

## SECTION 1 - EXECUTIVE SUMMARY

This Water Treatment Plant (WTP) Facility Plan (Plan) provides the Town of Silt (Town) with an evaluation of their existing water treatment plant infrastructure and processes, water quality, future demand flows, treatment alternatives, and regulations. This report also describes the evaluation processes in selecting the recommended improvements to their WTP as well as a roadmap outlining the Town's water treatment needs over the next 20 years.

### 1.1 Summary of Existing Water Treatment Plant

The Town of Silt's Water Treatment Plant (WTP) is located on the southwest side of Town on the south side of Interstate 70. The WTP has not undergone any major upgrades since its original construction in 2005 by Schmueser Gordon Meyer Engineers and Surveyors. The Silt WTP currently has a peak design capacity of 1 million gallons per day (MGD); however, the true capacity is only 0.6 MGD. The existing potable water distribution system consists of four water storage tanks and two raw water pump stations. The WTP utilizes the Colorado River as the main source water and two groundwater wells that are considered groundwater under the direct influence (GWUDI) of surface water. In addition to high turbidity in the Colorado River source water, the GWUDI source water contains high levels of iron and manganese.

The existing plant consists of the following major unit processes:

- Two submerged raw water pump stations
- A strainer
- ACH and polymer blend for coagulant and a coagulant mixer
- A plate settler
- Two membrane filters
- Calcium hypochlorite tablets for disinfection
- Finished water pump station

The drinking water service area for the Town of Silt WTP is the Town boundary. The Town of Silt WTP serves an area that encompasses approximately 2.8 square miles of area.

### 1.2 Planning Criteria

The Town of Silt currently has an estimated population of 3,536 and is anticipating a 20-year planning period population of 7,904 in 2042. The projected population growth will cause an increase in water demand and therefore required water production from the WTP. The production capacity of the WTP is dependent on upstream equipment and processes. Average annual water demand per capita has remained relatively constant between 80 and 88 gallons per capita per day. The WTP experienced a peak daily demand of 0.48 MGD in 2018.

Planning criteria for the Town of Silt WTP are provided in **Table 1.2**. At the end of the 20-year planning period, the average annual daily demand is projected to increase to 671,900 GPD. The projected peak day demand in 2042 is 1.21 million GPD.

Table 1.2 Projected WTP Water Demand

PARAMETER	YEAR 2027	YEAR 2037	YEAR 2042
Average Annual Day, GPD	388,200	559,600	671,900
Peak Day, GPD	698,800	1,007,300	1,209,300

### 1.3 Regulatory Review Summary

The WTP operates under the Colorado Discharge Permit System (CDPS) Permit No. CO0123710. The Safe Drinking Water Act identifies and sets standards for chemical contaminants, microbial contaminants, and right-to-know rules. Specifics of these rules are detailed in Section 4.

#### 1.3.1 Lead and Copper

The Lead and Copper Rule has been revised and requires compliance on October 16, 2024. For further detail, see **Section 4.1.17**.

#### 1.3.2 Disinfectants/Disinfection Byproducts Rule

The Stage 1 Disinfectants/Disinfection Byproducts Rule (D/DBPR) sets limits for exposure to three disinfectants and many disinfection byproducts. The rule established maximum residual disinfectant level goals (MRDLGs) and maximum residual disinfectant levels (MRDLs) for chlorine, chloramine, and chlorine dioxide. The Stage 2 D/DBPR focuses on monitoring and reducing concentrations of two classes of DBPs: total trihalomethanes (TTHM) and haloacetic acids (HAA5). For further detail, see **Section 4.1.11**.

#### 1.3.3 Primary and Secondary Drinking Water Standards

Primary Drinking Water Standards are legally enforceable standards that must be met by public water systems. Secondary Drinking Water Standards are non-enforceable guidelines for contaminants that may cause cosmetic effects in drinking water. For further information, see **Section 4.1.12** and **Section 4.1.14**, respectively.

#### 1.3.4 Disinfection Requirements

The Revised Total Coliform Rule requires PWSs to test for total coliforms monthly. The Surface Water Treatment Rule, Long-Term 1: Enhanced Surface Water Treatment Rule, and Long-Term 2: Enhanced Surface Water Treatment Rule require disinfection, filtration, and contact time to meet minimum requirements, depending on the system and disinfectant used. For more details, see **Sections 4.1.2** through **4.1.6**.

#### 1.3.5 Monitoring Reports

The Consumer Confidence Report Rule requires community water systems to provide annual water quality reports to their customers. All utilities must submit the report to the state annually and deliver the report directly to each customer by July 1 each year. For more information, see **Section 4.1.10**.

#### 1.3.6 Recommended Additional Monitoring

Additional monitoring of certain contaminants and analytes will help prepare the Town of Silt's WTP for future regulations and improve operations.

##### 1.3.6.1 TOC

It is recommended that TOC is monitored as it is an indicator of potential DBP formation and can help inform operator staff how well treatment is performing.

### 1.3.6.2 PFAS

In advance of the Fifth Unregulated Contaminant Rule, which requires monitoring for PFAS between 2023 and 2025, it is recommended to sample PFAS to gauge the level of PFAS in the raw and finished water. This will help inform future decisions regarding treatment of PFAS if a future PFAS regulation is enforced.

### 1.3.6.3 Raw Water

Water quality monitoring of raw water for unregulated contaminants (See **Section 4.1.20**) and contaminants on the Contaminant Candidate List (See **Section 4.1.22**) is recommended to gauge levels of these contaminants, which may be regulated in the future.

