

NORWOOD WATER COMMISSION - minutes

Meeting on: Tuesday, July 14, 2026

Regular Session starting at: 6:30 p.m.

Meeting at: 1670 Naturita Street, Norwood CO 81423 at Norwood Town Hall and Zoom option.

Call Regular Meeting To Order

The regular meeting of the Norwood Water Commission was called to order by Tony Daranyi at 6:30 pm.

Board Attendance:

Board Chair - Tony Daranyi – Present

Vice Chair – Jenny Russell – Present

Member – Ray Cossey - Present

Member – Ryan Howe – Present

Member - Finn Kjome – Present

Member- Jaime Perce- Present

Staff Attendance:

Administrator Director – Sara Owens – Present

Public Works Director – Randy Harris – Present

Town Clerk – Cidney Ross – Absent

Deputy Administrator – Annie Crews - Present

Public Attendance:

Wilton Barret, Russell Arr, Jim Wells – via Zoom, Claudia Torres – via Zoom. Frank Golaszewski – via Zoom. Ward Priestley. Hank Williams. Micheal Miller – via Zoom. Todd Bissell. Collenn Kaneda – via Zoom. Caly Wadman. Earl McWilliams. Sean Merrill. Riely O’Brien.

Public Comment For Items Not On The Agenda

Wilton Barrett – requested work sessions on future water planning.

Consent Agenda

Finn Kjome motioned to approve the consent agenda. Ray Cossey seconded the motion.

1. June 12, 2026, Minutes
2. June Financials
3. Budget to Actuals

No discussion. All voted, motion approved.

Executive Session

None

Board Business Agenda

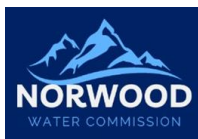
1. Leak Forgiveness – Russell Arr – 36463 County Rd 40.50

Randy Harris did inform the board that Mr. Arr did have a significant leak at his meter. The Public Works crew replaced the meter after monitoring the leak for 12 days. Jenny Russell asked staff for clarification on policy for leak forgiveness. Sara Owens did clarify that staff goes off average prior usage.

Ray Cossey motioned for staff to follow protocol on leak forgiveness. Finn Kjome seconded the motion. All voted, motion approved.

2. New Water Tap Application – Claudia Tovar – 120 S Ovo Place, Norwood, CO 81423

Randy Harris explained that this application is for Morgan Rummel's subdivision pending CDOT permit approval.



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Ray Cossey motioned to approve on Randy's conditions. Ryan Howe seconded the motion. All voted, motion approved.

3. Williams Construction Co – Industrial Raw Water Tap / Card

The Commission discussed unauthorized use of a municipal hydrant for a construction project. FCI Constructors explained the misunderstanding regarding water authorization, clarifying that Williams Construction was not responsible for providing water for the project. The issue was reported and hydrant use was discontinued.

The Commission discussed the need for a process to provide water for future construction projects. Finn Kjome suggested that these types of requests go in front the board. Members emphasized bringing requests to the Water Commission early to allow for planning and to explore opportunities for water sales rather than denying requests due to lack of preparation.

The Commission reviewed the revocation of Williams Construction's water tap card and determined the company was not responsible for the unauthorized hydrant use.

Ryan Howe motioned to reinstate Williams Construction's raw water card. Ray Cossey seconded the motion. All voted, Jenny Russell voted no, motion passed contested.

4. Drought Contingency Planning Grant with San Miguel County

The Board discussed participating in a county-led planning grant after Sara Owens shared that Star Jamison had requested collaboration. The grant would require staff time but no additional financial contribution, and the Board agreed to participate, noting that the County would complete most of the work. Members stated the Commission's current drought plan is sufficient but could better reflect the existing water tier structure.

The Board reviewed current water conservation efforts, including the existing every-other-day watering schedule, and discussed updating the drought plan through 2027. Staff also provided an overview of the Town's smart water technology, explaining that while the system can identify high water usage and generate reports, real-time homeowner monitoring remains limited.

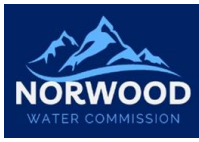
Wilton Barret reported that the reservoir is currently at approximately 16% capacity, with 300 acre-feet allocated to individual owners and 200 acre-feet reserved for emergency use. The Board noted that while conservation efforts are necessary, reduced water consumption also affects revenue available for operations and capital projects.

The Board also received an update on the Farmers Water Development Company's straw dam feasibility study. A grant has been awarded for core drilling and future landowner agreements; however, no direct collaboration with the Norwood Water Commission is anticipated at this time.

5. Discussion of Raw Water Rules and Regulations and Discussion of Raw Water Governing Board

Jenny Russell discussed the need for rules and regulations governing raw water usage, with Jenny identified as the lead on developing these regulations. The discussion clarified that once raw water is used for its designated purpose (like irrigation), it cannot be used for other purposes without proper water rights, and water must follow specific decrees regarding location and usage. The board acknowledged that while some water rights are being used for irrigation rather than potable water to comply with regulations, they need to ensure proper adherence to water rights decrees to avoid legal issues.

Sara Owens clarified that the Norwood Water Commission and Norwood Board of Trustees need to schedule and Joint Work Session for approval of the Raw Water Rules and Regulations and Governing Board.



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Board Member Reports and Announcements

Jenny Russell reported that a current board member was involved in a “Supreme Court” case and stating that the Norwood Water Commission is not a “legal water supplier”. The information that was provided by Jenny Russell is posted on norwoodtown.com under this meeting’s supporting documents.

Jenny Russell explained that this research was prompted from “intimidation of a ditch group”. Ray Cossey defended himself by explaining that the court documents in question were opened before he was an active board member. Ryan Howe questioned the relevance of this subject with current operations and expressed concerns that this “investigation” was launched unprompted.

Staff Reports and Announcements

1. Randy Harris, Public Works Director

Written report is posted on norwoodtown.com under supporting documents for this meeting.

2. Sara Owens, Town Manager

Written report is posted on norwoodtown.com under supporting documents for this meeting.

The board agreed to begin budget discussions in September, with finalization due by December.

Adjourn

Finn Kjome motioned that the Norwood Water Commission Regular Meeting be adjourned at 8:10 pm. Ryan Howe seconded the motion. All voted, meeting adjourned.

NORWOOD WATER COMMISSION					
ACCOUNTS PAYABLE JULY 2026					
			NWC Portion	NSD Portion	TON Portion
PD	51-40-250	Filter Tech Systems	Pneumatic Actuator/Positioner	\$ 2,493.85	
PD	51-40-245	Filter Tech Systems	Freight	\$ 19.48	
PD	51-40-275	SMPA	Water Meter #140042207	\$ 41.97	
PD	51-40-275	SMPA	162 Gurley Dr #140042209	\$ 59.25	
PD	51-40-275	SMPA	2096 County Rd Y43 #29484	\$ 67.08	
PD	51-40-280	CenturyLink	Public Works Phones	\$ 227.34	
PD	51-40-250	Filter Tech Systems	Pneumatic Actuator/Solenoid Valve	\$ 2,192.52	
PD	51-40-245	Filter Tech Systems	Freight	\$ 54.90	
PD	51-40-770	SGM	Norwood Water Storage & Supply Planning	\$ 27,413.98	
PD	51-40-760	SGM	Potable Transmission Main Design	\$ 58,375.38	
PD	51-40-760	SGM	Overdue Invoice 4/29/26	\$ 1,480.25	
PD	51-40-420	Jerry Chesnut	Credit Refund	\$ 94.65	
PD	51-40-275	SMPA	Master Tank #230147203	\$ 53.59	
PD	51-40-275	SMPA	Treatment Plant #230147202	\$ 1,933.07	
PD	51-40-275	SMPA	Coventry Tank #140068901	\$ 119.00	
PD	51-40-275	SMPA	Blue Tank #230147204	\$ 119.00	
PD	51-40-480	ACE Hardware	NWC Credit Card	\$ 765.26	
PD	51-40-250	West Elk Supply	Chlorine Cylinder Rental	\$ 225.00	
PD	51-40-132	Town of Norwood Reimbursement	Aflac	\$ 295.75	\$ 228.77
PD	51-40-132	Town of Norwood Reimbursement	CEBT	\$ 3,784.56	\$ 211.64
PD	51-40-132	Town of Norwood Reimbursement	United	\$ 19.62	\$ 16.80
PD	51-40-430	Town of Norwood Reimbursement	Streamline	\$ 200.00	\$ 200.00
PD	51-40-275	Town of Norwood Reimbursement	Bruin Waste	\$ 85.22	\$ 85.22
PD	51-40-280	Town of Norwood Reimbursement	Firstnet	\$ 73.09	\$ 73.09
PD	51-40-510	Town of Norwood Reimbursement	Pinnacol	\$ 997.20	\$ 332.40
PD	51-40-490	Town of Norwood Reimbursement	Imagenet	\$ 214.62	\$ 214.62
PD	51-40-430	Town of Norwood Reimbursement	Zoom	\$ 3.33	\$ 3.33
PD	51-40-132	Town of Norwood Reimbursement	Masa	\$ 200.00	\$ 40.00
PD	51-40-270	Town of Norwood Reimbursement	Fica	\$ 2,022.62	\$ 962.96
PD	51-40-110	Town of Norwood Reimbursement	Payroll	\$ 25,140.42	\$ 12,587.64
PD	51-40-310	Codeworx	Hardware/Support	\$ 286.46	\$ 286.46
PD	51-40-460	Garfield & Hecht PC	Diligence for Case 10CW202	\$ 148.00	\$ 145.83
PD	51-40-460	Garfield & Hecht PC	Lone Cone and Ditch Reservoir Enlargement	\$ 118.50	
PD	51-40-460	Garfield & Hecht PC	Redundant Waterline Project	\$ 2,622.50	
PD	51-40-630	Department of Health and Environment	Drinking Water Fee	\$ 615.00	

PD	51-40-310	ACM Excavation	Water Break on 45Y Rd	\$	2,055.00
PD	51-40-110	Town of Norwood Reimbursement	IRS?	\$	1,483.78
PD	51-40-250	West Elk Supply	Chlorine Gas	\$	2,255.00
PD	51-40-280	CenturyLink	Public Works Phones	\$	228.88
PD	51-40-480	USA BlueBook	Flushing Hydrant 01102013	\$	639.95
PD	51-40-480	USA BlueBook	INV1102195	\$	2,993.47
PD	51-40-480	USA BlueBook	Granular Chlorine 01103672	\$	489.90
PD CC	51-40-275	Vero Broadband	Public Works Fiber	\$	38.00
PD CC	51-40-275	Clearnetworkx	Public Works Phones	\$	60.00
PD CC	51-40-430	Microsoft Corporation	Microsoft Subscriptions	\$	68.46

Report Criteria:

