering Committee who did not endorse this recommendation:
 - Two supported the concept of public investment in early childhood, as well as the details of this specific recommendation, but did not support asking voters for additional taxes in 2021, and instead favored waiting until 2022.
 - One dissenting member supported the idea of a local tax for early childhood, but opposed the details of this recommendation, citing that \$17M per year in dedicated revenue was insufficient to meet demand and, as such, this member could not support a partial solution.



**TO PARTNER WITH COUNTY TO
ADMINISTER, MANAGE AND ADVISE
ON DISTRIBUTION OF FUNDS**

Context for Work

Larimer County is facing a crisis in early childhood care and education. Based on 2019 estimates, licensed capacity for child care is only 25% of projected demand for infants and toddlers, and only 64% for preschool age children. The ECE workforce crisis has intensified during the pandemic. Some providers have closed, while others are struggling to meet expenses while many parents are caring for their children while working from home.

This challenge is not new and recognition of it as a major barrier to the economic and social success of our community is widely held. The Talent 2.0 Regional Workforce Strategy report released in 2017, identified lack of access to child care as one of three key barriers to workforce recruitment and retention in Larimer County. And, as such, the Larimer County Board of County Commissioners made expanding access to quality child care a key priority of the County's 2019 – 2023 strategic plan -- Goal 2, objective 3: *"By 2023 Larimer County, with public and private partners, will increase quality child care capacity by 50% by identifying and implementing investment strategies in the areas of workforce, infrastructure and funding that result in long-term systems change."*

Currently, the early childhood system in Larimer County is funded by a patchwork of state and federal public funding sources, as well as private philanthropic investments and fee-for-service revenue paid by families. Many communities, across Colorado and the country, with a similar funding mix have sought and secured dedicated local public funding to address capacity shortages, make services more affordable for families and to improve quality.

Understanding the successful precedent of these local public funding initiatives, Early Childhood Council of Larimer County and United Way of Larimer County teamed up to explore the viability of such an initiative in Larimer County.

TIMELINE

Item #14.

January 2021

- Interviewed and retained the consulting team to design and execute this work
- Developed project plan & timeline
- Secured grant funding to support this viability assessment work

February 2021

- Identified and recruited a diverse Steering Committee of 17 community leaders from all parts of Larimer County to shape and inform this work
- Researched early childhood initiatives in other communities and recent tax measures in Larimer County and developed case studies

March 2021

- Convened the Steering Committee for the first of five meetings
- Compiled data and research on
 - Supply and demand for early childhood services
 - Existing public and private funding sources
 - Possible tax sources and available revenue
- Retained a public opinion research firm and developed the research plan

April 2021

- Developed and refined various scenarios for generating and allocating local tax revenue
- Conducted qualitative public opinion research via In-Depth Interviews with 13 “grasstops” community leaders from across the County
- Conducted qualitative public opinion research via online QualBoard discussion with 28 likely November 2021 voters from Larimer County

May 2021

- Continued to refine scenarios for generating and allocating local tax revenue
- Conducted quantitative public opinion research via poll of 402 likely November 2021 voters from Larimer County

June 2021

- Held the last of five meetings with the Steering Committee to determine recommendations

THE TEAM

STEERING COMMITTEE

The Steering Committee consisted of 17 community leaders from Larimer County, including representatives from: local government, business, direct-service non-profits, early care & education and K-12 education. Steering Committee members live in Estes Park, Fort Collins, Loveland and Wellington.

