

AMENDMENT NO. TWO TO THE
AGREEMENT FOR CONSULTING AND
PROFESSIONAL SERVICES
BETWEEN CITY OF GREELEY
AND BROWN AND CALDWELL
FOR OWNER'S ENGINEER – CONCEPTUAL DESIGN
Work Order 8 – Terry Ranch Water Supply Program - PO No. 20000533

THIS AMENDMENT NO. TWO to the Agreement for Consulting and Professional Services between City of Greeley, hereinafter referred to as "Client", and Brown and Caldwell, a California corporation, hereinafter referred to as "Consultant," is made and entered into this 4th day of March, 2021.

RECITALS:

WHEREAS, Client and Consultant entered into an agreement (Work Order 8) for consulting and professional services dated March 23, 2020 (hereinafter referred to as the "Agreement") with notice to proceed on June 4, 2020;

WHEREAS, Client has requested changes in the Scope of Services;

NOW, THEREFORE, Client and Consultant agree to amend the Agreement as follows:

I. SCOPE OF CONSULTING SERVICES

The Scope of Services is as follows:

Phase 100 – Project Management

- A. Project management for the work tasks below.
- B. Provide peer review coordination and meetings. Approved comments from the peer review will be included in the draft review comments. Work includes sharing documents and 3 Consultant personnel attending a meeting on January 18, 2021 to discuss results and provide background.

Phase 200 – Water Board Updates: Provide added work for Greeley City Council, Water and Sewer Board, public meetings and assistance with slides for Greeley's presentations. Includes meetings/discussions with members of the public. Original scope only included one update/presentation and only one other person assisting. Current scope includes:

- Water and sewer board meeting October 13, 2020
- Water and sewer supervisors meeting October 1, 2020
- Water and sewer board meeting November 18, 2020
- Open house December 1, 2020
- Water and sewer board meeting December 16, 2020
- City council presentation January 16, 2021

- Open house planned February 10, 2021
- Water and sewer board meeting planned February 17, 2021
- City council presentation planned March 2, 2021

Phase 300 – Program Component Selection: Use the remaining amount of this budget item to adjust updated Terry Ranch operational expectations and cost phasing adjustments. Originally completed an initial evaluation, but the technical memorandum (TM) was not used because selecting an alternative route was not considered further due to permitting concerns in other counties. Completion of the TM for program component selection will not be pursued further.

Added work includes applying the remaining costs in this work item to a different phase of work. Specifically, this will contribute toward the TM, entitled, “Program Flows by Milestone” and other concept report documents with this information.

Phase 410 – Program Concept Design

Pipelines Transmission and Wellhead – 411 and 412

- A. The original scope called for a desktop study for both the wellhead piping and transmission piping. The actual work performed includes alignment drawings of this work showing the utilities, easements and horizontal alignment. The length planned was 32 miles, but work was added to extended length of transmission pipeline to include the backbone of well piping. Added approximately 10.5 miles of pipeline (total 42.5 miles, and 33 added drawings).
- B. The Client made the decision to place the alignment in a private easement rather than on public right of way. Impacts to surveying and geotechnical, as well as added easements and investigation. This change occurred later in the project.
- C. As an impact of placing the delays to surveying, the design needed to progress to meet the approvals schedule. To do this an iterative process was used that evaluated available data (rather than the survey data) to provide the site elevations and alignment drawings for the pipeline. The hydraulic model, property sites and pipeline alignment drawings were completed using this data for the draft submission. These items will be verified and likely updated as part of the final report when the survey data becomes available. Impacts are expected to include adjustments to property lines and easements when compared with the survey data (lidar/photographs).
- D. The impact of the alignment selection includes developing class D utilities and the pipeline alignment for the first 6 miles rather than using the surveyed marks. As survey data and class B utility locates become available, the work will update the alignment drawings with new survey data for the final requiring a comparison and adjustment of utilities.

Greenfield facilities – 413

- E. Technical documents for Greeley’s coordination with landowners: Modified sites and layouts to meet the needs of subsequent meetings with landowners and the State Land Board (SLB). Provided updated drawings and coordination for easement discussions with property owners. Modified pipeline route and Cactus Hill site to meet this request. Work includes adjusting piping layouts at the transmission pumping station, added 4 drawings for SLB easements, adjusted site location for the PRV station. Original scope included only a desktop analysis and site visits for property selection.