Includes only accounts with balances and activity

Includes grand totals

Account Number	Account Title	2026-26 Current year Actual	2026-26 Current year Budget	Earned Expended Percent
WATER FUND				
WATER FUND				
51-37-100	WATER SALES	388,361.08	675,000.00	57.53
51-37-200	CONNECTION FEES/RECONNECT	.00	400.00	.00
51-37-250	WATER TAPS CHARGES	.00	12,000.00	.00
51-37-300	DELINQUENT CHARGES	1,093.81	4,000.00	27.35
51-37-350	PUBLIC WATER METER/SHACK	13,951.99	22,000.00	63.42
Total WATER FUND:		403,406.88	713,400.00	56.55
WATER FUND				
51-38-100	INTEREST EARNINGS	196.45	.00	.00
51-38-200	PROJECT	58,224.93	120,857.00	48.18
51-38-201	EIAF 25-098-GRANT REDUNDANT	20,906.34	175,000.00	11.95
51-38-202	SRF D&E	.00	300,000.00	.00
51-38-203	Administrative Planning Grant	.00	8,687.00	.00
51-38-300	MISCELLANEOUS REVENUES	.00	150.00	.00
51-38-900	DEPOSITS/APP FEES	3,017.02	4,500.00	67.04
Total WATER FUND:		82,344.74	609,194.00	13.52
WATER FUND				
51-39-700	BEGINNING FUND BALANC/TRANSFER	.00	218,000.00	.00
Total WATER FUND:		.00	218,000.00	.00
WATER FUND				
51-40-110	SALARY REIMBURSEMENT - TOWN	84,402.65	202,515.00	41.68
51-40-115	GRANT WRITER	.00	25,000.00	.00
51-40-132	EMPLOYEE BENEFITS - HEALTH INS	14,088.41	21,500.00	65.53
51-40-210	DUES/CONFERENCES	443.00	4,000.00	11.08
51-40-230	TRAVEL	520.00	2,000.00	26.00
51-40-235	Progress Incentive	.00	5,000.00	.00
51-40-240	OFFICE SUPPLIES AND EXPENSE	407.17	2,500.00	16.29
51-40-245	Freight	118.51	3,000.00	3.95
51-40-250	CHEMICALS/SUPPLIES/MAINT	21,271.34	35,906.00	59.24
51-40-255	VEHICLE EXPENSES	.00	3,000.00	.00
51-40-270	FICA MATCHING/IRA REIMBURSEMEN	4,348.58	19,000.00	22.89
51-40-275	UTILITIES -	16,679.52	30,000.00	55.60
51-40-280	TELEPHONE	1,804.81	3,500.00	51.57
51-40-290	POSTAGE	1,050.06	5,500.00	19.09
51-40-310	CONTRACT LABOR	27,530.21	30,000.00	91.77
51-40-420	CREDITS/ADJUSTMENTS	352.94	350.00	100.84
51-40-430	SERVICE CHARGE	4,071.81	2,000.00	203.59
51-40-460	ATTORNEY FEES	18,684.00	35,000.00	53.38
51-40-480	MATERIALS & SUPPLIES	15,678.11	35,000.00	44.79
51-40-490	PROF/TECHNICAL/AUDIT	214.62	5,500.00	3.90
51-40-510	INSURANCE AND SURETY BONDS	22,606.56	22,000.00	102.76
51-40-620	MISCELLANEOUS SERVICES	4,760.93	8,000.00	59.51
51-40-630	WATER TESTING	3,646.26	8,000.00	45.58
51-40-661	WATER ASSESSMENTS - FWDC	2,727.50	31,500.00	8.66

Account Number	Account Title	2026-26 Current year Actual	2026-26 Current year Budget	Earned Expended Percent
51-40-740	CAPITAL OUTLAY/EQUIPMENT/PLANT	14,118.65	34,193.00	41.29
51-40-741	AERATOR	.00	72,913.00	.00
51-40-742	PRESSURE REDUCING VALVE	.00	78,500.00	.00
51-40-743	TANK MAINTENANCE	.00	100,000.00	.00
51-40-744	FILTER SAND REPLACEMENT	.00	25,000.00	.00
51-40-750	ENGINEERING	.00	40,000.00	.00
51-40-760	CAPITAL PROJECT/SYSTEM IMPROVE	167,402.05	411,000.00	40.73
51-40-761	REDUNDANT LINE EA COST	6,590.27	12,800.00	51.49
51-40-762	ADMINISTRATIVE PLANNING GRANT	779.00	165,016.00	.47
51-40-770	CWCB WATER STORAGE	27,413.98	.00	.00
51-40-830	DEBT SERVICE/LOAN/CWCB	51,400.00	51,401.00	100.00
51-40-840	SYSTEM UPGRADES	.00	10,000.00	.00
Total WATER FUND:		513,110.94	1,540,594.00	33.31
WATER FUND Revenue Total:		485,751.62	1,540,594.00	31.53
WATER FUND Expenditure Total:		513,110.94	1,540,594.00	33.31
Total WATER FUND:		27,359.32-	.00	.00
Grand Totals:		27,359.32-	.00	.00

Report Criteria:

Includes only accounts with balances and activity

Includes grand totals

DRAFT Norwood Water Commission Raw Water Delivery and Storage Alternatives Analysis



August 2026

Prepared by



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Norwood Water Commission Raw Water Delivery and Storage Alternatives Analysis

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SGM Project # 2015-440.015

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1.0 Executive Summary

The Norwood Water Commission (NWC) retained SGM to evaluate raw water storage and redundant supply alternatives that could improve drought resiliency, increase system reliability, and support existing and projected future demands. NWC's current municipal raw water supply is primarily dependent on Gurley Reservoir, which is available during the irrigation season and is vulnerable to reduced physical supply during drought. Recent drought conditions have increased concerns that consecutive dry years could significantly reduce storage in Gurley Reservoir and NWC Reservoir Nos. 1 and 2, potentially limiting the system's ability to meet drinking water demands. This alternatives analysis builds on prior NWC Water Master Plan findings and evaluates additional storage and supply options that could help NWC develop a more secure and redundant water supply portfolio.

SGM evaluated several potential storage alternatives, including enlargement of the Lone Cone Reservoir, three potential Straw Reservoir sites, and three Water Treatment Plant (WTP) reservoir alternatives located adjacent to the existing NWC WTP facilities. SGM also evaluated development of the decreed NWC River Diversion from the San Miguel River, including pump station and pipeline alternatives that would convey water approximately 3.17 miles and lift it roughly 900 vertical feet to the WTP area. The storage alternatives were assessed for storage capacity, dam feasibility, cost, water supply availability, environmental permitting feasibility, land and easement requirements, implementation complexity, and long-term operation and maintenance considerations.

Previous water supply evaluations show the most meaningful opportunity to improve NWC's long-term resiliency is development of the NWC River Diversion. Unlike the Lone Cone and Straw Reservoir alternatives, which would generally store water derived from drainages and water rights already owned by Farmers Water and would be most effective in average or wet years, a new diversion from the San Miguel River, while expensive, would provide a physically distinct and legally available secondary source. Prior planning work estimated that the NWC River Diversion could provide approximately 1,990 acre-feet in a dry year, nearly twice the 1,000 acre-foot annual firm-yield target identified by NWC. With additional storage, the diversion could support monthly demands beyond 2040 and could be used to refill existing raw water reservoirs or provide direct supply to the WTP during the non-irrigation season.

From a storage perspective, SGM found that WTP Reservoir Alternative 1 (under the NWC Reservoir No. 3 water right) is the preferred near-term storage alternative. WTP Alt 1 would provide approximately 105.0 acre-feet of new storage adjacent to existing NWC facilities and ranked highest in the reservoir multi-criteria decision analysis with a total score of 6.8. Although its estimated planning-level cost is approximately \$6.24 million, or about \$59,431 per acre-foot, it provides the greatest storage among the WTP alternatives and avoids many of the permitting, property, wetland, high-hazard dam, and construction challenges associated with the Lone Cone Reservoir Enlargement and Straw Reservoir options. In comparison, the Lone Cone Reservoir Enlargement would add approximately 318 acre-feet but would require substantial wetland impacts, an Individual Permit under Section 404 of the Clean Water Act, private easements, federal coordination, and Gunnison sage-grouse consultation. The Straw Reservoir alternatives would provide between 260 and 450 acre-feet but would likely face major permitting obstacles because they are on-channel reservoir concepts within Gurley Canyon and would require private property acquisition, substantial environmental review, and consultation for critical habitat and endangered species impacts.

SGM's evaluation of the San Miguel River Diversion infrastructure identified Alternative 1 as the preferred pump station and pipeline alignment. Alt 1 would locate the pump station near the Upper Bear Creek/Lower Beaver campground area and use a combination of trenched pipeline,



directional drilling through the canyon wall, and pipeline installation within road corridors. This alternative scored highest in the pump station and pipeline multi-criteria decision analysis with a total score of 6.7. While Alt 1 would likely require a water court process to change the point of diversion and coordination with BLM, USFS, San Miguel County, USACE, USFWS, and other agencies, it offers the best combination of site access, constructability, permitting feasibility, and cost relative to the other alignments. The conceptual Engineer's Opinion of Probable Cost for the diversion, pump station, and pipeline is approximately \$10.69 million.

Based on the analysis, SGM recommends that NWC advance WTP Alt 1 and NWC River Diversion Alt 1 as complementary projects. WTP Alt 1 provides practical, locally controlled storage adjacent to existing operations and has a comparatively straightforward permitting path, while the NWC River Diversion provides the new redundant supply source needed to improve drought resiliency and reduce reliance on Gurley Reservoir alone. Recommended next steps include coordinating with the Colorado State Land Board for WTP reservoir land authorization, working with NWC's water rights attorney regarding storage and point-of-diversion considerations, initiating agency coordination with BLM, USFS, San Miguel County, and other permitting entities, refining engineering design to minimize wetland and environmental impacts, and pursuing state and federal grant or loan funding to support design, permitting, and construction.

2.0 Introduction

The Norwood Water Commission (NWC) is a rural water system provided located on Wrights Mesa, approximately 30 miles northwest of Telluride, Colorado. The NWC has a large service area that includes the Town of Norwood and Redvale, ultimately providing water in San Miguel County and Montrose County to rural parts of Wrights Mesa and surrounding low-density agricultural lands. In addition, NWC also provides agricultural users with raw water supply for irrigation use. **Figure 1** is a project vicinity map that shows NWC's service area.

The NWC's primary water supply is from Gurley Reservoir which provides irrigation and municipal water to NWC and others on Wrights Mesa. Gurley water is only available to the NWC during the irrigation season (approximately April 1st to November 31st) because of legal and physical constraints. Before the irrigation season ends, NWC releases water from Gurley Reservoir to fill the NWC Reservoir Nos. 1 and 2 to meet the non-irrigation season's municipal demands.

During recent droughts (2018 and 2026) water levels dropped significantly in Gurley Reservoir and in the NWC reservoirs. If a similar drought were to occur in any two consecutive years, reservoirs levels would have continued to drop to a level that would not supply adequate drinking water to the entire service area. The NWC water supply is vulnerable to droughts which have been increasing both in frequency and intensity. As such, the NWC engaged SGM to complete an alternatives analysis for several reservoirs and redundant surface water supply develop a second reliable and redundant source of water for existing and future water demands.

2.1 Project Purpose and Need

In 2017, the Town of Norwood and NWC developed a raw water irrigation system that utilizes NWC's existing shares in the Farmers Water Development Company (Farmers Water) for tree, lawn, and garden irrigation, which supports soil health and a strong tree canopy. The shares are stored briefly in a small reservoir before being delivered into its raw water irrigation system for subsequent irrigation use. The development of the Town of Norwood and NWC's raw water irrigation system has reduced the demand for treated domestic use water by allowing water users to meet their irrigation demands with raw water.



After the construction of Norwood and NWC's raw water irrigation system, SGM completed NWC's Water Master Plan in 2020 and updated it in 2022 to summarize NWC's future demands and associated waters supply needs. Key findings from the 2020 and 2022 Water Master Plan include:

- NWC's primary physical water supply for the NWC is through Gurley Reservoir.
 - A second smaller supply is through Gardiner Springs which is considered seepage from Gurley Reservoir.
- The NWC has contract water in Gurley Reservoir to provide 300 AF of raw untreated water on an annual basis for domestic use and is considered a firm supply
 - The agreement was consummated on April 1, 2005, between the NWC and the Farmers Water. The agreement is perpetual and may only be terminated upon a written agreement of both parties.
 - The reservoir physical supply, however, is subject to and vulnerable to drought conditions based upon the inflow and fill into the reservoir.
- The current 300 AF allocation of Gurley Reservoir water would be insufficient for NWC's demands by 2032 based on a 4% growth rate, or by 2036 given a 3% growth rate.
- Ultimately, this situation is critical, as increased housing prices have pushed more of the Telluride region's workforce to the Norwood area, rapidly increasing growth.