- Christina Taylor, CEO, Early Childhood Council of Larimer County
- Deirdre Sullivan, President & CEO of United Way of Larimer County
- Ann Hutchison, CEO of Fort Collins Chamber
- Laurie Stolen, Director of Larimer County Behavioral Health
- Gloria Kat, Director of La Familia Family Resource Center (Child Care Provider)
- Kristin Stephens, Commissioner, Larimer County Board of Commissioners
- Lise Youngblade, Colorado State University Dean, College of Health and Human Sciences
- Heather O'Hayre, Larimer County Dept. of Human Services Director
- Michael Moon, Director of Estes ECE
- Martha Giron, Bilingual Community Organizer with Colorado Trust
- and former early childhood educator
- Kathi Wright, Councilmember, Loveland City Council
- Kim Akeley-Charro, Director of Thompson Education Foundation
- Nancy Almond, Director of Estes Valley Investment in Childhood Success
- Kelly Houghtelling, Wellington Asst. Town Administrator
- Yvonne Myers, Director, Columbine Health Systems
- Mims Harris, Community Advocate/President of ECCLC Board of Directors
- Amanda Miller, Founder, The Place Setting Company

CONSULTING TEAM

The Consulting Team consisted of three Colorado-based professionals who bring decades of experience and expertise in research, analysis, public policy, politics and early childhood programs in Colorado. All three were involved in the development and establishment of the Denver Preschool Program and each have worked on other local and state policy projects to expand access to early care and education services in Colorado and elsewhere. Biographical information and qualifications about each are available through the links below.

- [Cody Belzley, Common Good Consulting, LLC](#)
- [Lynea Hansen, Hansen Communications](#)
- [Andrew Brodsky, Brodsky Research](#)

RESEARCH TEAM

The Research Team was led by Alex Dunn, Research Director at [Strategies 360](#). Strategies 360 is a full-service research firm serving private and public sector clients throughout the Western United States. Alex, who is based in Denver and his team have worked throughout Colorado, including extensively in Northern Colorado.

POLICY PROPOSAL DEVELOPMENT

Case Studies

To inform this process, we studied **five other communities that successfully passed taxes for early childhood** to learn about both the nature and structure of their tax-funded program and the strategy that lead to their success. Specifically, we developed and examined case studies regarding voter-approved, publicly-funded early childhood programs in:

- Denver, CO
- Kent County, MI
- Multnomah County, OR
- San Miguel County, CO
- Summit County, CO

Additionally, we analyzed the results of **eight tax initiatives, considered by Larimer County voters between 2014 and 2020.**

The purpose of this exercise was to learn more about voter responses to tax questions in Larimer County.

Determining Demand & Need

To inform this work, we compiled, analyzed, and presented to the Steering Committee a comprehensive set of data, including:

- Demographic information of families with young children in Larimer County
- Child poverty rate and distribution in Larimer County
- Number and distribution of licensed child care and preschool providers in Larimer County
- Estimated need vs licensed capacity for child care and preschool in Larimer County based on the number of children with all parents in the workforce
- Cost of child care and preschool in Larimer County and percent of family income spent on child care based on Larimer County median income
- Current subsidized funding for early care and education in Larimer County – federal, state, and local sources; public and private

5

COMMUNITY CASE STUDIES

DENVER, CO
KENT COUNTY, MI
MULTNOMAH COUNTY, OR
SAN MIGUEL COUNTY, CO
SUMMIT COUNTY, CO

8%

POVERTY RATE FOR CHILDREN
UNDER 5 IN LARIMER COUNTY

\$13

MILLION/ANNUALLY
CURRENT SUBSIDIZED FUNDING
FOR CHILD CARE IN LARIMER
COUNTY (APPROX.)*

*Includes: Colorado Child Care Assistance Program (CCCAP), Head Start, Colorado Preschool Program, Integrated services (school district SPED), Scholarships, Provider Sliding Scales.

POLICY PROPOSAL DEVELOPMENT (CONT.)