### 1.3.6.4 Disinfection Byproducts

There is a Stage 3 DBP Rule in development that will likely further lower the TTHM and HAA5 MCLs and, perhaps, increase TOC removal requirements. However, this rule is unlikely to be formulated until 2027 or later. In preparation for these future potential rules, it is recommended that TTHM and HAA5 are monitored more frequently than currently required.

### 1.3.6.5 Technologically Enhanced Naturally Occurring Radioactive Material

It is recommended that Technologically Enhanced Naturally Occurring Radioactive Material is sampled and monitored in preparation for the CDPHE Part 20 TENORM regulation, which is enforceable on July 14, 2022.

### 1.3.6.6 Jar Testing

Periodic jar testing is recommended to monitor coagulation and flocculation and estimate the minimum coagulant dose required to optimize pretreatment. Turbidities, water temperatures, source water, and other water quality parameters can affect coagulant dosing and coagulation and flocculation, especially seasonally.

### 1.3.6.7 Provisional Considerations for PFOA/PFAS Regulations

Per- and polyfluoroalkyl substances (PFAs) are a group of manufactured chemicals that have been used in industry and consumer products since the 1940s because of their useful properties. PFAS is an emerging contaminant and while there are currently no drinking water regulations for PFAS, there are likely to be future regulations for these contaminants. MCLs are in development and are likely to promulgated prior to 2030.

## 1.4 Water Treatment Plant Performance and Evaluation Overview

The Town of Silt WTP treats approximately 0.33 MGD (annual average day production for 2021). Annual Drinking Water Quality Reports for the last five years (2016-2020; the report was not yet available for 2021) indicate nine violations in the last five years. The violations were: (1) four violations for failing to monitor and/or report lead and copper, two in 2019 and two in 2020, (2) three violations for failing to inform homeowners of lead results, two in 2019 and one in 2020, (3) one violation for failing to meet cross connection control and/or backflow prevention requirements in 2019, (4) one violation for failing to have a certified operator in 2020, (5) one violation for failing to monitor and/or report total coliform in 2020, and (6) one violation for failing to monitor and/or report chlorine/chloramine in 2020. There were no reported water quality violations in 2016 through 2021.

The evaluation of the WTP recommended the following improvements:

- Raw water delivery and flow system produce a lot of excess water. To meet future demands and improve operations, additional pumps and control improvements will be required.

- The Alluvial wells have lower turbidity than the Colorado River water. However, the alluvial water tends to be higher in iron and manganese. The existing alluvial wells do not have capacity to meet the full summer
- The plate settler lacks sufficient capacity to meet future demands. This should be expanded or replaced with a system that can accommodate a large variation in raw water turbidity.
- Colorado River water during the runoff season has high turbidity which impacts pretreatment and filtration processes. It may be worthwhile to investigate expanding the use of the wells and/or use of the gravel pond across the river in an effort to reduce turbidity to the WTP.
- Use of ACH as a coagulant reduces the need to modify the pH to improve flocculation and coagulation and should be continued. Dose should be confirmed with regular testing. The WTP currently utilizes a Clarifloc product which is a proprietary blend of ACH and a polymer. Silt should consider utilizing pure ACH with no polymer as the use of polymers can negatively impact membrane fouling.
- There is an insufficient coagulation/flocculation system at the WTP. This greatly reduces the effectiveness of the plate settler and increases the turbidity load to the membranes. In effect, the elevated turbidity load to the membranes increases backwashing and cleaning frequency which decreases treatment capacity.
- By utilizing membranes for filtration, the WTP is not required to test and document TOC removal. However, improving TOC removal will reduce DBP formation potential. While it currently doesn't monitor for TOC removal, incorporating regular TOC removal monitoring will provide Operations with knowledge regarding DBP formation potential. Additionally, DBP formation potential equipment could be provided to staff to assist with process monitoring.
- The membranes lack sufficient treatment to meet future demand projections. The membranes have a capacity of 0.6 MGD when operating 24 hours a day. Operating 18 hours a day, the membranes have a capacity of 0.5 MGD which is equivalent to the current peak day summer demands. During a peak day, the WTP is operating at or near capacity. Additional filtration capacity is needed.
- The life of the membranes could be extended by performing a Clean In Place (CIP). CIPs are currently not performed because: (1) the heaters do not work and (2) the time required for a CIP significantly impacts production time.
- Maintenance and CIPs are manually intensive processes. New controls should be incorporated to automate the future filter backwashing and cleaning process.
- The table chlorination system currently works. However, it should be upgraded to a system that can be easily flow controlled with sufficient instrumentation to determine chlorine demand and dose. This improvement will likely improve the reliability of meeting TOC removal goals and reducing DBP formation potential.
- Iron and manganese removal should be addressed. Currently, the addition of sequest masks the impacts of iron and manganese. A long term, resilient removal solution should be identified and installed.
- The chlorine contact chamber has sufficient capacity to provide 4 log virus inactivation at the projected future water demands. Should the regulations change or should the WTP replace the membranes with a conventional mixed media filter system, additional disinfection credits will need

to be provided to provide additional giardia inactivation credits. This could be accomplished via UV disinfection or additional contact chamber volume.

- There is one disinfection contact chamber. This limits the ability of staff to clean and maintain the chamber.
- Silt should monitor their raw water sources for the unregulated contaminants.
- Finished water pumping capacity is currently not sufficient to meet the projected demands.

## 1.5 Water Treatment Plant Alternatives Summary

Four alternatives for the pretreatment and filtration processes were evaluated for the Silt WTP. Planning level estimates of construction costs, annual operation and maintenance (O&M) costs, and the net present value were developed for the four pretreatment and filtration process alternatives. The net present value of each treatment alternative includes construction costs of the labor, disinfection, coagulant, power, equipment, and membrane or filter replacement. O&M costs are based on average annual O&M costs over the 20 years. Pretreatment and filtration process construction costs and total construction costs for the four alternatives are presented in **Table 1.3**. Current annual costs are summarized in **Table 1.4** and annual costs in 2042 are summarized in **Table 1.5**, including costs for labor, coagulant, disinfection chemical, power, residuals, and equipment/structure O&M. Additional information on the process evaluation can be found in **Section 6**.