Based on recent discussions, SGM understands NWC may be able to secure additional water from Gurley Reservoir through a new contract. However, back-to-back droughts may diminish the available physical supply from Gurley Reservoir below NWC's future demand. The NWC physical water supply lacks redundancy and is subject to variability within a single watershed. Therefore the 2022 Water Master Plan identified the need for NWC to develop and plan for an additional water supply. A secure and reliable water supply portfolio is critical for drought and climate change resiliency.

Therefore, NWC sought and received a Colorado Water Conservation Board (CWCB) Local Capacity and Technical Assistance Grant to provide help in applying for federal grants for the project(s) identified in the Master Plan. SGM was selected to assist NWC with development of an application for federal grants assistance.

As a part of the federal grant application development process, SGM has identified a suite of options for additional water supply sources and storage for the NWC system. SGM expanded and refined existing analyses from the 2020 Water Master Plan and 2022 update. The 2020 Water Master Plan noted the current raw water reservoirs store much less than their decreed and/or design capacities. Therefore, SGM evaluated if NWC could expand the capacity of certain existing reservoirs and/or develop additional reservoir storage to increase NWC's firm supply. In addition, SGM evaluated the development of the decreed, but undeveloped, San Miguel River Diversion and the San Miguel Project water rights reserved for municipal and domestic use in the NWC service area.

3.0 Overview of Proposed Infrastructure Alternatives

SGM identified three alternative reservoir storage locations for evaluation: enlargement of the existing Lone Cone Reservoir, development of a new Straw Reservoir at one of three potential sites, and expansion of storage adjacent to the Water Treatment Plant through enlargement of Reservoir 1 and construction of a third reservoir in one of three potential configurations. Reservoir



No. 3 would be supplied with water diverted from the San Miguel River via the proposed San Miguel Pump Station and Pipeline. Reservoir alternatives are shown on **Figure 2**, Project Vicinity.

3.1 Cone Reservoir Enlargement

The Cone Reservoir is an existing reservoir. In 2010 the NWC jointly filed a water court application in Division 4, Case No. 10CW203 with the Lone Cone Ditch and Reservoir Company (LCDRC) for an enlargement of the Cone Reservoir, known as the Lone Cone Reservoir Enlargement. On March 31, 2026, the NWC and LCDRC again filed an application for the finding of reasonable diligence on the Lone Cone Reservoir Enlargement. As shown on **Figure 3**, this alternative represents an enlargement of the existing reservoir and referred to as the Lone Cone Reservoir Alternative (LCR Alt).

3.2 New Straw Reservoir

Straw Reservoir is a proposed on-channel water storage reservoir located on the drainage downstream of Gurley Reservoir. This natural drainage, known as Gurley Canyon, is used to deliver Gurley Reservoir releases to water users on Wrights Mesa. The Straw Reservoir water right is conditional and is wholly owned by Farmers Water. Any use of Straw Reservoir water by the NWC would need to be approved and by Farmers Water and would likely be subject to a future long-term contract between Farmers Water and the NWC. As shown on **Figure 4**, SGM evaluated three potential site options, which will be noted as Straw Reservoir Alternative 1 (SR Alt 1), Straw Reservoir Alternative 2 (SR Alt 2), and Straw Reservoir Alternative 3 (SR Alt 3).

3.3 NWC Reservoir Nos. 1 through 4

The NWC has two existing raw water reservoirs near its existing water treatment plant (WTP), which are known as the NWC Reservoir Nos. 1 and 2. Gurley Reservoir provides water to them from April through November. These reservoirs are an important non-irrigation or winter supply of water. The NWC Reservoir No. 1 was constructed in 1978 and was originally designed with a capacity of 10,000,000 gallons (30 AF). Physical conditions encountered during construction and administrative actions subsequent to construction have resulted in a capacity much less than the 10,000,000 gallons. The NWC Reservoir No. 2, with a capacity of 30,000,000 gallons (92 AF) is located immediately west and adjacent to the WTP.

SGM evaluated an enlargement of NWC Reservoir No. 1 to see if it would be possible to increase the capacity of the existing reservoir to be closer to its originally designed capacity of 30 AF.

SGM evaluated the addition of a third reservoir near the WTP to capture additional raw water when available to increase water supply reliability. The NWC has two conditional storage water rights for NWC Reservoir No. 3 and Reservoir No. 4, which are located near the WTP. Therefore, as shown on **Figure 5**, SGM developed several potential layouts for the third reservoir, which will be noted as WTP Reservoir Alternative 1 (WTP Alt 1), WTP Alternative 2 (WTP Alt 2), and WTP Reservoir Alternative 3 (WTP Alt 3).

3.4 San Miguel Pump Station and Pipeline

To evaluate the feasibility of developing a new water source to create a redundant water supply for the NWC, SGM evaluated the feasibility of constructing a new pump station and pipeline from the San Miguel River. NWC has two conditional water rights for the NWC River Diversion structure, which is decreed to divert water from the San Miguel River for storage in WTP Reservoir



Alternatives and the Lone Cone Reservoir Enlargement. The proposed pump station and pipeline is shown in **Figure 6**.

4.0 Evaluation of Water Supply Availability

To help evaluate the viability and effectiveness of each of the various water storage and supply alternatives to increase NWC's firm yield, SGM considered the physical and legal supply that would be available for each alternative. SGM primarily relied upon historical yield analyses and summarized key information in this report for each alternative. An overview of NWC's overall water rights are shown in **Figure 7**, which helps illustrate the general locations of NWC's various water rights discussed in this section.

4.1 Lone Cone Reservoir Enlargement Alternative

In 2019, SGM evaluated the water availability and supply development for the Lone Cone System. The 2019 study evaluated the conditional Lone Cone Ditch Enlargement storage right originally decreed in Case No. 10CW203. The senior Lone Cone Reservoir and Lone Cone Ditch rights wholly owned by the Farmers Water are absolute for 1,840 AF of storage and 100.0 cubic feet per second (cfs) of direct flow, respectively. Case No. 10CW203, and subsequent diligence applications, have been jointly filed between the Farmers Water and NWC and are conditionally decreed for a 4,000 AF enlargement of the reservoir. Case No. 10CW203 also conditionally decreed an enlargement of use for the existing 100 cfs ditch right for additional purposes, including municipal use. Case No. 10CW203 also conditionally decreed the use of up to 175 cfs from the NWC Goat Creek Pump and its alternate points of diversion, separately decreed in Case No. 10CW202 to fill the Lone Cone Reservoir Enlargement.

The 2019 study considered the feasibility of connecting the Cone Ditch below the Lone Cone Reservoir to the raw water system operations pond. These two structures are proximal to one another and could reasonably be connected. Necessary infrastructure would include a turnout from the Cone Ditch with a vault, screen, measurement device and short pipeline to the raw water operations pond is feasible, if an easement could be obtained for these facilities. Ultimately SGM determined the Lone Cone Reservoir Enlargement would allow NWC to use water stored in a future Lone Cone Reservoir Enlargement as a supplemental supply for the raw water system.

In 2019, SGM determined the existing Lone Cone Reservoir inflow and storage values showed that the reservoir was full for several days in June 2011 at which time diversions in the Lone Cone Ditch were reduced to match outflow from the reservoir (i.e., pass-through). Other years are believed to similarly have had substantial water available under the enlarged Lone Cone Ditch right, but records lack precision to determine when and for how long such conditions occurred. Other periods when the enlargement right could be used include early in the irrigation season when irrigation in the Town is ongoing and senior ditch water has not been turned on, or when senior ditch water demands are reduced due to haying or other ranch operations.

Ultimately, the Lone Cone Reservoir Enlargement would serve to take water physically and legally available in average and wet years and then carry that water over for use in subsequently dry years. The firm yield associated with the Lone Cone Reservoir Enlargement would be bolstered by developing the NWC Goat Creek Pump water right and its alternative points of diversion. Based on our previous work SGM concurs that water would physically and legally be available in wet years and likely during the runoff period during average years. Capturing and storing these diversions for dry years would be critical to firm the Lone Cone Reservoir Enlargement supply during dry year. However, at present the Lone Cone Reservoir Enlargement Alternative would



predominantly increase the firm yield for NWC and the Town of Norwood's raw water irrigation system and would not increase the physical amount available for NWC's treated municipal use.

4.2 Straw Reservoir Alternatives

The conditional Straw Reservoir water right is wholly owned by Farmers Water, as well as its decreed filling source, the Naturita Canal. The Naturita Canal has a mix of very senior to relatively senior absolute water rights that total 1,051 cfs. SGM reviewed historical diversion records for the Naturita Canal and determined the Naturita Canal has diverted as much as 77,438 AF in a single year and on average diverts 17,431 AF per year. In recent dry years (2018, 2020, and 2021) the average annual yield has been 4,577 AF per year.

Like the Lone Cone Reservoir Enlargement, the Straw Reservoir Alternatives would serve to store water physically and legally available in average and wet years and then carry that water over for use in subsequently dry years. Given the Naturita Canal has diverted approximately 60,000 AF more in a single year (1980) than the average annual diversion amount, there is significant potential to store water in wet years. However, given that the recent dry-year yield is approximately 12,800 AF less than the average annual yield, SGM does not believe the Straw Reservoir Alternatives would not be protective against two consecutive drought years, as the decreed volume for Straw Reservoir is 6,000 AF. Therefore, SGM believes the Straw Reservoir Alternatives are similar to the existing Gurley Reservoir supply which is predominately constrained by dry-year yields. Similarly, because a future Straw Reservoir Alternative would use Gurley Canyon and the Gurley Ditch to convey water to Farmers Water's users, the delivery could also be limited to the irrigation season between April through November.

SGM notes that the Gurley Reservoir and the Straw Reservoir Alternatives fill sources are all derived from the Beaver Creek and/or its tributaries. SGM believes NWC should consider having multiple and redundant sources of drinking water supply to ensure a safe, reliable supply in case one supply becomes unavailable due to physical constraints, legal water curtailment, or is rendered unsafe because of wildfires and the post-fire impacts.

4.3 NWC River Diversion Alternative

The NWC River Diversion is decreed for up to 5.0 cubic-feet-per-second (cfs) and the diversion rate is based on the amount of flow in the river, per Case No. 94CW244. The NWC sought an enlargement of the NWC River Diversion in Case No. 10CW202 for 5.0 cfs to allow municipal, irrigation, commercial, industrial, domestic, power generation, augmentation and piscatorial uses along with storage in the NWC Old Town Reservoir and NWC Reservoir Nos. 1 through 4. Collectively, NWC decrees for the NWC River Diversion allow for year-round diversions, if needed, based on various streamflow conditions in the San Miguel River.

In Case No. 10CW202, the NWC identified the need for a firm yield of no less than 1,000 AF per year. SGM's 2020 NWC Water Master Plan evaluated the firm yield for physical supply from the San Miguel River via the NWC River Diversion. Therefore, SGM relied upon those findings and summarized them in this section. The 2020 Water Master Plan tabulated the average monthly streamflow in the San Miguel River at the Placerville stream gage and concluded there is a reasonable amount of flow in the river at the NWC River Diversion point of diversion, even in a dry year. For example, the lowest streamflow observed, even during dry years, have occurred in January and February and are still approximately 55 cfs.

Senior water rights call records for the San Miguel River were obtained to assess the extent that calls from downstream water rights would curtail diversions of the NWC River Diversion water right. Typically, the Highline Canal and the BCD Ditch are the most senior water rights calling on



the river. The average start and end dates for calls during dry years (2002, 2003, 2012, and 2013) were used for the dry year analysis and resulted in a call being in effect from July 6 through September 27. The average start and end dates for calls during average years (2004, 2009, 2010, 2011 and 2017) were used for the average year analysis and resulted in a call from August 24 through September 18. It was assumed that the NWC River Diversion would not be able to divert during times of a call. No water rights calls occurred during wet water year conditions.