Geotechnical investigation – 420

- F. Pollution liability insurance. Changed the drilling subconsultant to include a driller who was able to provide appropriate insurance. Pollution liability insurance was an added requirement under

the Master Services Agreement on June 17, 2020 and impacted this work order. Subconsultant had proposed based on a driller who was providing insurance, but not this specific insurance. Providing rework to accept new driller and verify contracting requirements.

- G. Additional coordination to provide borings on private property instead of public right-of-way. This included a schedule delay, coordination with landowners and site restoration requirements that were not originally foreseen.

Topographical Surveying – 430

- H. Modified/updated route and surveying needs to meet final alignment selection.
- I. Additional coordination to provide survey targets and access on private property instead of public right-of-way. This included a schedule delay, and coordination with landowners. Includes a total of 68 properties where access was necessary. Original scope assumed work would generally be in public right of way.

Hydraulics – 450

- J. Revised the hydraulics and flows late in the design process. This included changing from 16 to 24 cfs for the injection flows and changing from 40 to 45 cfs for the supply flows. This work is further impacted by the adjustment of milestones and intermediate flows. Reference Greeley memorandum, Terry Ranch Hydrology Analysis Overview, June 15, 2020.
- K. Based on the new flows, added 5 groundwater wells and network piping for these wells. Updated modelling and analyzed options to optimize the arrangement. Includes changes to drawings, comparison costs for pumping systems, and treatment processes. Includes added model runs for these changed conditions.
- L. Analyze the system using available data rather than the survey data. This benefited the project by having the analysis completed in a timely manner, but a second analysis added effort requiring updates to the report.

Treatment processes – 460

- M. Additional coordination for water quality testing. Data from multiple labs, sometimes with differing test methods used unexpectedly. Coordination includes updating evaluations from multiple additions of data. As described in WO8, scope of work, basis of scope, items 6 and 8, this effort was originally excluded.
- N. Added a phone call and review of the ion exchange (I-X) process with other cities.
- O. Added coordination and data collected from the piloting process. While the pilot treatment plant has been budgeted in a separate work order, this had impacts to the concept design. This includes re-analysis of piloting data for both the treatment process (I-X) and the injection piloting and updating the report. Data was also added to the full data set from these pilot testing items.
- P. Added work to evaluate the move or elimination of the equalization (EQ) tank and relocate the radon removal system. Includes increased analysis for the process to assess impacts of other type of removal, (packed tower, granular activated carbon, etc.) and its move to different locations. Includes evaluation of in-plant pumping station elimination options.
- Q. Added work to evaluate the staffing needs for the overall project. This was used to set the overall project operational costs.

- R. Added a more work to summarize the water quality data. Includes data from multiple sources that were not part of the original work, including the treatment piloting, the injection piloting, the corrosion control assessment, the ASR bench scale testing in addition to the original data from the inspection activities. Produce a TM to be added to the final report. This work allows a single source of data for the future project efforts.

Power supply – 472

- S. Added work to coordinate with Poudre Valley REA and to evaluate the inclusion of a central metering facility for the wellhead area. Includes coordinating a long-term study performed by Poudre Valley REA and multiple meetings.
- T. Changed flows (16 to 24 cubic feet per second (cfs) for injection and 40 to 45 cfs for supply) and number of wells. This change in flow required rework for the power supply, coordination, and drawing updates.
- U. Added work for developing power supply for 2 pumping stations at a site (Gold Hill Booster and the Transmission station). Included coordination of power supply needs for two different milestones and two different levels of power needs (medium voltage vs low voltage).
- V. Added work to provide two separate (low voltage) power feeds for the injection system and the supply system due to the span of milestones. Modified technical memorandum and single-line drawings to meet this need.

Opinion of probable cost – 490

- W. Included the estimate of operational cost in addition to the construction cost. This was not originally part of the work. The work included a comparison to existing Greeley treatment plants.
- X. Provided cost data for specific milestones and comparison to previous estimates. These were adjusted to meet modified flows/milestones based on comments from Greeley's June 15, 2020 memo and during the comments from the draft report. Work was also adjusted to meet presentations necessary for board meetings and other public presentations.