Table 1.3 Estimated Construction Cost for WTP Alternatives

ALTERNATIVE	PROBABLE OPINION OF CONSTRUCTION COST, \$ MILLION	OPINION OF TOTAL PROJECT COST, \$ MILLION
Alt 1 – Solids Contact Clarifier with Mixed Media Filtration	\$21.3	\$25.6
Alt 2a – Plate settlers with Mixed Media Filtration	\$19.6	\$23.5
Alt 2b – Plate settlers with Membrane Filtration	\$19.2	\$23.1
Alt 3 – Package Media Filtration	\$21.5	\$25.8
Alt 4 – Ballasted Flocculation with Mixed Media Filtration	\$23.3	\$27.9
New Additional 0.5 MG Water Storage Tank	\$2.2	\$2.6

Table 1.4 Annual O&M Costs - Current

ITEM	ANNUAL COST, \$				
	ALTERNATIVE 1	ALTERNATIVE 2A	ALTERNATIVE 2B	ALTERNATIVE 3	ALTERNATIVE 4
Labor	178,000	178,000	178,000	178,000	178,000
Sodium Hypochlorite	38,000	38,000	38,000	38,000	38,000
Coagulant	86,000	86,000	86,000	86,000	86,000
Power	66,000	82,000	66,000	66,000	66,000
Annualized Equipment Maintenance	67,000	34,000	34,000	84,000	58,000
Annualized Membrane Replacement	0	67,000	0	0	0
Annualized Filter Replacement	0	0	11,000	0	11,000
<b>Total</b>	<b>435,000</b>	<b>485,000</b>	<b>413,000</b>	<b>452,000</b>	<b>437,000</b>

Table 1.5 Annual O&M Costs - 2042

ITEM	ANNUAL COST, \$				
	ALTERNATIVE 1	ALTERNATIVE 2A	ALTERNATIVE 2B	ALTERNATIVE 3	ALTERNATIVE 4
Labor	267,000	267,000	267,000	267,000	267,000
Disinfectant	89,000	89,000	89,000	89,000	89,000
Coagulant	199,000	199,000	199,000	199,000	199,000
Power	82,000	98,000	82,000	82,000	82,000
Annualized Equipment Maintenance	67,000	34,000	34,000	84,000	58,000
Annualized Membrane Replacement	0	67,000	0	0	0
Annualized Filter Replacement	0	0	11000	0	11000
<b>Total</b>	<b>704,000</b>	<b>754,000</b>	<b>682,000</b>	<b>721,000</b>	<b>706,000</b>

Alternative 2b has the lowest construction costs (**Table 1.3**). The Town of Silt has chosen Alternative 4 due to ease of operation and ballasted flocculation can accommodate the wide range in turbidity from the raw water with minimal operational adjustment and green sand could be added to the mixed media filtration to address the iron and manganese levels in the raw water.

## 1.6 Implementation Plan

The section presents the Implementation Plan for the recommended upgrades to the Town of Silt WTP. The improvements have been developed to upgrade the facility to meet current and future capacity demands, treat the wide range of turbidity of raw water and remove iron and manganese from the raw water. The improvements will also provide required facility redundancy, accommodate planned future growth of the Town, and improve operations. The recommended facility improvements take into

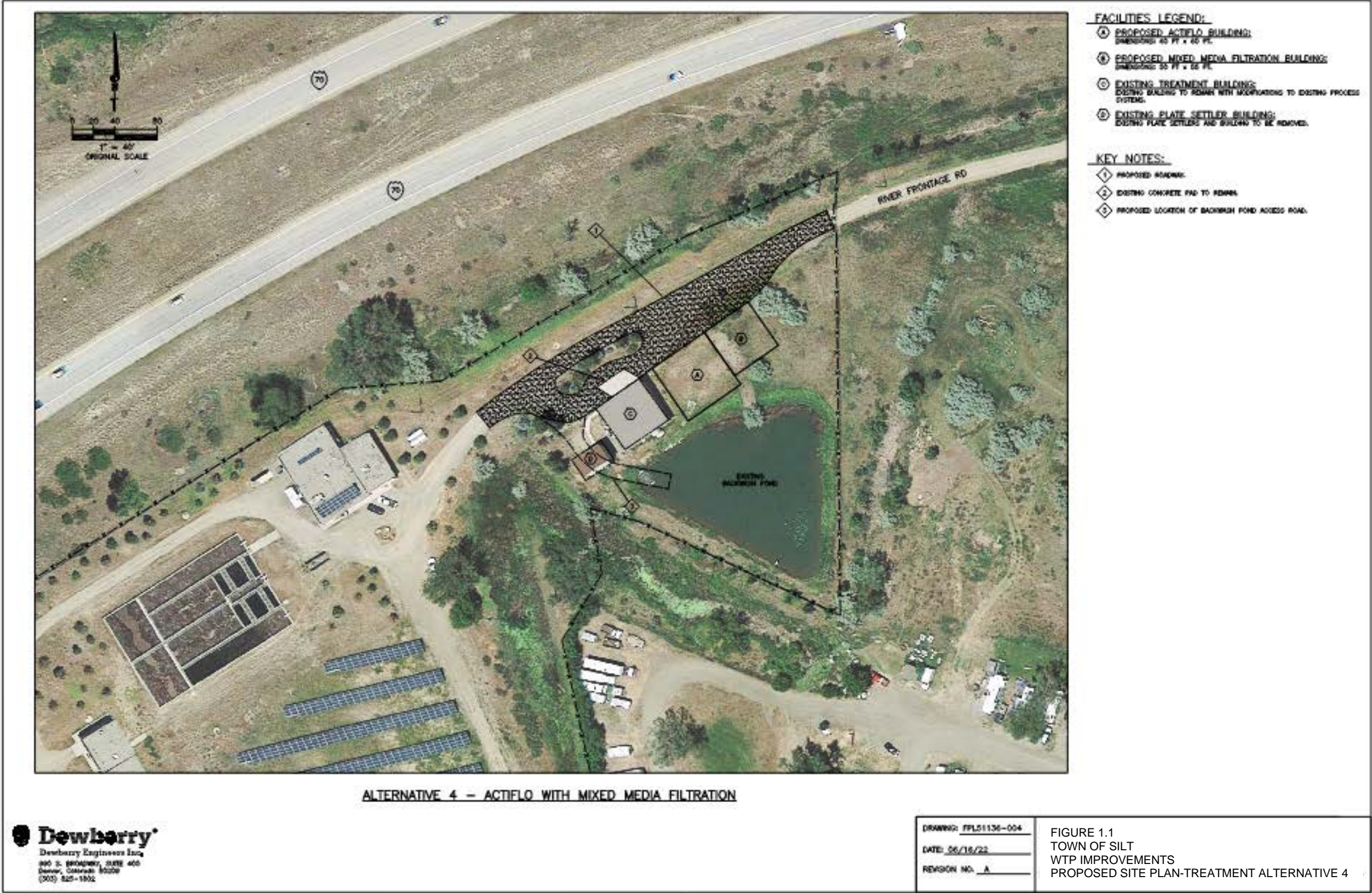
consideration the treatment needs based on current and anticipated regulatory compliance requirements for the WTP. The recommended improvements developed in **Sections 5 and 6** will upgrade the permitted capacity of the WTP to 2 MGD. The recommended improvements are listed below.