The Colorado Water Conservation Board (CWCB) has decreed instream flow (ISF) water rights in the San Miguel River at or below the NWC River Diversion. These ISFs were decreed in Case No. 02CW277 that range from 61 to 93 cfs, and in Case No. 11CW129 that range from 80 to 325, depending on the time of the year. Both CWCB's instream flow rights are junior to the NWC River Diversion municipal uses decreed in Case No. 94CW244 and would not have any effect on potential diversions. The CWCB's instream flows decreed in Case No. 02CW277 are senior to NWC River Diversion additional uses decreed in Case No. 10CW202. Diversions at the NWC River Diversion for uses other than municipal may only be made when the instream flow right, which range from 61 to 93 cfs, is satisfied.

After considering these constraints, SGM estimated that in a dry water year with a senior call for most of the summer, there would still be 1,990 acre-feet of water that could be diverted at the NWC River Diversion. The available supply in wet and average years is substantially higher.

Therefore, SGM determined the annual firm yield was almost twice the target yield of 1,000 AF/year established by the NWC. It is important to note that in dry years the NWC River Diversion's ability to divert water during the irrigation season months of July through September is limited, especially once a senior water right call is placed on the San Miguel River. However, even in dry years the NWC River Diversion water right can divert between 1.0 cfs and 5.0 cfs from October through June.

The NWC River Diversion water right's firm yield can supply NWC's projected water demand on an annual basis well beyond the year 2040. With additional raw water storage capacity, the NWC River Diversion Water right could support monthly demands through 2040 as well. If the NWC was able to construct the NWC River Diversion and associated infrastructure, SGM anticipates that NWC could rely on its Gurley Reservoir water supply during the irrigations, as it currently flows by gravity from Gurley Reservoir to the WTP. Then, the NWC River Diversion could be used to fill raw water storage reservoirs and would supply a secondary source of water during the irrigation season and the primary supply from November through April.

Currently, NWC Reservoir Nos.1 and 2 have adequate storage capacity to fully meet NWC's non-irrigation season demand. Water diverted from the NWC River Diversion could be pumped during the winter to refill NWC Reservoir Nos. 1 and 2 or piped directly into the WTP to potentially decrease the elevated concentrations of organics and TOC in the Gurley reservoir water.

5.0 Reservoir Site Evaluation and Dam Feasibility

5.1 Site Locations

SGM evaluated four potential sites to increase annual storage capacity available to the NWC by up to 450 acre-feet, which are collectively shown on **Figure 2**. Two sites are within the current water treatment plant area of operation and two are more remote sites.

- Lone Cone Reservoir Enlargement. The existing Cone Reservoir is located approximately 36,900 feet to the south of the WTP entrance.
 - Latitude 38.000817°; Longitude -108.256167°



- Elevation: 8,335
- Straw Reservoir. SGM evaluated three Straw Reservoir sites for the construction of a new reservoir, located approximately 18,000 feet south of the WTP entrance.
 - Latitude 38.052056°; Longitude -108.256167°
 - Elevation: 8,054
- NWC Reservoir No. 1 Enlargement. SGM evaluated minor horizontal and vertical modifications to this existing reservoir. Reservoir 1 is located approximately 2,000 feet southeast of the WTP entrance.
 - Latitude 38.000817°; Longitude -108.256167°
 - Elevation: 7,425
- NWC Reservoir No. 3. SGM evaluated three alternatives at this site. NWC Reservoir No. 3 is located immediately north of NWC Reservoir No. No. No. 2.
 - Latitude 38.103693°; Longitude -108.244285°
 - Elevation: 7,350

5.2 Site Conditions

5.2.1 Lone Cone Reservoir Enlargement

The existing Cone Reservoir is a jurisdictional reservoir (DAMID: 600112) with active storage of 1,708 AF and a surface area of 177 acres. It has a high hazard rating as determined by Colorado Dam Safety. The hazard rating is due to the potential loss of life downstream should the dam breach. The reservoir was created by a straight embankment approximately 2,900 feet long, 25 feet high, with a crest width of 10 feet. The reservoir site is near the top of the Goshorn Creek drainage; hence, the contributing watershed is small. It is considered an in-line or on-channel reservoir. It was completed and put into operation in 1912. It is fed by seasonal runoff from the Goshorn Creek and a supply ditch diverting water from Brewster Creek.

The Cone Reservoir site is privately owned, and a future project and continued use of the site would require a cooperative agreement with the owner-operator. There is no gravity-fed option for this reservoir to supply the NWC WTP. However, releases from the Lone Cone Reservoir Enlargement could be delivered (with additional infrastructure) into the Town of Norwood and NWC's raw water irrigation system.

Non-Colorado Department of Public Health and Environment (CDPHE) permitting would entail a jurisdictional permit application to Colorado Dam Safety, U.S. Bureau of Reclamation (USBR) permitting for the National Environmental Policy Act (NEPA), and U.S. Army Corps of Engineer (USACE) permitting for wetland impacts surrounding the current perimeter of the reservoir, as well as to a freshwater-emergence wetland along the toe of the existing dam. A detailed discussion of USACE permitting is provided in Section 7.

The site geology, as derived from the "Scenic Trips into Colorado Geology: Uncompahgre Plateau" map dated 1985, suggests that the Cone Reservoir is situated in the Mancos Shale-Dakota Sandstone (Upper Cretaceous) formations. No site visit has been conducted to verify whether the reservoir is at the Dakota Sandstone contact.

5.2.2 New Straw Reservoir

SGM evaluated three alternatives for a new Straw Reservoir. All three alternatives would create jurisdictional dams and require property acquisitions for access and storage operations. This site is currently undisturbed with a pinon-juniper land cover and grass ground cover. If used, this site would create an in-stream (on-channel) reservoir and, based on its upstream neighboring



reservoir (Gurley Reservoir) would likely be classified as a high-hazard embankment dam by Colorado Dam Safety.

The Straw Reservoir sites would allow for a gravity-fed solution to the NWC WTP by using Gurley Canyon and the South Lateral Ditch.

SGM believe the spillway design would be complex and would need to be sized to address the inflow design flood (IDF) and the cascading risk from Gurley Reservoir should its dam fail during the IDF. The somewhat remote access, and necessary property acquisition and/or easements would present challenges to all three of the alternatives considered for the Straw Reservoir.

Non-CDPHE Permitting would entail a jurisdictional dam permit application to Colorado Dam Safety, depending on the selected option, and USACE permitting for fill and wetlands impacts to a freshwater-emergence wetland within Gurley Canyon at the reservoir site. A detailed discussion of USACE permitting is provided in Section 7.

The geology at the three sites is complex because the three sites exhibit expressions of Jurassic and Lower Cretaceous formations. More specifically, in the lower portion of the site, the Morrison formation is present, and the upper canyon walls are composed of the Burro Canyon formation. Both formations are highly interbedded, making foundation work for a new embankment dam challenging and expensive.

5.2.3 NWC Reservoir No. 1 Enlargement

NWC Reservoir No. 1 is a small reservoir (DAMID: 600130) with active storage of 23 AF and a surface area of 5.2 acres. It is a jurisdictional reservoir with a low hazard rating as determined by Colorado Dam Safety. The hazard rating is due to its proximity to an occupied residence immediately downstream of the main embankment. The reservoir is created by a horseshoe-shaped embankment approximately 1,170 feet long, 16 feet high, with a crest width of 10 feet. The reservoir site is on a shallow ridge; hence, the contributing watershed is very limited, defining it as an off-line reservoir. It was completed and put into operation in 1980. Water from the Gurley Ditch serves as its water supply source.

The site is limited to external horizontal expansion due to surrounding properties and homes. There is potential to improve reservoir storage by deepening the south shoreline area. NWC owns the site.

The site geology, as derived from the “Scenic Trips into Colorado Geology: Uncompahgre Plateau” map dated 1985, suggests that NWC Reservoir No. 1 sits on the line between the Burro Canyon formation (Lower Cretaceous) and the Quaternary alluvium. A visual investigation during a site visit suggests the bottom of the reservoir is defined by the Burro Canyon formation. This will limit low-cost excavation if a decision is made to deepen this reservoir.

5.2.4 New NWC Reservoir No. 3

SGM evaluated three sized alternatives at this site. The alternatives area is situated immediately north of NWC Reservoir No. 2 and would occupy the planned sites for NWC Reservoir Nos. 3 and 4. The NWC Reservoir No. 3 site has waste spoils from the excavation of NWC Reservoir No. 2 on it and is impinged on the east end by wetlands areas. It would reside on lands owned by the State of Colorado, currently leased by the NWC.

One of the three alternatives considered would create a jurisdictional dam, per the Dam Safety Rules and Regulations (2020), thereby necessitating a rigorous dam design process and imposing greater liability on NWC. Access to the site is available from the NWC Reservoir No. 2 embankment top and from the west side of the site.



Two of the alternatives SGM considered could tie into the current NWC Reservoir No. 2 pumping system via gravity. The remaining option would require a supplementary pump to move raw water to the WTP.

Beyond CDPHE permitting, the site would be permitted either a non-jurisdictional or a jurisdictional permit from Colorado Dam Safety, depending on the option selected. A detailed discussion of USACE permitting is provided in Section 7.

The site's geology appears to lie on or near the contact with the Dakota Sandstone (Upper Cretaceous), as evidenced by light-tan sandstone in waste from Reservoir #2.

5.3 Storage Sizing

SGM evaluated possible storage sizing for each alternative using the following methodology:

- Used available LiDAR data to create a surface
 - Accuracy of ± 1 foot was used
- Varied the dam height to estimate the amount of storage capacity created
 - Considered existing topography, possible spillway locations, and other physical constraints
- Relied on the Colorado Dam Safety's various design criteria:
 - High-hazard dam: expect severe property damage and loss of life from failure of the embankment
 - Type of dam: three zones with cutoff trench
 - Zone 1- upstream shell
 - Zone 2 - impervious core(clay)
 - Zone 3 downstream shell.
 - Upstream slope of 3:1
 - Downstream slope of 2:1
 - Freeboard was estimated to be 8 feet (fetch analysis would be needed for final determination)
 - Width of dam crest 25 feet (based on dam height)
 - Width/capacity of spillway (only a preliminary estimate at this level of analysis)
 - Experience with similar dams in the region

Lone Cone Reservoir Enlargement: The decreed conditional storage volume for the Lone Cone Reservoir Enlargement is 4,000 AF. For NWC's sole benefit, SGM evaluated a two-foot rise over the existing reservoir, which would yield an additional 318 acre-feet of new storage based on the interpretation of LiDAR surface data. **Figure 3** shows a depiction of this sized alternative, and a more detailed conceptual design is included as **Appendix C, Figure C1**.

New Straw Reservoir: This conditional structure is decreed for up to 6,000 AF. SGM again notes this water right is owned by Farmers Water, and any storage and subsequent use by NWC would require a contractual agreement with Farmers Water. For this analysis, SGM did not coordinate



with Farmers Water and assumed this capacity would benefit NWC. The three evaluated alternatives at this site had the following storage capacities.

- SR Alt 1 would create 450 AF of new storage.
- SR Alt 2 would create 260 AF of new storage.
- SR Alt 3 would create 310 AF of new storage.

Figure 4 shows a depiction of the three alternatives and more detailed conceptual designs are included as **Appendix C. Figures C2, C3, and C4.**

NWC Reservoir No. 1 Enlargement: SGM found that, due to the locations of downstream homes and the steepness of the current embankment, there is no practical way to significantly enlarge the NWC Reservoir No. 1. Further, this site is constrained by the shallow Burro Canyon formation underlying it. At best, a minor excavation effort in the southeast portion of this site might yield 1 to 2 AF of additional storage. Therefore, SGM did not complete any further analyses for this project.