Phase 500 – Wrap-up Tasks

Poudre Valley REA Long-Term Study – 510

- A. Provide an administrative accommodation to implement Poudre Valley REA as a vendor. This work includes Poudre Valley REA performing a long-range study to supply electricity to the Terry Ranch Water Supply Project components in their service area.
- B. The work will be scoped, directed, reviewed and performed by Poudre Valley REA. Poudre Valley REA is responsible for the services and direction and deliverables of this work. No deliverables will be provided from Consultant on this item, all work will be done by Poudre Valley REA.

On-Call Support – 520

- C. Provide miscellaneous/on-call support of items that support Greeley's overall objective to provide design and implementation of the Terry Ranch Water Supply Project. Activities that may fall within this task include meetings with Water and Sewer Board members, City Council members, Greeley staff, or the general public. Other items could include additional drawings or design analyses, research of data or questions posed by any of the members of groups listed above, which may be summarized in a technical memorandum, presentation, graphics

development, or other items as requested by Greeley staff. BC will not use these funds unless authorized by Greeley staff.

II. SCHEDULE

Consultant is authorized to proceed with the modified Scope of Services effective on the date of this Amendment. The modified Scope of Services shall be completed by extending the project end date to November 17, 2021. An updated schedule is provided as Attachment A – “Schedule”. Delivery of final concept report document on May 5, 2021.

III. COMPENSATION

Compensation for the services provided under Article I of this Amendment shall be calculated on the same basis as in the Agreement as modified by any previous amendment(s). The labor hours and cost estimates for completing the services defined in this Amendment are shown in Attachment B – “Compensation”.

A. Original Contract: \$1,234,729

B. Amendment 1: \$176,280

C. This Amendment (Amendment 2), from Attachment B, Compensation: \$395,737

This increases the total estimated compensation under the Agreement to \$1,806,746.

III. ATTACHMENTS

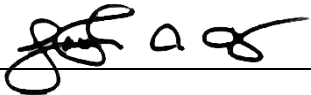
A – Schedule

B – Compensation

All other terms and conditions of the Agreement and any amendments thereto remain unchanged.