- (1) strainer
- (1) mixed media filtration system with green sand
- (1) ballasted flocculation system
- UV disinfection system
- Chlorine disinfection system
- (1) 0.5 MG finished water storage tank
- Periodic cleaning of the backwash pond and residuals disposal
- Data collection software
- New process control system with automation

A site plan for the complete upgraded WTP has been developed and is provided in **Figure 1.1**. The locations shown on **Figure 1.1** are approximate and it is recommended the final location of the facilities be determined during design once a geotechnical investigation has been completed. New facilities are not confined to one portion of the site; care will need to be taken during design to ensure that existing processes can continue to operate while the new facilities are being constructed.



Figure 1.1 Silt WTP Preliminary Site Plan – Alternative 4





Construction for Alternative 4 includes a ballasted flocculation, mixed media filtration with green sand, and UV and chlorine disinfection. The recommended improvements and a summary of the construction and total project costs for Alternative 4 are provided in **Table 1.4**. Estimated planning level construction cost of the improvements is \$23.3 million and the total project cost of the improvements is estimated to be \$27.9 million. Refer to **Section 6** for details regarding estimated costs.

Table 1.4 WTP Improvements Costs

UNIT PROCESS	COST, \$
Site/Civil	313,000
Structural/Architectural	5,185,000
Process	5,581,000
HVAC	1,662,000
Electrical	1,995,000
<b>Total Materials and Equipment</b>	<b>14,736,000</b>
<b>Construction Cost<sup>1</sup></b>	<b>23,285,000</b>
<b>Total Project Cost<sup>2</sup></b>	<b>27,942,000</b>

<sup>1</sup> Construction costs include mobilization/demobilization, contractor overhead and profit, insurance, bonds, and contingency.

<sup>2</sup> Total Project Cost is the construction cost plus the estimated planning, engineering, and administrative cost.

## 1.7 Schedule

It is recommended that the improvements be constructed in the near future to address capacity issues, aide in turbidity ranges and treat iron and manganese issues. The Town has expressed interest in pursuing an alternative delivery project, such as construction manager at risk (CMAR). A CMAR project has the potential to overlap construction tasks with design tasks to shorten the entire duration of a project. As shown in **Table 1.5** below shows a preliminary schedule based on a CMAR project delivery. Design, CDPHE review, and construction of the improvements is estimated to have a duration of 36 months (assuming the project is delivered via Construction Manager at Risk). If a conventional delivery (design, bid, build) is utilized to deliver the project, the project schedule will increase by 20 percent or more. This schedule assumes a design period of eight months for the improvements and is considered a consolidated schedule. The existing facility is believed to be near capacity as detailed in the flow projections described in **Section 3**.

Table 1.5 Project Duration

ITEM	PROJECTED START	PROJECTED END	DURATION, MONTHS
<b>PHASE 1</b>			
Design	August 2022	March 2023	8
Site Application	September 2022	October 2022	2
Process Design Report CDPHE Review	December 2022	January 2023	2
Construction (with CMAR)	July 2023	July 2025	3
<b>Total Phase 1</b>	<b>August 2022</b>	<b>July 2025</b>	<b>36</b>

## 1.8 Funding

The Town of Silt is planning to cash-fund the design of the project with current reserves. Funding for the construction of the project is anticipated to come from current reserves, future bond proceeds and, potentially, State Revolving Fund (SRF) monies.

## 1.9 Public Meeting

The anticipated date for the Town of Silt Water Treatment Plant Upgrades project public meeting will be held during August of 2022 in the Town of Silt Council Chambers. A summary of the planning study and cost impacts will be presented including the recommended improvements. A public notice of at least 30 days is required as part of the public meeting process. A summary of the public meeting will be added as an appendix after the public meeting occurs.