Based on this data, the Committee came to the following conclusions:

- There is a **significant gap between demand for and availability of licensed child care and preschool in Larimer County**: It is estimated that Larimer County needs at least another 3,572 spaces for children from birth to 24 months and another 4,069 spaces for those ages 2 to 5 to close the gap between the number of children with all parents working and the number of licensed slots.
- **Child care is a significant cost burden to working families in Larimer County.**
- **Current funding sources – public and private – are insufficient** to help the community address both availability and affordability of child care and preschool.
- **A sustainable, scalable, high-quality program requires a new, dedicated public funding stream.**

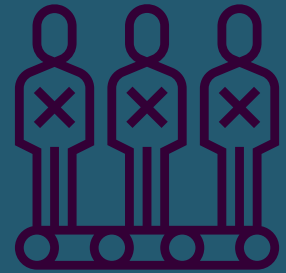
Tax Options

The Steering Committee reviewed data and information, including:

- sales and use taxes
- property taxes
- marijuana taxes

It was determined early in the project that a county tax on marijuana would not generate sufficient revenue to make a meaningful impact on the problem. **The Committee fully investigated both sales and use and property taxes at various levels, considering both policy implications and political viability of each.**

Our public opinion research (methodology described below) showed that a property tax increase, of any amount, was not politically viable. However, public opinion research does show solid voter support for a sales and use tax increase at both the 0.15 percent and 0.25 percent tax increase levels.



3,572 SPACES

**NEEDED FOR CHILDREN
BIRTH TO 24 MONTHS**



4,069 SPACES

**NEEDED FOR CHILDREN
AGES 2 TO 5**



**CURRENT FUNDING
INSUFFICIENT**



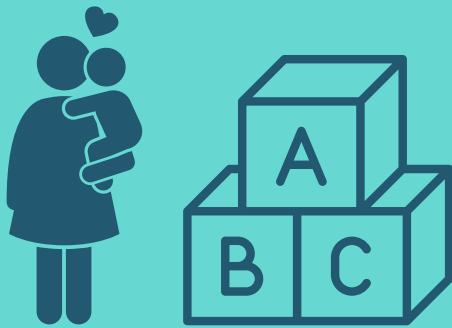
**SOLID VOTER SUPPORT FOR A
SALES AND USE TAX INCREASE AT
BOTH THE .15 %AND
TAX INCREASE LEV...**

REVENUE ALLOCATION

Item #14.

While the Steering Committee is not recommending a specific revenue allocation formula or specific percentages to the program areas, the group did engage in modeling to understand what approximately \$17M / year would mean to Larimer County both in terms of reducing the cost burden of early learning to working families and in expanding capacity and improving quality of early learning in the county. The Steering Committee considered a variety of scenarios and options. **Through this process, the majority of the Committee came to believe that ~\$17M / year of dedicated local funding would make a meaningful impact on the goals of reducing the affordability burden, expanding capacity and improving quality and, as such, was worth pursuing.**

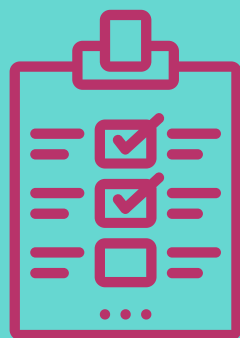
Ultimately, the Committee believes that the County, with guidance and administration support from the Early Childhood Council of Larimer County, should have flexibility to administer the funds within the 4 broad priority categories:



Subsidize the cost of child care and preschool for families with children from birth to age 5



Invest in the early childhood system to expand capacity and improve quality



Conduct thorough evaluation to measure the impact of the program



Pay for administration of the program with a reasonable cap in place

(e.g. administrative expenses should not exceed a set percent of revenue)

REVENUE ALLOCATION (CONT.)

Item #14.

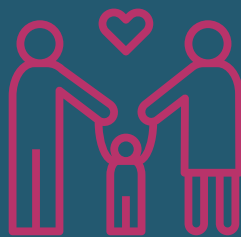
The rationale for this flexibility is to ensure that local dollars can:

- Leverage and maximize federal, state and private funding, which is likely to change over time
- Meet changing community need and demand
- Address localized priorities in differing parts of the county
- Support innovation and respond to best practices for the benefit of children, families and early care and education providers

While the Committee did not want to specifically direct or restrict the use of funds beyond the four program funding priorities, here are a few over-arching principles that the committee came to agreement about in the course of the modeling:



Local funding should support children birth to age five and not focus exclusively on any specific age group.