New NWC Reservoir No. 3: The NWC Reservoir No. 3 is a conditional structure decreed for up to 91.0 AF of capacity. SGM notes the NWC Reservoir No. 4 is another conditional structure near the WTP that is decreed for up to 33.0 AF of capacity. Several of the alternatives are located at or on the NWC Reservoir Nos. 3 and 4 decreed locations, and therefore, the alternatives are called the WTP Alt 1, WTP Alt 2, and the WTP Alt 3. The three evaluated alternatives at this site had the following storage capacities.

- WTP Alt 1 would provide 105.0 acre-feet of new storage
- WTP Alt 2 would provide 73.5 acre-feet of new storage
- WTP Alt 3 would provide 21.0 acre-feet of new storage

Figure 5 shows a depiction of the three alternatives and more detailed conceptual designs are included as **Appendix C. Figures C5, C6, and C7.**

5.4 Alternatives Analysis Cost Estimate

For each of the alternatives considered, SGM prepared an Engineer's Opinion of Probable Cost (EOPC). These EOPCs are based on the conceptual designs shown in **Appendix C** along with planning level costs developed using the Association for the Advancement of Cost Engineering (AACE) Class 4 Criteria. Therefore, the variability in accuracies ranges on the low side (-15 % to -30%) to the high side (+20% to +50%). The following sections summarizes the estimated project cost and resulting unit cost, whereas a more detailed EOPC tabulation for each project is available for review in **Appendix D.**

5.4.1 Lone Cone Reservoir Enlargement

The conceptual Lone Cone Reservoir Enlargement project was estimated to cost \$3,560,032 with a corresponding unit cost of \$11,195/AF.

5.4.2 Straw Reservoir Alternatives

The conceptual Straw Reservoir Alternatives were estimated to cost the following amounts:

- SR Alt 1 \$7,399,057 with a corresponding unit cost of \$16,442/AF
- SR Alt 2 \$6,704,759 with a corresponding unit cost of \$25,788/AF



- SR Alt 3 \$6,431,617 with a corresponding unit cost of \$20,747/AF

5.4.3 WTP Reservoir Alternatives

The conceptual NWC Reservoir No. 3 (WTP Reservoir) Alternatives were estimated to cost the following amounts:

- WTP Alt 1 \$6,240,273 with a corresponding unit cost of \$59,431/AF
- WTP Alt 2 \$5,418,207 with a corresponding unit cost of \$73,717/AF
- WTP Alt 3 \$2,322,337 with a corresponding unit cost of \$106,043/AF

During this project SGM identified that WTP Alt. 1 would be a favorable future reservoir alternative and contracted a geotechnical engineering firm to collect two boreholes to evaluate the feasibility of constructing a dam at this location. While not definitive, the geotechnical analyses indicate the WTP Alt 1 could be constructed near the existing NWC Res. No. 2. The results of the geotechnical analyses are included in **Appendix E**.

6.0 San Miguel River Supply Infrastructure

As previously described only the NWC River Diversion water right would develop a water supply from a new source, the San Miguel River. This section summarizes key information considered in developing representative alternatives for the NWC River Diversion.

6.1 NWC River Diversion and Pipeline Alternatives

Ultimately, SGM evaluated two sites to place the NWC River Diversion structure and pipeline, which are shown on **Figure 6**. From a Colorado water rights perspective, a surface diversion structure located within 500 feet of its decreed location can legally operate under its decree. However, if a surface diversion structure is located more than 500 feet from its decreed point of diversion, the owner of the water right must legally change the point of diversion through a new water court application. Depending upon the circumstances, the legal change in a point of diversion can be a straightforward process. Fortunately, there are no intervening water rights between the NWC River Diversion decreed point of diversion and the Site 1 Pump Station location, which should simplify the process to change the decreed location should NWC desire to develop the NWC River Diversion at the Site 1 Pump Station.

The first location (Alternate 1) would be situated near the U.S. Forest Service (USFS) maintained Upper Bear Creek Campground and is approximately 2,300 feet to the north of the decreed diversion point. The second location considered was within 500 feet of the NWC River Diversion decreed point of diversion. As illustrated in Figure 6, developing a pump station and pipeline near the decreed point of diversion would require a greater length of pipeline than a pump station and pipeline near the USFS campground.

The Site 1 Pump Station (Alternate 1) near the Upper Bear Creek campground, is immediately accessible from Colorado State Highway 145. Ideally the diversion structure would be built on the east side of the San Miguel River to simplify access to power and ongoing maintenance. There is a nearby powerline maintained by San Miguel Power Association (SMPA) approximately 2,000 feet away. SGM understands the current SMPA powerline is single-phase, and the pump station electrical requirements would require three-phase power. One additional complication for this site would be in developing a cooperative agreement with the USFS to allow NWC access to the pump station site for operation and maintenance. Ultimately this site has the least amount of piping and temporary construction impacts. SGM developed a pipeline alignment along an existing two-track



road heading southwest from Site 1. After approximately 3,900 linear feet of piping, SGM determined the most feasible way to install a pipeline up the steep hill directly west towards the NWC WTP would be through a directional drilling/boring operation.

SGM developed two alternatives for the Site 2 Pump Station, which is less than 500 feet to the north of the decree location. Both Alternate Nos. 2 and 3 would divert water from the east side of the San Miguel River to simplify access to power and ongoing maintenance. Once diversions were conveyed across (or underneath) the San Miguel River the two pump station alternatives differ.

Alternate No. 2 would include the construction of a pipeline along an existing two-track road to the south toward Beaver Creek. The Alternate No. 2 pipeline would then connect into the transmission pipeline identified for Alternate No. 1. Ultimately, there is approximately 1,000 extra feet of pipeline that would need to be constructed as compared to Alternate No. 1. The Site 2 pump station does have a nearby SMPA line. Like Alternate No. 1, the Site 2 Pump Station would require that SMPA upgrade service to three-phase power. Given that Alternate No. 2 would require an additional 1,000 linear feet of pipe, SGM didn't consider this alternate further. Should a change in decreed location for the NWC River Diversion water right not be feasible, then NWC could reevaluate the cost associated with Alternate 2.

Finally, SGM evaluated direction boring through the steep hill between the San Miguel River and Beaver Creek as Alternate No. 3. Ultimately, boring through the steep hillside would add approximately \$3.7M to the project costs and therefore wasn't considered further.

6.2 NWC River Diversion Pump Station and Pipeline

The relationship between the decreed diversion point on the San Miguel River and the NWC Reservoir No. 2 at the NWC WTP, presents significant challenges in developing a reliable delivery system. **Figure 6** illustrates the spatial relationship between the point of diversion and the WTP. Ultimately, the pipeline connecting the proposed pump station on the San Miguel River to the NWC Reservoir No. 2 is 3.17 miles long. The vertical aspect of the project necessitates that the pumping system lift the design flow rate up 900 vertical feet, plus overcoming friction losses.

SGM has estimated that to deliver a steady 400 gallon per minute (gpm) flow rate, a 150- to 200-horsepower pumping system will be needed to cover the estimated total dynamic head of 918 feet. A pumping system of this capacity will require a three-phase power supply, a backup generator, and a redundant pump to ensure reliable delivery when river water is available. SGM has envisaged the pumping system to comprise a river diversion channel feeding into a concrete wet-well/foundation, with a building on top of the wet-well housing the pumps and controls.

The diversion would extend from the right bank into the river, using a J-vane weir that transitions into a concrete channel with a side-discharge chute to manage sand and gravel accumulation. The concrete channel would have an inclined debris screen to capture wood, vegetation, and large stones. The diversion would require NEPA approval from the US Forest Service and a permit from the United States Army Corps of Engineers (USACE), which is further described in Section 7.

6.3 Pipeline

The preferred alternative alignment (Alt 1) for the pipeline from the pump station to the WTP has four distinct segments due to terrain, operating pressure, and finished surfaces. The following table breaks out the pipeline configuration over its 3.17 miles.



Table 1: Pipeline Segment Configurations				
Segment	Length (Ft.)	Pipe Material	Surface	Subsurface
Pump Station to Canyon Wall Site	3,600	FlexSteel	Soil/River Crossing	Open Trench
Canyon Wall	3,900	FlexSteel	NA	Bore
Gravel Road	3,770	DR-21, HDPE	Gravel	Open Trench
Paved Road	5,470	DR-21 HDPE	Paved	Open Trench

The operating pressure of 918 feet of TDH (400 pounds per square inch (psi)) requires special consideration of pipeline materials to withstand the related stress of pump cycles and the sustained high-pressure operating environment. These operating conditions are then coupled with the need for a directional bore through sedimentary formations for 3,900 feet horizontally and 900 feet vertically. These construction and operating requirements necessitate specialized pipe selection to deliver a reliable, long-lasting pipeline solution. SGM has identified a pipe product that combines high-density polyethylene (HDPE) and steel to meet the identified criteria and can be pulled through a directional bore. The product is known by the trade name FlexSteel. Note that similar products are on the market, allowing for an equivalent specification.

6.4 San Miguel River Supply Infrastructure Cost Estimate

Appendix D includes the detailed EOPC for the NWC River Diversion Alternate 1. Costs were developed using the AACE Class 4 criteria. The variability in accuracies ranges from the low side (-15 % to -30%) to the high side (+20% to +50%). Table 2 summarizes the estimated costs for the NWC River Diversion, Alternate 1.

Table 2: NWC River Diversion, Alternate 1			
EOPC Summary - AACE Class 4			
Item	Hard Costs	Soft Costs and Contingency	Totals
UG Pipeline	\$1,594,533	\$382,688	\$1,977,220
Bored Pipeline	\$4,898,465	\$897,889	\$5,796,354
Pump Station	\$2,386,250	\$530,941	\$2,917,191
Subtotal	\$8,879,248	\$1,811,517	
ENGINEER'S OPINION OF TOTAL COSTS			\$10,690,765
Low End Estimate		-30%	\$7,483,600.00
High End Estimate		50%	\$16,036,200.00



7.0 Environmental Evaluation and Permit Requirements

All the reservoir alternatives and the NWC River Diversion alternate would require local, state, and federal permitting actions. This section summarizes the various permits SGM anticipates would need to be obtained for each project. Further, if federal funding was obtained to construct any of these projects, the federal nexus would require all federal permitting regulations be followed.

7.1 Section 404 of the Clean Water Act (Wetlands and Waters of the United States)

SGM conducted a wetland due diligence survey on June 17, 2026, to assess the extent of wetlands and jurisdictional waters in the vicinity of the proposed Straw and existing Cone Reservoir, as well as the extent of wetlands in the vicinity of the Norwood Water Treatment Plant and existing reservoir 1 (**Figure 2**). Unfortunately, private land surrounds the proposed Straw Reservoir location and the Cone Reservoir, preventing SGM biologists from conducting a close inspection of the two locations. However, SGM reviewed aerial imagery, the National Wetland Inventory (NWI), and NRCS soil survey maps, which provide a high level of confidence in the extent of wetlands in the proposed project areas.

7.1.1 Lone Cone Reservoir Enlargement

SGM reviewed aerial imagery and identified wetlands around the perimeter of the reservoir. Wetland plant species along most of the perimeter of the Cone Reservoir project area likely include reed canary grass, cattails, willows and a variety of sedges and rushes. Upland vegetation consisted of rabbitbrush, sagebrush, mullen, soft brome, and pinyon and juniper trees. In addition, emergent and scrub shrub wetlands have developed on the downstream side of the Cone Reservoir dam likely due to seepage. Wetland hydrology to the reservoir is provided by water from the Cone Ditch (**Figure 8**).