February 1, 2022

Mr. Jeff Layman  
Town of Silt  
Town Administrator  
231 N. 7<sup>th</sup> Street  
PO Box 70  
Silt, CO 81652

**RE: Town of Silt Water Treatment Plant Master Plan - Scope of Services Proposed Agreement**

Dear Mr. Layman,

Dewberry is pleased to submit this proposal for professional engineering services for the Town of Silt Water Treatment Plant Master Plan (hereinafter referred to as Project).. This letter serves as our understanding of the Project background, scope, schedule, and fee for the project.

## **I. PROJECT UNDERSTANDING**

The following constitutes our understanding of the Project and serves as the basis for the proposed scope of services, schedule, and fee. Significant modifications to the Project may result in modifications to Dewberry's services and fees.

The Town of Silt (Town) owns and operates a 1.0 million gallons per day (mgd) surface water treatment plant (WTP) that was constructed in 2006 and subject to the Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Division (WQCD) drinking water regulations. The Town WTP consists of raw water intake infrastructure, coagulation using flash mixing, clarification (plate settlers), microfiltration membranes, chlorine disinfection, associated chemical feed systems, and pumping systems for raw water, filtrate, and finished water.

Based on discussions with the Town Engineer, Zancanella and Associates, the Town is experiencing high levels of influent turbidity as well as observing elevated levels of manganese in the raw and finished water, both of which demand additional operational attention. High turbidity has led to more frequent membrane fouling and backwashing events where the Town has reported decreased operating life of membrane equipment and increased operation and maintenance for plant staff.

These challenges have prompted the Town to conduct an evaluation of the WTP to outlay capital improvements necessary to identify upgrades to continue meeting CDPHE WQCD regulations and provide a higher level of treatment to address high turbidity and manganese removal. Thus, the proposed Project will consist of an evaluation of Town growth, WTP, and WQCD regulations to assist the Town in budgeting and implementing recommended improvements.

This letter proposal is for a Water Master Plan. Specific tasks included in this scope of work are:

1. Task 1: Project Management
2. Task 2: Project Document Review and Kick-off Meeting
3. Task 3: Basis of Evaluation

4. Task 4: Short-term Alternatives Evaluation
5. Task 5 Long term alternatives Evaluation
6. Task 6 Capital Improvement Plan
7. Task 7 WTP Master Plan Report

This proposal includes scope, schedule, and fee for the project - Scope of Services Proposed Agreement dated February 1, 2022.

## **II. SCOPE OF SERVICES**

The scope of services includes the following tasks:

### **A. Task 1: Project Management**

Project management task includes:

1. Manage Dewberry staff on Project budget, schedule, and quality goals.
2. Provide coordination and communication with team members.
3. Implementing Quality Assurance and Quality Control services on all products to the Town.
4. Preparation and review of invoices are included in this task.

### **B. Task 2: Project Document Review and Kick-off Meeting**

1. Project Document Review
  - a. One (1) on-site Kick-off Meeting with the Town to discuss project approach and objectives. Kick-off Meeting will coincide with the Field Site Visit. This meeting will coincide with the Kick-off Meeting for the Wastewater Treatment Facility Master Plan efforts. Thus, time for attendance and travel is not included in this task since it is included in the Wastewater Treatment Facility Master Plan efforts (refer to Town of Silt Wastewater Treatment Facility Master Plan. Time for this task includes preparation for the meeting for review of existing WTP documents and water quality data to assist in facilitating and conducting the on-site evaluation of the WTP.
  - b. Kick-off Meeting and Field Site Visit will be attended by the following Dewberry personnel:
    - i. Technical Advisor.
    - ii. Project Manager.
    - iii. Project Engineer.
  - c. Field Site Visit
    - i. Coordinate with Town WTP Operations Staff to collect information on the major WTP processes and equipment.
    - ii. Interview operations staff to gather institutional knowledge of current and historical operations, maintenance, and performance.
2. Meetings, Workshops, and Site Visits
  - a. One (1) joint Kick-off Meeting and Field Site Visit.
3. Deliverables



- a. Kick-off Meeting and Field Site Visit agenda and notes (electronic and hard copies).
- 4. Assumptions
  - a. Town shall provide all documents available for the Project Document Review. Documents shall include, but not be limited to, master planning reports, facility reports, permitting reports, regulatory documents, geotechnical reports, and as-built (record) drawings in PDF format. It is assumed these documents are accurate or current.
  - b. Town Operations Staff shall be available for interviews during the Kick-off Meeting and Field Site Visit.
  - c. Time for on-site meetings, workshops, and site visits includes travel time.

### **C. Task 3: Basis of Evaluation**

- 1. Water Quality Evaluation
  - a. Current and 20-year Future Conditions
    - i. Service Area and Land Use
      - Review existing water data and planning documentation related to the Town's service area and land use to baseline the current service area and planned development as well as estimate current demands and production.
      - Review existing water data and planning documentation related to the Town's potential future service area and land use to estimate potential future demands.
      - Evaluate raw and finished water quality parameters as well as flows for average daily demand, maximum monthly demand, and associated peaking factors (current and future).
      - Evaluate existing intermediate process control data including plant data for pretreatment, sedimentation, filtration, disinfection, backwash waste, and associated chemical feed systems and storage.
    - ii. Population: Current and 20-year Estimates
      - Review existing planning documents and perform a comparative analysis of past projections to County assessor and Town population and employment data to update current estimates.
      - Town shall coordinate with Dewberry to develop assumptions for the 20-year projections including population, future growth, expansion plans, demand flows, and water supply.
- 2. Regulatory review
  - a. Review CDPHE WQCD regulations applicable to the Town WTP.
- 3. Meetings, Workshops, and Site Visits
  - a. None, unless requested and approved by the Town as Additional Services.
- 4. Deliverables
  - a. None, unless requested and approved by the Town as Additional Services.
- 5. Assumptions
  - a. Town shall provide all documents necessary for the Water Quality Evaluation in electronic format. Documents shall include, but not be limited to: GIS mapping files,

land use documents, master planning reports, facility reports, permitting reports, as-built (record) drawings in PDF format, population data, easement maps, and property maps. These documents will be assumed to be the best available information at the time of the request and are assumed to be accurate and current.