BROWN AND CALDWELL

CITY OF GREELEY

Signature:  _____

Signature: _____

Printed Name: Joe Casias _____

Printed Name: _____

Title: Managing Area Director _____

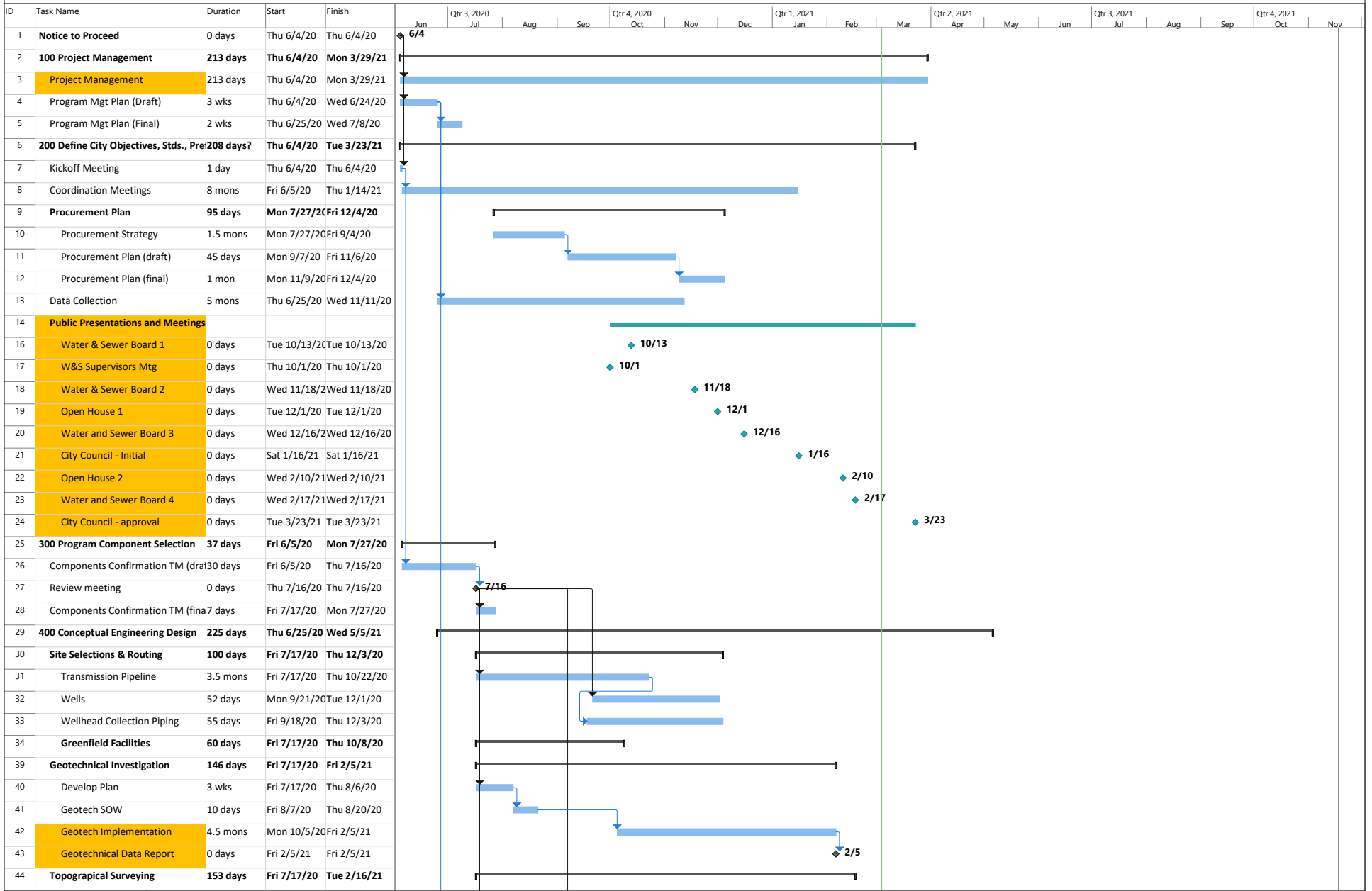
Title: _____

ATTACHMENT A - SCHEDULE

PROGRAM SCHEDULE

City of Greeley

Terry Ranch Water Supply Program Owner's Engineer - Conceptual Design