Changing the dam height and resulting pool elevation at Cone Reservoir would result in inundation of existing wetlands. Utilizing National Wetlands Inventory data, SGM estimates potential permanent wetland loss of approximately 8.53 acres, which by current regulatory standards is a very large amount. The 8.53 acres of permanently inundated wetlands would require a Clean Water Act Individual Permit (IP), which is an expensive and time-consuming process. The preparation and approval timeline for an IP range between 12 and 18 months.

The application for the IP would include an alternatives analysis that demonstrates that permanent impacts to wetlands have been avoided and minimized to the greatest extent practicable, and that an alternative does not exist that meets the project's purpose and need. There is no wetland mitigation bank that services the project area, which requires the applicant to construct wetlands to replace those lost by the proposed action. A mitigation plan would be prepared as part of the IP for the replacement of an anticipated ratio of 1.5 acres of constructed wetlands for each acre of permanently impacted. The replacement ratio is at the discretion of the USACE. Once the mitigated wetlands were constructed, NWC would have to monitor and maintain the replacement wetlands for a minimum of 5 years until constructed wetlands are well established and self-sustaining.



With the preparation of an IP application is the acquisition of the CWA 401 Water Quality Certification from CDPHE's Water Quality Control Division demonstrating the proposed project would not adversely affect State water quality standards. This is a separate, but parallel process to the IP that would entail an analysis of possible effects on water quality from the project. It is likely that water quality sampling would be required before, during and after construction for an agency designated period of time. Depending on project scope, CDPHE charges a fee to process a Section 401 Water Quality Certification.

7.1.2 New Straw Reservoir

Based on observations made on June 17, 2026, the plant community in the vicinity of the proposed Straw reservoir project area consisted of sagebrush and pinyon-juniper woodlands. Pockets of emergent and scrub-shrub wetlands occur along the margins of the Gurly Ditch. In addition, wetlands have developed on the downstream side of the Gurly Reservoir dam (**Figure 9**).

The proposed Straw Reservoir alternatives would be constructed on channel of Gurly Ditch, which is not a USACE approved design approach for new reservoirs or ponds. It is highly unlikely the Corps would permit any of the Straw Reservoir alternatives, but if they did the Straw Reservoir alternatives would require a Clean Water Act Section 404 Individual Permit (IP) due to the amount of potential channel and wetland loss based on available desktop data. Utilizing National Wetlands Inventory data, SGM estimates potential permanent wetland loss ranging between 1.89 acres and 2.15 acres. The preparation and approval timeline for an IP range between 12 and 18 months.

7.1.3 WTP Reservoir 3

Wetlands were delineated in the vicinity of the WTP and existing reservoir during the redundant waterline project. All three proposed WTP alternatives are currently proposed to be constructed outside of delineated wetland boundaries (**Figure 10**). It is likely pipelines connecting the new reservoir to the existing infrastructure near the WTP would likely cross wetlands. Permitting wetland pipeline crossings is straightforward utilizing CWA Nationwide Permit 58-Utility Line Activities for Water and Other Substances (NWP-58). Buried pipeline crossings through wetlands are generally considered temporary impacts, avoiding permanent wetland impacts and the need for wetland mitigation construction.

7.1.4 San Miguel River Diversion, Pump Station, and Pipeline

In addition to the EA, the project would require **NWP-58 – Utility Line Activities for Water and Other Substances** authorization from the USACE assuming permanent impacts to wetlands and Waters of the United States (WOTUS) can be held to less than ½ acre, and 3/100 of an acre respectively. Utilizing National Wetlands Inventory data, SGM estimates potential permanent wetland loss of approximately 0.076 acres for Alternate 1 and 0.082 acres for Alternate 2. (**Figure 11**). If permanent wetland and WOTUS losses exceed those limits, an Individual Permit would be required, which dramatically increases costs and timelines. This analysis assumes NWP-58 would be applicable.

- Compensatory mitigation would be required for permanent wetland impacts exceeding 1/10 acre and river channel loss exceeding 1/300 of an acre. However, this estimate assumes a USACE mitigation plan would not be necessary.



- Due to the Colorado River Basin endangered fish, which the San Miguel River is a part of, Section 7 consultation with the USFWS will occur. Endangered species consultation with USFWS is approximately a 120-day process.
- Cultural Resource Surveys will be required in accordance with Section 106 of the National Historic Preservation Act (NHPA) and would be components of the NEPA and Clean Water Act permit processes.

7.1.4.1 Current Decreed Diversion Location Alternative

The current decreed location for the pump station is approximately 1,800 feet upstream of the Lower Beaver Campground and the confluence with Beaver Creek. The current decreed location is on BLM land and there is USFS land boundary approximately 40 feet away, as well as a private land boundary in close proximity to the south (**Figure 6**).

Constructing a pump station at the current decreed location would require NEPA approvals from the BLM and USFS, as well as Clean Water Act authorization from the USACE. It would also require additional pipe to reach Beaver Creek Canyon. The current decreed diversion point may result in the pump station being constructed on a narrow floodplain terrace adjacent to the San Miguel River requiring a floodplain study to determine the impacts associated with constructing the pump station in order to acquire the San Miguel County floodplain permit. Additional details on the regulatory process are provided below and would be similar to constructing the pump station and diversion at the Lower Beaver Campground.

7.1.4.2 Lower Beaver Campground Pump Station Alternative

The preferred location for the pump station would be on the east side of the river within or adjacent to the Lower Beaver campground, which is managed by the BLM and located at the confluence of the Beaver Creek and the San Miguel River. A small portion of the campground falls on USFS land (GMUG) requiring additional agency coordination. Relocating the point of diversion to the Lower Beaver Campground will require amending the current water right decree.

A new diversion in the river would direct water to the pump station intake. A water pipeline from the pump station would be installed below and towards the west bank of the river. From the west bank of the river, the pipeline would continue west for approximately 2,853 feet along the canyon's toe of slope on BLM land buried within an existing two track road running parallel to Beaver Creek. From that point, the pipeline would be constructed using directional drilling and bored up the face of Beaver Creek Canyon for 3,838 feet resulting in an approximate elevation gain of 900 vertical feet. From the top of the canyon, the pipeline would be buried within the county road right-of-way for approximately 9,964 feet until it reaches the NWC WTP property.

7.2 National Environmental Policy Act (NEPA)

Depending on the funding source, compliance with NEPA would be required for any of the proposed alternatives. The extent of work required for NEPA compliance depends on the amount of wetland impact and magnitude of associated impacts.

7.2.1 NEPA – Reservoir Alternatives

It is likely the funding agency (state or federal) would require the preparation of an Environmental Assessment (EA) to determine the potential project impacts associated with reservoir construction. However, it is possible that construction of a reservoir adjacent to the WTP would



require a Categorical Exclusion (CATEX) and could tie into Norwood's separate redundant waterline EA. It is unlikely that the proposed reservoir project would trigger the need for an Environmental Impact Statement (EIS) at the existing WTP site, which would be significantly more time and cost.

7.2.2 NEPA – San Miguel River Diversion, Pump Station, and Pipeline

Constructing a new diversion and pump station adjacent to the San Miguel River would involve oversight by the US Forest Service (USFS), Bureau of Land Management (BLM), US Fish and Wildlife Service (USFWS), USACE, Colorado Parks and Wildlife (CPW), and San Miguel County.

A significant portion of the proposed project would be constructed on BLM land. Therefore, BLM would likely serve as the lead federal agency for the NEPA analysis. SGM is anticipating an Environmental Assessment (EA) would be prepared to meet federal NEPA requirements. Natural resource surveys for BLM sensitive wildlife and plants would be necessary. A cultural resource survey would be needed for the entire project alignment. Depending on project timing, an EA typically involves a 12-month timeline from preparation to approval. However, given the multiple federal agencies that would be involved and most of which are short-staffed due to recent government layoffs, the timeline may be as long as 18 months.

Federal agencies now require applicants to sign a cost recovery agreement to pay for the time agency technical specialists review and analyze proposed actions on government land. The potential cost recovery range is listed below for the proposed pump station and pipeline.

7.3 Endangered Species Act (ESA)

It would be necessary to make sure the selected alternative does not adversely affect any federal or Colorado-state listed threatened or endangered (T&E) species. Depending on the selected alternative, a combination of agency coordination, desktop research and field work/surveys maybe be required to ensure compliance. On May 29, 2026, a list of potential Threatened and Endangered species for each alternative was requested from the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Construction (IPaC) database for each reservoir alternative, which is summarized in **Table 3**. Utilizing the information from the IPaC tool, the following species were identified as being potentially affected by activities in the project area.

Gray Wolf (Canis lupus; Experimental Population, Non-Essential): The Gray Wolf, being a keystone predator, is considered an integral component to ecosystems to which it typically belongs. In 2021, gray wolves were documented as reproducing, and thus as continuously occupying habitat in Colorado, and in 2022 the USFWS listed the gray wolf as Endangered in Colorado. In 2023, an experimental population of gray wolves was re-introduced near Granby in Colorado. Based on CPW's current collared gray wolf activity, it appears wolves may be as far south as the northeast corner of Montrose County.

The project location lacks essential features and habitat characteristics to support this species and does not overlap with critical habitat for this species. The project would have no activities which would meaningfully impact the ability for wolves to disperse through the area, in their unlikely presence, and would have no meaningful impact on prey populations. This project would have **no effect** on the gray wolf or their ability to forage, disperse, or reproduce in the greater area.

Gunnison Sage-grouse (Centocercus minimus -Threatened). Historically, Gunnison sage-grouse were found in the southwestern portion of Colorado, southeastern Utah, northeastern Arizona,



and northwestern New Mexico. Currently, approximately 5,000 breeding Gunnison sage-grouse occur among 7 separate populations in southwest Colorado and southeast Utah. The largest population, about 4,000 birds, inhabits the Gunnison River Basin. Gunnison sage-grouse require sagebrush habitats throughout the year for food and cover. With the exception of some insects in the summer, the year-round diet of adult grouse consists of leafy vegetation. Forbs dominate the summer diet, and sagebrush leaves are used the rest of the year. In the spring, sage-grouse gather on leks.

The proposed Straw and the enlargement of the Cone Reservoir fall within critical Gunnison Sage Grouse habitat including breeding habitat (**Figures 5 and 6**). It is likely the USFWS would make a determination that those reservoir projects would result in a **may effect likely to adversely effect** Gunnison sage-grouse. Section 7 consultation with USFWS would occur prior to any project approvals or implementation.

Mexican Spotted Owl (*Strix occidentalis lucida*; Threatened): The Mexican spotted owl occurs in forested mountains and rocky canyonlands throughout the southwestern U.S. and Mexico, usually nesting in caves or on cliff ledges in steep-walled canyons. The project location lacks essential features and habitat characteristics to support this species and does not overlap with critical habitat for this species. The project would have **no effect** on Mexican spotted owl or designated Critical Habitats.

Colorado River Endangered and Threatened Fish Species: The USFWS lists the Bonytail (*Gila elegans*), Colorado pikeminnow (*Ptychocheilus lucius*), Humpback Chub (*Gila cypha*), and the razorback sucker (*Xyrauchen texanus*) as potentially being impacted by this project. These species depend on the larger, warmer stretches of the river. The project would not impact occupied habitats or water quality. Furthermore, the project would implement sediment control to minimize indirect impacts downstream. Water depletions to critical habitat for Colorado River endangered fishes are mitigated by the Upper Colorado River Basin Endangered Fish Recovery, per the USFWS's 1999 Colorado River Programmatic Biological Opinion. The Recovery Program works to recover the four species while allowing continued and future water development. However, a new reservoir would result in increased water depletions from the San Miguel River Basin. Therefore, it is likely the proposed reservoir projects regardless of alternative **may effect likely to adversely effect** Colorado River endangered or threatened fish species. Consultation with the USFWS would be necessary.