- b. Town shall provide Town five (5) years of historical water quality and flow data in Microsoft Office Excel format.
- c. Town shall provide water financial operating records: expense and revenue summaries for the past five (5) years.
- d. Town shall provide customer data by monthly volume, type, and fees.
- e. Town shall provide electricity usage as well as water rate data for the past five (5) years and copy of the current water use ordinance.
- f. Any and all communications with CDPHE do not definitively establish any future regulations imposed on the water treatment plant. Projections of regulations and water quality requirements for the Town will be based upon discussions with CDPHE and the Town on Regulation 11: Colorado Primary Drinking Water Regulations (effective 09/30/2020).

#### **D. Task 4: Short-term Alternatives Evaluation**

- 1. Perform a short-term treatment alternatives evaluation that includes the preparation of compilation of recommended WTP improvements over the next ten (10) years.
  - a. Evaluation will include preparation of opinion of probable project, construction, and operation and maintenance costs based on AACE Class 5 cost estimate classification.
  - b. Opinion of probable costs (OPC) will include a net present worth analysis for each identified alternative.
- 2. Facilitate meeting (Workshop No. 1) with the Town to discuss short-term treatment options and recommendations.
  - a. Workshop No. 1 will be attended by the following Dewberry personnel:
    - i. Technical Advisor.
    - ii. Project Manager.
    - iii. Project Engineer.
- 3. Meetings, Workshops, and Site Visits
  - a. One (1) workshop with the Town via teleconference or videoconference (Workshop No. 1).
- 4. Deliverables
  - a. Workshop agenda and notes.
  - b. Town will be provided with an electronic copy for each deliverable.
- 5. Assumptions
  - a. Town WTP Operations Staff shall attend Workshop No. 1.

#### **E. Task 5: Long-term Alternatives Evaluation**

1. Perform a long-term treatment alternatives evaluation that includes the preparation of compilation of recommended WTP improvements over the next ten (10) to twenty (20) years.
  - a. Develop alternatives to address shortcomings identified during plant evaluation.
  - b. Evaluation will include preparation of opinion of probable project, construction, and operation and maintenance costs based on AACE Class 5 cost estimate classification.
  - c. Opinion of probable costs (OPC) will include a net present worth analysis for each identified alternative.
  - d. Estimate anticipated impacts on user rates for the recommended improvements.
  - e. Alternatives evaluation will also include a qualitative evaluation of non-economic factors including ease of operation, environmental impact, ability to meet potential future regulatory requirements, upgrade capability, reliability, public acceptance, health and safety, and performance history.
2. Facilitate meeting (Workshop No. 2) with the Town to discuss long-term treatment options and recommendations.
  - a. Workshop No. 2 will be attended by the following Dewberry personnel:
    - i. Technical Advisor.
    - ii. Project Manager.
    - iii. Project Engineer.
3. Meetings, Workshops, and Site Visits
  - a. One (1) workshop with the Town via teleconference or videoconference (Workshop No. 2).
4. Deliverables
  - a. Workshop agenda and notes.
  - b. Town will be provided with an electronic copy for each deliverable.
5. Assumptions
  - a. Town WTP Operations Staff shall attend Workshop No. 2.
  - b. Anticipated impacts on user rates for the recommended improvements does not include a rate study analysis. Work proposed includes adding the cost of improvements over a 20-year horizon assuming a basis of single family equivalents or equivalent residential units (EQR) within the Town's service area with a reserve ratio in accordance with Colorado's State Revolving Fund requirements.

#### **F. Task 6: Capital Improvement Plan Recommendations**

1. Recommend short and long-term improvements to the WTP based upon the analyses in Task 4 and 5.
2. Prepare schedule for the recommended improvements with identified regulatory milestones.

## **G. Task 7: WTP Master Plan Report**

1. Preparation of WTP Master Plan Report
  - a. Prepare Draft WTP Master Plan Report and submit to the Town for their review and comment. Town will submit written comments to Dewberry within two (2) weeks after receipt of WTP Master Plan Report.
  - b. Draft WTP Master Plan Report will include summary of the following:
    - i. Demand and Growth Analysis
    - ii. Treatment Alternatives and Recommended Improvements
    - iii. OPCs
    - iv. CIP Recommended Schedule and Milestones
2. Workshop No. 3
  - a. Facilitate workshop with the Town to discuss the Draft WTP Master Plan Report. Workshop format scope includes video conference scheduled and managed by Dewberry.
  - b. Workshop No. 3 will be attended by the following Dewberry personnel:
    - i. Technical Advisor.
    - ii. Project Manager.
    - iii. Project Engineer
3. Finalize WTP Master Plan Report and submit final electronic copy to the Town.
4. Meetings, Workshops, and Site Visits
  - a. One (1) workshop with the Town via teleconference or videoconference (Workshop No. 3).
5. Deliverables
  - a. Workshop agenda and notes.
  - b. Town will be provided with an electronic and hard copy for each deliverable.
6. Assumptions
  - a. Town WTP Operations Staff shall attend Workshop No. 3.
  - b. Additional iterations to prepare deliverables beyond what is described herein are considered Additional Services.
  - c. Town shall review the Draft WTP Master Plan Report for any misrepresentations and inaccuracies prior to the Workshop No. 3 and discuss these items for correction in the meeting.
  - d. Town shall review the Final WTP Master Plan Report for any misrepresentations and inaccuracies and report any thereof immediately to Dewberry for review.
  - e.