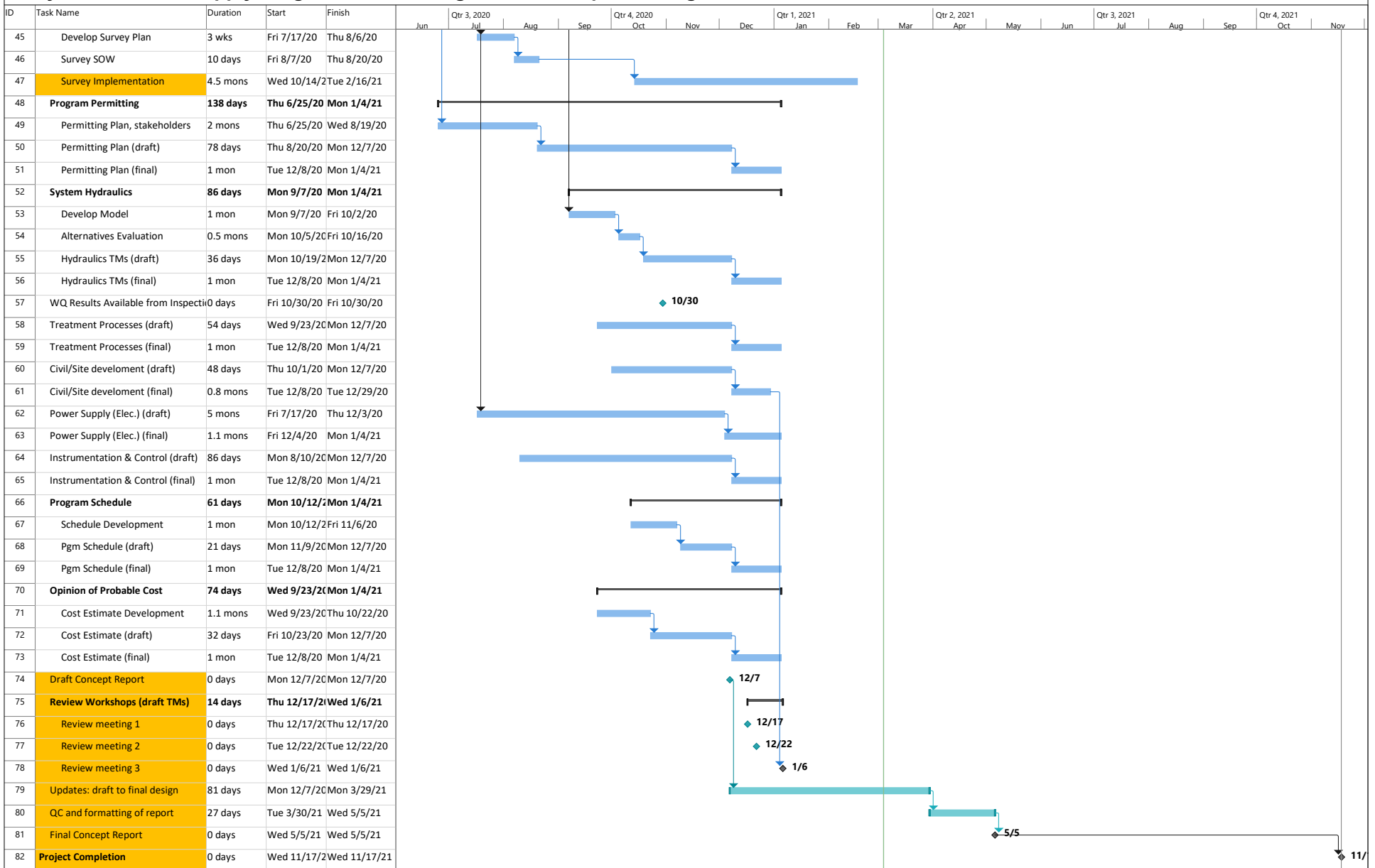


Project: 03_Schedule_ConceptR	Task	Summary	Inactive Milestone	Duration-only	Start-only	External Milestone	Manual Progress
Date: Thu 3/4/21	Split	Project Summary	Inactive Summary	Manual Summary Rollup	Finish-only	Deadline	
	Milestone	Inactive Task	Manual Task	Manual Summary	External Tasks	Progress	