Monarch Butterfly (*Danaus plexippus*; Proposed Threatened): The USFWS lists the monarch butterfly as a Candidate species, which is not afforded full protection under the ESA; however, the USFWS encourages their consideration in environmental planning, and the USFWS regulatory guidance indicates that Candidate species should be treated similarly to Proposed Species regarding inter-agency consultation requirements. Informal consultation is requested when a provisional "is likely to jeopardize" determination is reached for a Candidate species (USFWS 1998).

The project would result in the loss of vegetation, which could result in potential direct impacts to chrysalis and caterpillars and result in a minor reduction of foraging vegetation available to adult butterflies. This may result in minor, localized impacts to monarch butterflies but is not expected to alter the species' overall range, distribution, or life history patterns.

Suckley's Cuckoo Bumble Bee (*Bombus suckleyi*; Proposed Endangered): The Suckley's Cuckoo Bumble Bees occurs in western meadows and grasslands at various elevations, often within forest or subalpine zones. Their habitat mirrors that of their host species, the western bumblebee, which



they parasitize. No critical habitat has been designated for this species. The project would result in the loss of vegetation, which could result in potential direct impacts to host bumble bee colonies. This may result in minor, localized impacts to bumble bees but is not expected to alter the species' overall range, distribution, or life history patterns. The project would have **no effect** on Suckley's Cuckoo Bumble Bee.

The San Miguel River is part of the Colorado River Basin and protections for T&E fishes falls under Section 7 of the ESA. Consultation with the USFWS will be necessary. The NWC would need to determine the additional water depletions associated with new reservoir construction, and USFWS would make the determination whether project depletions are consistent with Upper Colorado River Endangered Fish Recovery Program. It is important to note that Section 7 approval also tied to CWA Section 404 permit approval.

In addition to water depletions associated with a new reservoir requiring ESA Section 7, the proposed Straw reservoir and improvements to Cone Reservoir fall within critical habitat for the Gunnison Sage Grouse requiring additional Section 7 consultation with the USFWS. The result of USFWS Gunnison Sage Grouse consultation would likely result in timing stipulations and no surface occupancy during certain times of the year limiting the construction season for reservoir construction or improvements.

Table 3: USFWS IPaC Summary Table. Threatened, Endangered, or Candidate species that might occur in the vicinity of the proposed reservoir alternatives

Project Alts	Gray Wolf	Mexican Spotted Owl	Gunnison Sage Grouse	CO Pike Minnow	Razor-back Sucker	Bony-tail	Hump-back Chub	Silver-spot Butterfly	Suckley's Bumble Bee	Monarch Butterfly
Lone Cone Reservoir	x	x	x	x	x	x	x	x	x	x
Straw Reservoir	x	x	x	x	x	x	x	x	x	x
WTP Reservoir	x			x	x	x	x	x	x	x

7.4 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) focuses on regulating the “taking” of migratory birds and introduced the concept of “take” to federal law. Take (defined at 50 CFR 10.12) is “to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt” any of the foregoing can be intentional or unintentional, and occur through several means” (USFWS Migratory Bird Permits 2003). The USFWS Information for Planning and Consultation (IPaC) report (USFWS 2026), identified numerous bird species that could occupy the various proposed project locations. Depending on the selected alternative and the proposed timing of construction, nesting bird surveys will likely be necessary prior to construction.

7.5 Cultural Resources

Cultural resources are protected by Section 106 of the National Historic Preservation Act (NHPA). A cultural resource study would have to be completed for the selected alternative, if one does not already exist. A Class 3 cultural resource study and associated report would be prepared and submitted to the State Historic Preservation Officer (SHPO) for review as part of the NEPA analysis and CWA permit application. The Corps and CDPHE would consult with the SHPO to



determine if the proposed action would impact cultural resources. If it is determined that cultural resources may be impacted, mitigation of those resources may be necessary. Cultural resource mitigation can vary depending on the resource. Worst case scenario may require data recovery (excavation) of the cultural site in the vicinity of the project area, which can be expensive and time consuming.

7.6 Federal Lands

A portion of the Cone Reservoir falls under federal ownership, requiring engagement with that agency and their potential regulatory requirements.

7.7 Private Land Ownership

The proposed Straw Reservoir alternatives and the improvements to the Cone Reservoir would require numerous easements from private landowners, which could be difficult to acquire, adding unknown delays and potential costs to project timelines.

7.8 State Land Board

The proposed WTP Reservoir would fall entirely within Colorado State lands. There are two potential paths for the State Land Board to authorize the reservoir. The first possible path is for the applicant to purchase a Right of Way (RoW) easement from the State Land Board, which is a one-time payment in full. The second possible path is a lease agreement with the State Land Board, which would include annual payment.

Typically, leases have a specified lifespan specified by the Land Board. The possibility exists that the lease agreement may specify a “Held by Production” type of lease that is typical of oil and gas development on state lands. A Held by Production lease would extend the lease as long as the reservoir was serving its function to provide water for irrigation by its authorized users.

In addition to leasing the land for the reservoir, an additional lease would be required for the applicant to utilize locally sourced materials such as rock, soil, or clay for construction of the reservoir dam and other infrastructure such as an access road. Finally, the State Land Board review and approval process is estimated to take between four to six months. Based on previous discussions with the SLB, SGM judges that a lease or RoW purchase is viable.

7.9 Institutional Considerations

Several impacts and institutional considerations that will need to be addressed in order to implement the design, permitting, and eventual construction of the proposed action. In summary, key considerations include:

- The Ditch Company will need to coordinate with the DWR on the operations of the proposed Reservoir.
- The proposed reservoirs would require consultation with San Miguel County, and may require a floodplain development permit, construction dewatering permit, and a fugitive dust permit from CDPHE.
- Completion of the final design will require approval by the State Engineers Office (SEO) prior to putting the project out to bid by construction contractors. The State’s Dam Safety Branch has many requirements before approval, including a maximum probable storm analysis to determine the size of the spillway, specifications for dam materials (core, drains and cover), piezometers and monitoring equipment, outlet works type and operation, and other.



7.10 Estimated Costs for Environmental Permitting

The primary costs for environmental permitting of the enlargement of Cone Reservoir are associated with meeting the lead agency's NEPA guidelines and obtaining the required Section 404 permit and related requirements, as discussed above. The Section 404 IP permit application would include a detailed alternatives analysis that meets the requirements of the 404(b)(1) Guidelines and the Corps Public Interest Review Criteria. A Final Mitigation Plan would be required that meets the standards of the 2008 Final Mitigation Rule. The costs for mitigation would depend on the Mitigation Ratio Checklist process that the Corps uses to determine the appropriate amount of mitigation needed to replace lost aquatic resource functions. However, constructing and maintaining wetlands would result in significant costs. Constructing a new reservoir at the WTP site would allow for much faster and cost-effective regulatory permitting (NWP-58). A rough estimate of potential regulatory costs is summarized below:

7.10.1 Estimated Environmental Regulatory Costs for Increasing the Capacity of Cone Reservoir

- Section 404 Individual Permit (including alternative analysis, mitigation plan and 401 certification): \$60,000.
- Cultural Resources: \$20,000.
- EA for NEPA: \$35,000.
- Wildlife and miscellaneous Studies: \$15,000.
- Mitigation construction costs to create 1 acre of replacement wetlands would be approximately \$80,000 per acre. Construction of 8.5 acres of wetlands could cost upwards of approximately \$680,000.
- Acquiring Easements from private landowners: \$10,000 per acre.

7.10.2 Estimated Environmental Regulatory Costs for Constructing a New Reservoir Adjacent to WTP

- State Land Board lease process: preliminary approval \$12,000 Final Lease \$TBD
- Section 404 Permit NWP-58 for waterline crossings between the WTP and the reservoir \$10,000.
- Cultural Resources: \$10,000. It might be possible to tier to the existing Cultural Resource report for the redundant waterline project.
- EA for NEPA: \$15,000. It might be possible to tier to the existing redundant waterline EA.
- Wildlife and miscellaneous Studies: \$10,000.
- Acquiring lease from State Land Board: \$12,000
- Wetland mitigation (construction): No mitigation required if permanent impacts are less than 0.1 acres of permanent wetland impacts.

7.10.3 Estimated Environmental Regulatory Costs for Constructing the NWC River Diversion

The following are estimated costs to complete BLM's NEPA process and cost recovery, USACE NWP-58 application, San Miguel County Floodplain Permit, and cultural resource surveys. Additional environmental regulatory costs will likely include a San Miguel Special Use Permit for potential impacts to wetlands and waters of the county. A Class III Cultural Survey would be a component of the NWP-58 and BLM EA.



- Wetland and Waters delineation from decreed location to campground = \$8,500
- Clean Water Act USACE NWP-58 application = \$15,000
- Environmental Assessment preparation = \$45,000
- BLM Cost Recovery fee estimated range = \$13,000 to \$62,000
- San Miguel County Special Use Permit = \$9,000
- Class III Cultural Resource Survey = \$35,000

7.11 Natural Resource Constraints Summary by Alternative

- Straw Reservoir Alternatives – SR Alt 1, SR Alt 2, SR Alt 3:
 - On channel reservoirs are not approved practice and permitted by the USACE. It is unlikely this alternative would make it through regulatory review and approval.
 - The proposed Straw Reservoir is located within Gunnison Sage Grouse Critical Habitat requiring ESA Section 7 consultation with USFWS. At a minimum the USFWS will require construction timing stipulations and may require monitoring GSG activity in the vicinity of the project.
 - Additional water depletions from the San Miguel River Drainage would require Section 7 consultation with the USFWS for potential impacts to endangered fish.
 - Numerous property easements with private landowners would be required, and likely difficult if not impossible to acquire in a timely fashion increasing project timeline.
- Lone Cone Reservoir Enlargement Alternative:
 - Raising the dam height and pool elevation would likely result in the need for a CWA Individual Permit, which are time consuming and expensive to acquire.
 - Raising the dam height and pool elevation would result in the permanent loss of fringe wetlands around the reservoir. Wetland loss above 0.10 acres requires compensatory mitigation (wetland construction), which is potentially a significant increase in project cost and long-term maintenance.
 - A portion of the reservoir falls under federal ownership. Specific agency requirements and conditions of approval would likely add to project cost and timeline.
 - Easements with adjacent private landowners would be necessary.
 - Cone Reservoir is located within Gunnison Sage Grouse Critical Habitat requiring ESA Section 7 consultation with USFWS. At a minimum the USFWS would require construction timing stipulations and may require monitoring GSG activity in the vicinity of the project.
 - Additional water depletions from the San Miguel River Drainage would require Section 7 consultation with the USFWS for potential impacts to endangered fish.
- WTP Reservoir Alternatives – WTP Reservoir Alt-1, WTP Reservoir Alt-2, WTP Reservoir Alt-3:
 - Wetlands have been previously delineated in the vicinity of WTP and Reservoir 1. Locating Alt-1, Alt-2, and Alt-3 fill slopes away from mapped wetlands would eliminate permanent wetland impacts associated with reservoir construction.
 - Pipeline crossings between the three alternatives and the WTP would require CWA NWP-58 – Utility Line Activities for Water and Other Substances. Wetland impacts



- with the pipeline crossings should be temporary in nature and not require wetland mitigation.
 - Additional water depletions from the San Miguel River Drainage would require Section 7 consultation with the USFWS for potential impacts to endangered fish.
 - No additional T&E impacts are anticipated associated with WTP Reservoir Alternatives.
 - State Land Board leases have reasonable approval timelines and should not be difficult to acquire.
 - The WTP alternatives are the less environmentally impactful and straight forward to permit.
- NWC River Diversion Alternatives – Alternate 1 and Alternate 2:
 - Constructing a new diversion and pump station adjacent to the San Miguel River would involve oversight by USFS, BLM, USFWS, USACE, CPW, and San Miguel County.
 - A significant portion of the proposed project would be constructed on BLM land. Therefore, BLM would likely serve as the lead federal agency for the NEPA analysis.
 - Wetlands are depicted in the NWI mapping in the vicinity of Alternate 1 and Alternate 2. Locating Alternate 1 and Alternate 2 fill slopes away from mapped wetlands would eliminate permanent wetland impacts associated with the pump station and pipeline construction.
 - Pipeline crossings for the two alternates would require CWA NWP-58 – Utility Line Activities for Water and Other Substances. Wetland impacts with the pipeline crossings should be temporary in nature and not require wetland mitigation.
 - Additional water depletions from the San Miguel River Drainage would require Section 7 consultation with the USFWS for potential impacts to endangered fish.
 - No additional T&E impacts are anticipated associated with pump station and pipeline alternates.
 - The pump station and pipeline project has lower environmental impacts and straight forward to permit.