## **III. ADDITIONAL SERVICES**

Dewberry will furnish Additional Services for changes in this proposed Scope of Services or as requested by the Town and will provide an estimated fee for Additional Services. Dewberry will not perform Additional Services without prior written authorization from the Town. Additional Services not provided in this Scope of Services include, but are not limited to, the following:



- A. Items identified as Additional Services in each task under the Assumptions subsections in SECTION II – SCOPE OF WORK.
- B. Design, bidding, and construction-phase services.
- C. Geotechnical evaluation: The need for a geotechnical investigation or extent of a geotechnical investigation and associated design services are not included in the proposed scope of services.
- D. Assistance with the Town WTP permitting processes and funding applications, funding contract development, and administrative services following funding contract execution.
- E. Permitting fees.
- F. Conducting archaeological/ historical/property surveys, site survey, survey specific to identifying the boundary of the 100-year and 500-year flood elevation and infiltration and inflow analysis.
- G. A task that is not explicitly included is explicitly excluded.

#### IV. PRELIMINARY PROJECT SCHEDULE

Dewberry estimates completion of the proposed scope of services, ~~within six (6) months from the notice to proceed.~~ *including submittal to the state by 6/30/22* *JA*

1. The proposed project schedule was developed based on the Town providing the information delineated herein in a timely manner.
2. Dewberry is not responsible for time delays caused by circumstances beyond the control of Dewberry.

#### V. ENGINEERING FEE

Dewberry proposes to complete the proposed Scope of Services described herein for the following estimated lump sum fee with a total of \$99,835:

Task Description	Amount
Task 1: Project Management	\$ 8,740
Task 2: Project Document Review and Kick-off Meeting	\$ 11,760
Task 3: Basis of Evaluation	\$ 14,300
Task 4: Short-term Alternatives Evaluation	\$ 18,535
Task 5: Long-term Alternatives Evaluation	\$ 27,225
Task 6: Capital Improvement Plan Recommendations	\$ 3,360
Task 7: Master Plan Report	\$ 15,915
<b>Total</b>	<b>\$ 99,835</b>

#### VI. AUTHORIZATION

This Agreement authorizes Dewberry to provide engineering services described in this proposal per attached terms and conditions. Please contact me if you require any modifications to this Agreement or need any other assistance.

Dewberry Engineers Inc.

Signature:



Name:

Patrick D. Radabaugh, PE

Title:

Senior Associate

Date:

February 1, 2022

Town of Silt

Signature:



Name:

Jeff Layman

Title:

Town Administrator

Date:

2/15/22

Town of Silt - WTP Master Plan			PIC	QA/QC - Technical Advisor	Civil/Process			Admin	Expenses		
Total Fee \$99,835		Project Title	Principal-In-Charge	Technical Advisor	Project Manager	Project Engineer	Designer	Admin	Mileage	Meals	ODCs
	Total Effort	Billable Rate	\$300.00	\$220.00	\$205.00	\$150.00	\$125.00	\$110.00	\$0.56		-
<b>Task 1: Project Management</b>											
1.1	Project Setup and Internal Meeting	\$1,530.00	1		4	2		1			
1.2	Task 1	\$410.00			2						
1.3	Task 2	\$410.00			2						
1.4	Task 3	\$410.00			2						
1.5	Task 4	\$410.00			2						
1.6	Task 5	\$410.00			2						
1.7	Task 6	\$410.00			2						
1.8	Tracking and Invoices	\$1,230.00			6						
1.9	QA/QC	\$3,520.00		16							
	Hours	32	1	16	22	2		1			
	Fee	\$9,760.00	\$100.00	\$3,520.00	\$4,510.00	\$300.00		\$110.00			
<b>Task 2: Project Document Review and Kick-off Meeting</b>											
2.1	Kick-off meeting (included in WWTF MP)	\$0.00									
2.2	Field Site Visit Follow-up Meeting and Notes	\$1,860.00		2	4	4					
2.3	Water data review (current)	\$2,935.00		1	3	14					
2.4	Planning documents review	\$2,335.00		1	3	10					
2.5	Permitting documents review	\$1,980.00		1	2	9					
2.6	Design plan documents review	\$2,650.00		2	2	12					
	Hours	79		7	14	49					
	Fee	\$11,740.00		\$1,640.00	\$2,870.00	\$7,190.00					
<b>Task 3: Basis of Evaluation</b>											
3.1	CDPHE	\$0.00									
3.1.1	Regulation Review	\$1,610.00			2	8					
3.1.2	CDPHE coordination - Regulatory	\$1,010.00			2	4					
3.1.3	CDPHE coordination - Funding	\$1,010.00			2	4					
3.2	Projections	\$0.00									
3.2.1	Demands and Source Water Supply	\$4,530.00			6	22					
3.2.2	Population	\$1,610.00			2	8					
3.2.3	Land Use	\$1,610.00			2	8					
3.3	Drinking water quality requirements	\$2,920.00			4	14					
	Hours	83			20	66					
	Fee	\$11,300.00			\$3,100.00	\$7,200.00					
<b>Task 4: Short-term Alternatives Evaluation</b>											
4.1	Raw water intake	\$1,010.00			2	4					
4.2	Pretreatment	\$2,920.00			4	14					
4.3	Sedimentation	\$1,610.00			2	8					
4.4	Filtration	\$2,920.00			4	14					
4.5	Disinfection	\$2,920.00			4	14					
4.6	Clearwell	\$505.00			1	2					
4.7	Backwash settling basin	\$1,625.00		1	1	8					
4.8	Treatment matrix analysis and selection	\$1,610.00			2	8					