PROGRAM SCHEDULE

City of Greeley

Terry Ranch Water Supply Program Owner's Engineer - Conceptual Design



Project: 03_Schedule_ConceptR
Date: Thu 3/4/21



ATTACHMENT B - COMPENSATION

Greeley, City of -- TR36 Pipeline Concept Design. WO8 - Amendment No. 2																												
		Higbee, Scott P	Rose, Lisa J	Kepley, Samantha A	Long, Richard E	Melton, Erin L	Turner, Scott A	Shroyer, David W	Hicks, Kaitlyn M	Bergland, Nathan W	Billing, Brandon M	Helbel, Stephen R	Rossillon, Tina	Knight, Tyler	Stansbury, Brenda R	DMiceli, Anthony L	Sullivan, Lauren	Schuhen, Peter	Agster, William P	Garrett, Christopher S			CTL/Thompson	Manhard	Poudre Valley			
Phase	Phase Description	PM	PA																		Total Labor Hours	Total Labor Effort	Cost	Cost	Cost	Total Expense Cost	Total Expense Effort	Total Effort
100	Project Management	\$208	\$98	\$139	\$233	\$139	\$179	\$179	\$118	\$179	\$179	\$190	\$179	\$158	\$179	\$179	\$208	\$139	\$190	\$233	330	\$66,390	\$0	\$0	\$0	\$0	\$0	\$66,390
101	Project Management	150	50	0	130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	330	\$66,390	\$0	\$0	\$0	\$0	\$0	\$66,390
102	Progress Report	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	
103	Accounting and Invoicing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	
104	Project Work Plan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	
105	Health and Safety Plan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	
106	Risk Register	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	
107	Project Archiving	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	
108	QAQC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	
109	Document Management System	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	
200	Define City Objectives/Stdts/Prefs	45	0	24	10	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	94	\$17,711	\$0	\$0	\$0	\$0	\$0	\$17,711
210	Kickoff and Coordination Meetings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	
230	Procurement Plan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	
240	Data Collection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	
250	Water and Sewer Board Updates	45	0	24	10	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	94	\$17,711	\$0	\$0	\$0	\$0	\$0	\$17,711
300	Program Selection	0	0	0	20	40	0	0	0	15	0	0	0	0	0	0	0	0	0	0	75	\$12,905	\$0	\$0	\$0	\$0	\$0	\$12,905
330	Technical Memorandum	0	0	0	20	40	0	0	0	15	0	0	0	0	0	0	0	0	0	0	75	\$12,905	\$0	\$0	\$0	\$0	\$0	\$12,905
410	400-Prgm Def/Concept Engr Design	53	0	0	60	0	65	25	70	185	71	85	270	16	34	35	104	270	6	74	1,423	\$252,101	\$6,300	\$4,500	\$0	\$10,800	\$11,880	\$263,981
410	Do Not Use	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	
411	Transmission Pipeline	20	0	0	4	0	0	0	0	25	20	0	175	0	0	20	0	175	0	12	451	\$75,173	\$0	\$0	\$0	\$0	\$0	\$75,173
412	Wellhead Collection Piping	0	0	0	10	0	0	0	70	0	15	0	0	0	0	0	0	0	0	7	102	\$14,906	\$0	\$0	\$0	\$0	\$0	\$14,906
413	Greenfield Facilities	0	0	0	8	0	0	0	0	0	0	0	40	0	0	0	19	35	0	1	103	\$18,074	\$0	\$0	\$0	\$0	\$0	\$18,074
420	Geotechnical Investigation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$6,300	\$0	\$0	\$6,300	\$6,930	
430	Topographical Surveying Plan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$4,500	\$0	\$4,500	\$4,950	
440	Program Permitting	3	0	0	0	0	0	0	0	0	0	0	0	0	30	0	0	0	0	2	35	\$6,460	\$0	\$0	\$0	\$0	\$0	\$6,460
450	System Hydraulics	10	0	0	8	0	0	0	0	65	36	0	0	0	0	0	0	0	0	15	134	\$25,518	\$0	\$0	\$0	\$0	\$0	\$25,518
460	Treatment Processes	10	0	0	12	0	0	0	0	85	0	0	0	16	4	15	85	0	0	15	242	\$47,195	\$0	\$0	\$0	\$0	\$0	\$47,195
470	Utility Needs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	
471	Civil Site Development	0	0	0	8	0	0	0	0	0	0	0	55	0	0	0	0	60	0	8	131	\$21,913	\$0	\$0	\$0	\$0	\$0	\$21,913
472	Power Supply (Electrical)	0	0	0	0	0	0	0	0	10	0	45	0	0	0	0	0	0	0	8	63	\$12,204	\$0	\$0	\$0	\$0	\$0	\$12,204
473	Instrumentation & Control	0	0	0	0	0	0	0	0	0	0	40	0	0	0	0	0	0	0	6	46	\$8,998	\$0	\$0	\$0	\$0	\$0	\$8,998
480	Program Schedule	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	
490	Opinion of Probable Cost	10	0	0	10	0	65	25	0	0	0	0	0	0	0	0	0	0	6	0	116	\$21,660	\$0	\$0	\$0	\$0	\$0	\$21,660
500	Wrap-up Tasks	14	0	13	13	0	0	0	0	0	0	0	0	0	13	0	0	0	0	0	53	\$10,000	\$0	\$0	\$22,500	\$22,500	\$24,750	\$34,750
510	PVREA Long-Term Study	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$22,500	\$22,500	\$24,750	
520	On-Call Support	14	0	13	13	0	0	0	0	0	0	0	0	0	13	0	0	0	0	0	53	\$10,000	\$0	\$0	\$0	\$0	\$0	\$10,000
GRAND TOTAL		262	50	37	233	40	80	25	70	200	71	85	270	16	47	35	104	270	6	74	1,975	\$359,107	\$6,300	\$4,500	\$22,500	\$33,300	\$36,630	\$395,737