7.12 Permitting Schedule

Based upon SGM's experience, we anticipate the permitting portion of the project could be completed over the following timeframes.

- Section 404 Permit: assume 12-18 months for preparation of application information and processing of the request by the Corps.
- NEPA Permitting Timeline: If the Cone Reservoir, Straw Reservoirs, or San Miguel River Pump Station alternatives are selected, it is likely that an Environmental Assessment would be required with an approximate timeline of 12 to 18 months from initiation to agency approval. For the WTP Reservoir alternatives, it is likely a Categorical Exclusion would be required with an approximate timeline of 6 to 9 months from initiation to agency approval.
- Other environmental and cultural resources studies and approvals (including 401 Certification) would occur during the same timeframe.



8.0 Evaluation Criteria

SGM performed a Multi-Criteria Decision Analysis to evaluate various weighted criteria for each reservoir alternative. The criteria and weights are listed below. Each project was ranked for each criteria with a minimum score of 0 and a maximum score of 10. The higher the resultant score, the more preferable an alternative is for the Multi-Criteria Decision Analysis.

Table 4. Reservoir Multi-Criteria Decision Analysis Criteria		
Criteria	Percent Weight	Description
Environmental Permitting Feasibility	15%	Criteria based on what is the likelihood that the USACE would permit a new reservoir alternative. (0 = not feasible, 10 = minimal permitting requirements)
Storage Increase Quantity	15%	Criteria based on the amount of additional storage provided by each alternative, with higher scores assigned to alternatives that produce greater usable storage volume. (0 = no increase, 10 = 1,000 AF increase)
Cost	10%	Criteria based on relative capital cost and cost effectiveness, including total project cost and cost per acre-foot of new storage. (0 = high cost, 10 = low cost)
Easement Coordination/ Acquisition	10%	Criteria based on the number and potential difficulty of acquiring easement that would allow the construction of the proposed reservoir. (0 = difficult, 10 = straightforward or already in place)
Grant Criteria	10%	Criteria based on how well each alternative aligns with likely grant funding priorities, including drought resiliency, water supply reliability, project readiness, and public benefit. (0 = does not meet criteria, 10 = meets all criteria)
High Hazard Embankment?	9%	Criteria based on whether the alternative would involve a high-hazard embankment dam and the associated design, (0 = not feasible, 10 = minimal permitting requirements)
Water Supply Availability	8%	Criteria based on the reliability and legal and physical availability of the water supply expected to serve each alternative. (0=no new water supply, 10=1,000 AF firm yield increase)
Environmental Permitting Requirements	7%	Criteria based on whether there are potential red flags that would prohibit the natural resource regulatory agency from authorizing the proposed activity. (0=many requirements, 10=very few requirements)
Maintenance/Burden on NWC staff	6%	Criteria based on the anticipated level of operational complexity, routine maintenance needs, monitoring, and staff time required after implementation. (0=high burden, 10= low burden)
Implementation Timeline	6%	Criteria based on the expected duration and complexity of design, permitting, land acquisition, agency review, and construction before the alternative could be placed in service. (0=slower, 10=quicker)
Operations & Maintenance Cost	4%	Criteria based on anticipated long-term operating costs, including energy, inspections, repairs, reservoir maintenance, and other recurring expenses.



		(0=high cost, 10=low cost)
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Appendix E shows the detailed Multi-Criteria Decision Analyses table for the individual reservoir alternatives.

Table 5. Final Reservoir Alternative Scoring			
Alternative Name	Description	Total Score	Resulting Alternative Rank
LCR Alt	Lone Cone Reservoir Enlargement	5.4	4
SR Alt 1	New Straw Reservoir Alt 1	3.2	5
SR Alt 2	New Straw Reservoir Alt 2	3.2	5
SR Alt 3	New Straw Reservoir Alt 3	3.3	7
WTP Alt 1	Water Treatment Plant Alt 1	6.8	1
WTP Alt 2	Water Treatment Plant Alt 2	6.6	2
WTP Alt 3	Water Treatment Plant Alt 3	6.6	3

SGM performed a Multi-Criteria Decision Analysis to evaluate various weighted criteria for each pump station and pipeline alternative. The pump station and pipeline criteria and weights different than the reservoir criteria and are listed below. Each project was ranked for each criteria with a minimum score of 0 and a maximum score of 10. The higher the resultant score, the more preferable an alternative is for the Multi-Criteria Decision Analysis.



Table 6. Pump Station and Pipeline Multi-Criteria Decision Analysis Criteria		
Criteria	Percent Weight	Description
Water Court	20%	Criteria based on whether the alternative requires a water court process. (0 = uncertain water court outcome, 10 = no water court)
Site Access	20%	Criteria based on the ability to access the proposed NWC River Diversion pump station and temporary construction access. (0 = no existing access, 10 = Highway/driveway access)
Environmental Permitting Feasibility	10%	Criteria based on whether there are potential red flags that would prohibit the natural resource regulatory agency from authorizing the proposed activity. (0 = significant permitting challenges, 10 = few permitting challenges)
Cost	25%	Criteria based on relative capital cost and cost effectiveness, including total project cost and cost per acre-foot of new storage. (0 = high cost, 10 = low cost)
Coordination/Acquisition	6%	Criteria based on the number and potential difficulty of acquiring easement that would allow the construction of the proposed reservoir. (0 = difficult, 10 = straightforward or already in place)
Grant Criteria	10%	Criteria based on how well each alternative aligns with likely grant funding priorities, including drought resiliency, water supply reliability, project readiness, and public benefit. (0 = does not meet criteria, 10 = meets all criteria)
Environmental Permitting Requirements	9%	Criteria based on whether the permitting requirements and/or associated costs would prohibit the proposed activity. (0=many requirements, 10=very few requirements)

Appendix E shows the detailed Multi-Criteria Decision Analyses table for the individual NWC River Diversion alternatives.

Table 7. Final Pump Station and Pipeline Alternative Scoring			
Alternative Name	Description	Total Score	Resulting Alternative Rank
Alt 1	Alt POD (Site 1) with trenched pipeline along Beaver Creek and directional drilled pipeline after	6.7	1
Alt 2	Original decreed POD (Site 2) with longer trenched pipeline, along San Miguel River and Beave Creek. DD pipeline after	6.0	2
Alt 3	Original decreed POD (Site 2) with directional drilled pipelines (minimal open trench) and more direct route	5.8	3



9.0 Conclusions and Recommended Alternative

Based upon the work completed for this Alternatives Analysis, SGM has developed the following conclusions:

- SGM concluded that the WTP Alt 1 is the best storage alternative for NWC to consider in the near term.
 - The environmental permitting feasibility is the highest for WTP alternatives. The permitting requirements are straightforward and not burdensome.
 - The storage increase quantity is 105.0 AF, at a cost of approximately \$60,000 per acre-foot. Other WTP alternatives have a higher cost per acre-foot due to lower storage amounts.
 - WTP Alt 1 easement coordination/acquisition is straightforward.
 - The WTP Alt 1 could store water from the existing Gurley Reservoir, new Straw Reservoir, or diversions from the NWC River Diversion structure.
 - As WTP Alt 1 is located adjacent to existing facilities where staff already maintain infrastructure, the location of the new reservoir would not be an undue additional maintenance burden on NWC staff.
 - The implementation timeline for WTP alternatives is quicker than other alternatives.
- SGM concluded the NWC River Diversion alignment Alt 1 is the best solution to perfect the NWC River Diversion water right.
 - Although the most expensive project, the NWC River Diversion is the only project which would allow NWC to develop a new water source. Therefore, the redundancy and reliability this project allows is superior to all other projects.
 - The NWC River Diversion alignment Alt 1 would also deliver water throughout the non-irrigation season directly to the NWC WTP, which would help if NWC Reservoirs Nos. 1 and 2 didn't fill after a drought year.
 - Although a water court process is required for Alt 1, the proposed pump station location is the most ideal for site access.
 - The Alt 1 alignment combines lower cost open trench pipeline construction where feasible, and direction drilled pipeline where steep slopes make trench construction difficult.
 - Other alignments are longer or more expensive.
 - In general, environmental permitting requirements are not expected to be burdensome due to temporary impacts of pipeline construction. The final engineering design will need to carefully select a precise alignment that minimizes wetlands impacts to less than ½ acre to avoid triggering a Section 404 Individual Permit. Section 7.1.4 details the expected permitting requirements for the diversion, pump station, and pipeline construction.

Based upon the work completed for this Alternatives Analysis, SGM has developed the following recommendations:

- SGM recommends NWC complete the following actions to further pursue the design, permitting, and construction of the WTP Alt 1.



- Coordinate with the State Land Board to ensure a future reservoir could be constructed on the property.
 - Pursue state and federal funding opportunities to leverage grant and loan funding to design, permit and construct WTP Alt 1.
 - Coordinate with NWC's water right attorney to discuss changing a portion of the NWC Reservoir No. 4 water right to allow the NWC Reservoir No. 3 to store the full 105.0 AF anticipated under WTP Alt. 1.
- SGM recommends NWC complete the following actions to further pursue the design, permitting, and construction of the NWC River Diversion.
 - Coordinate with BLM, USFS, and San Miguel County representatives to ensure the diversion structure, pump station and pipeline could be constructed on their respective properties.
 - Coordinate with NWC's water right attorney to discuss changing the point of diversion to the Alternate 1 location.
 - Pursue state and federal funding opportunities to leverage grant and loan funding to design, permit and construct the NWC River Diversion.



10.0 References



Appendix A: Figures



Appendix B: Tables



Appendix C: Conceptual Designs



Appendix D: Engineers' Opinion of Probable Costs



Appendix E: Geotechnical Report



Appendix F: Multi-Decision Criteria Analyses





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TOWN MANAGER REPORT – AUGUST 2026

STAFF

- Weekly staff meetings
- Monthly board meetings

OPERATIONS

- Reconciliations
- Customer and office support
- New hire deputy admin
- HUFT annual report
- EPA (CDS) Grant Submission with Catherine SGM
- Grant reimbursements
- Business directory on website
- Agenda/Supporting Documents
- TON/NWC Audit follow up
- Process Payroll
- LUC check in meeting with KLJ
- Pocket Park addressed
- UT Byway meeting
- Press release NSD rate increase
- DarkSky code adoption noticed
- Reduced speed limit noticed
- Pedestrian crosswalk signage notice (already damaged)
- LOS to SMC for the CPW Regional Partnership Initiative
- Pocket Park internet install
- ColoTrust check in with Brett
- Public complaint follow up
- Scoping and Field Visit with CDOT (Guardrail Improvements)
- Reviewed draft code assessment from KLJ
- Ordered speed limit signs
- Set up sub account in ColoTrust
- SGM waterline design review
- NWC seat advertising
- Toilet tablet advertising

TRAINING

- Drought Webinar with Colorado Water Trust
- Caselle Webinar – Accounts Receivable

PUBLIC OUTREACH

- 4th of July Ice Cream Social