Families of all incomes should be eligible to receive tuition credit support, however most funds should support families at the lowest income levels; the Committee generally supported the concept of a sliding scale model for child care and preschool subsidies.



Capacity and quality investments should be made to support both:

Workforce / Human Capital - e.g. salary supplements, continuing education, professional development, and training

Physical Capital - e.g. buildings, outdoor spaces, curriculum and materials for existing and new child care and preschool providers

PUBLIC OPINION RESEARCH

We undertook a three-part public opinion research study to better understand the attitudes and opinions of both “grasstops” community leaders and voters and to ultimately determine the political viability of this proposal.

- **In-depth interviews:** Consultants completed **13 interviews with community leaders from all parts of Larimer County** between April 22 and May 4, 2021; the purpose was to get a sense of community priorities and understanding of how early care and education was perceived by community leaders who help set the agenda for the county.
- **Qualboard:** Strategies 360 hosted a **three-day online discussion board with 28 likely 2021 voters** in Larimer County between April 26 and 28, 2021; purpose was to speak to a persuadable group of voters, not a representative one, to get a sense of support and test messaging.
- **Survey:** Strategies 360 conducted a **county-wide poll of 402 likely November 2021 voters** between April 30 and May 5, 2022; purpose was to test viability of proposal, including specific components, and effectiveness of messaging. With these parameters, results will be accurate to within a +/- 4.9% margin of error at the 95% confidence level.

13

Interviews with
community leaders

28

Qualboard with
likely 2021 voters

402

Survey of likely
2021 voters

Public opinion research does
show solid voter support for a
sales and use tax increase at
both the 0.15 percent and 0.25
percent tax increase levels.

Findings of this research show a path to victory for an early childhood sales and use tax measure in 2021.

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

JDDA Financials

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:

Strategic plan to revitalize the Town's historic downtown

The JDDA would like to create a committee that would work alongside the Economic Development Manager to collaborate for future downtown projects.

Events

Previous Events including the Results/Outcome of the Event:

1. Cinco De Mayo Fiesta Downtown – Excellent event, ran well, very well attended (Several thousand in attendance). It was a huge success for the public, families, booths and businesses.
2. Johnstown BBQ Day – Many JDDA members joined the BBQ Day committee this year. This was an amazing event with an amazing turnout.
3. Pop-up Prom Formal Dresses at the JM Post – March 20th and April 10th and \$25 Donations was recommended. This event was put on by the JM Post with Fitness Avenue and Nu-Way Cleaners.

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 the Saturday before Halloween
 - We are planning to set up and market this event. We would like to talk with the town about closing down the streets for a couple of hours for safety reasons!
2. Johnstown Jingle including an annual Toy Drive in early December

Other Event Ideas we are considering

1. Farmers Market
2. Car Show
3. October Fest/Sugar beat Festival
4. Street Dance
5. 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 40-45 welcome bags to new residents monthly with JDDA business information.
2. Mass Mailer – We reached 9,000 households during Q2

Social Media/Website

1. Facebook – As of March 31, 2021 we were at 1743 and as of June 30th we are at 1802.
2. Our website www.visitdowntownjohnstown.com is up and running.
3. Instagram – Increased by 31 followers

Downtown Businesses Update – Q1 2021

JDDA Members: 38 current members (unpaid)
 Starting July 2021 we will start collecting a \$125 Membership Fee for Downtown Johnstown Businesses and \$250 Fee for Partnered Members (JDDA Membership Opportunities Sheet Attached Below)

New businesses/relocated businesses in Downtown Johnstown: The Original Heavenly Cakes, The Immortal Bar

Businesses that have closed/moved out of Downtown Johnstown:

Employment opportunities available:

JDDA Membership Opportunities 2021-2022

Downtown Members

- Businesses and organizations located in Downtown Johnstown (mapped area)
- \$125 Membership Fee January – December (\$60 for June 2021 – January 2022)
- Minimum One social media post or share per month
- Business listing on Visit Downtown Johnstown Website
- Events and Activities included on the Visit Downtown Johnstown Website
- Included on Community Mass Mailings – on the back (goal quarterly)
 - o First Opportunity for logo space on the front of the quarterly mass mailing
- Opportunity to include information in the community welcome bags
- Primary opportunity for event involvement and sponsorships
 - o Discount on sponsorships, booth space and promotional options
 - o Right of first refusal for sponsorships, booth space, event opportunities
 - o Primary consideration for sourcing goods and services
 - o Non-compete considerations – outside vendors and outside promotions

Partnered Members

- Businesses and organizations with a vested interest in Downtown Johnstown
- \$250 Membership Fee Yearly
- One social media post or share quarterly
- Business listing on Visit Downtown Johnstown Website
- Events and Activities included on the Visit Downtown Johnstown Website
 - o Given they physically take place in Downtown Johnstown
- Included on Community Mass Mailings – Included as associate member of downtown
 - o First Opportunity for additional space on the mass mailing after downtown members
- Opportunity to include information in the community welcome bags
- Primary opportunity for event involvement and sponsorships, after downtown
 - o Discount on Sponsorship, booth space and promotional options (After Downtown)
 - o Right of first refusal for sponsorships, booths, event opportunities (After Downtown)
 - o Primary consideration for sourcing goods and services

Non-profit Organizations Located in Downtown Johnstown – Board Reviewed Membership Fee



Johnstown Downtown Development Association
 Quarterly Treasurer's Report
 For 2nd quarter Ending 6/30/2021

Beginning Cash	\$	5,905.98
Cash In	\$	15,750.00 (1)
Cash Out	\$	4,220.98 (2)
Ending Cash	\$	17,435.00

(1)

Cash In :

still receiving some pmts for mass mailer \$150 deposited in May. Still about \$300 due
 \$15,000 for 2021 from Johnstown
 \$600 in membership dues

(2)

Cash out :

\$1500.95 for postcard mailing printing
 \$1939.73 for Cinco De Mayo event including a banner we can re-use
 \$552.38 in postage for postcard mailing printing
 \$227.92 for Cinco De Mayo event last reimbursements for candy,
 decorations, twine and extension cord

***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 #14.

Statement of Financial Position

As of June 30, 2021

	TOTAL
ASSETS	
Current Assets	
Bank Accounts	
BBQ Days acct 8128	33,786.24
General Fund	17,435.00
Total Bank Accounts	\$51,221.24
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	\$51,221.24
TOTAL ASSETS	\$51,221.24
LIABILITIES AND EQUITY	
Liabilities	
Current Liabilities	
Other Current Liabilities	
BBQ Days holding account	33,786.24
Total Other Current Liabilities	\$33,786.24
Total Current Liabilities	\$33,786.24
Total Liabilities	\$33,786.24
Equity	
Retained Earnings	6,485.30
Net Revenue	10,949.70
Total Equity	\$17,435.00
TOTAL LIABILITIES AND EQUITY	\$51,221.24

Johnstown Downtown Development Association

Item #14.

Statement of Activity

April - June, 2021

	TOTAL	
	APR - JUN, 2021	DEC 31, 2020 - MAR 31, 2021 (PP)
Revenue		
Designated Contributions	15,000.00	
Dues income	600.00	
Services	150.00	1,575.00
Total Revenue	\$15,750.00	\$1,575.00
GROSS PROFIT	\$15,750.00	\$1,575.00
Expenditures		
Advertising		
Marketing	670.20	834.32
Printing	1,500.95	
Total Advertising	2,171.15	834.32
Event Expenses	1,449.83	
Insurance	600.00	
Property/Liability Insurance		1,320.00
Total Insurance	600.00	1,320.00
Total Expenditures	\$4,220.98	\$2,154.32
NET OPERATING REVENUE	\$11,529.02	\$ -579.32
NET REVENUE	\$11,529.02	\$ -579.32