Town of Silt - WTP Master Plan			PIC	QA/QC - Technical Advisor	Civil/Process			Admin	Expenses		
Total Fee \$99,835		Project Title	Principal-In-Charge	Technical Advisor	Project Manager	Project Engineer	Designer	Admin	Mileage	Meals	ODCs
	Total Effort	Billable Rate	\$300.00	\$220.00	\$205.00	\$150.00	\$125.00	\$110.00	\$0.66		
4.9	CADD figures	\$1,555.00			1	4	6				
4.10	Workshop No. 1	\$1,860.00	Prep and attendance	2	4	4					
	Hours	164		3	25	86	6				
	Fee	\$16,940.00		\$660.00	\$5,125.00	\$12,400.00	\$750.00				
Task 5: Long-term Alternatives Evaluation											
5.1	Raw water intake	\$1,310.00			2	6					
5.2	Pretreatment	\$1,910.00			2	10					
5.3	Sedimentation	\$1,910.00			2	10					
5.4	Filtration	\$1,910.00			2	10					
5.5	Disinfection	\$1,910.00			2	10					
5.6	Clearwell	\$1,910.00			2	10					
5.7	Backwash settling basin	\$1,910.00			2	10					
5.8	Chemical feed systems and storage	\$1,910.00			2	10					
5.9	Treatment matrix analysis and selection	\$1,910.00			2	10					
5.10	Cost Evaluation	\$1,910.00			2	10					
5.10.1	Capital	\$1,910.00			2	10					
5.10.2	O&M	\$1,910.00			2	10					
5.10.3	User Rate Impact	\$1,760.00			2	9					
5.11	Workshop No. 2	\$3,145.00		3	7	7					
	Hours	168		3	33	102					
	Budget Revenue	\$27,225.00		\$660.00	\$5,775.00	\$19,500.00					
Task 6: Capital Improvement Plan Recommendations											
6.1	Regulatory Timeline	\$1,530.00		1	2	6					
6.2	CIP Timeline	\$1,830.00		1	2	8					
		\$0.00									
	Hours	20		2	4	14					
	Budget Revenue	\$3,360.00		\$660.00	\$920.00	\$1,780.00					
Task 7: WTP Master Plan Report											
7.1	WTP MP Report	\$0.00									
7.1.1	Draft	\$7,940.00			8	32	12				
7.1.2	Workshop No. 3	\$3,145.00		3	7	7					
7.1.3	Draft Update with Comments	\$3,220.00			4	16					
7.1.4	Final	\$1,610.00			2	8					
	Hours	39		3	21	63	12				
	Budget Revenue	\$15,915.00		\$660.00	\$4,305.00	\$19,460.00	\$1,600.00				

Total Hours		1	34	139	408	18	1				
Fee Total		\$300	\$7,450	\$28,485	\$61,200	\$2,260	\$110	\$0	\$0	\$0	\$0



**ATTACHMENT B  
STANDARD TERMS AND CONDITIONS**

These Standard Terms and Conditions ("STCs") are incorporated by reference into the foregoing agreement or proposal, along with any future modifications or amendments thereto made in accordance with Paragraph 23 below (the "Agreement") between Dewberry ("we" or "us" or "our") and its client ("you" or "your") for the performance of services as defined in our proposal ("Services"). These STCs are fully binding upon you, just as if they were fully set forth in the body of the Agreement, and shall supersede any term or provision elsewhere in the Agreement in conflict with these STCs.

1. **Period of Offer.** Unless we decide, in writing, to extend the period for acceptance by you of our proposal, you have 90 days from our proposal date to accept our proposal. We have the right to withdraw the proposal at any time before you accept. Delivery of a signed proposal—whether original or copy—to us constitutes your acceptance of the proposal, including attachments expressly incorporated into the proposal by reference. The proposal and incorporated attachments shall constitute the entire Agreement between you and us. If you request us to render Services before you deliver a signed proposal to us, and we render Services in accordance with the proposal, you agree that the proposal and these STCs constitute the Agreement between you and us even if you fail to return a signed proposal to us.
2. **Scope of Services.** For the fee set forth in the Agreement, you agree that we shall only be obligated to render the Services expressly described in the Agreement. Our Services shall not be construed as providing legal, accounting, or insurance services. Unless the Agreement expressly requires, in no event do we have any obligation or responsibility for:
  - a. The correctness or completeness of any document which was prepared by another entity.
  - b. The correctness or completeness of any drawing prepared by us, unless it was properly signed and sealed by a registered professional on our behalf.
  - c. Favorable or timely comment or action by any governmental entity on the submission of any construction documents, land use or feasibility studies, appeals, petitions for exceptions or waivers, or other requests or documents of any nature whatsoever.
  - d. Taking into account off-site circumstances other than those clearly visible and actually known to us from on-site work.
  - e. The actual location (or characteristics) of any portion of a utility which is not entirely visible from the surface.
  - f. Site safety or construction quality, means, methods, or sequences.
  - g. The correctness of any geotechnical services performed by others, whether or not performed as our subcontractor.
  - h. The accuracy of earth work estimates and quantity take-offs, or the balance of earthwork cut and fill.
  - i. The accuracy of any opinions of construction cost, financial analyses, economic feasibility projections or schedules for the Project.

Should shop drawing review be incorporated into the Services, we shall pass on the shop drawings with reasonable promptness. Our review of shop drawings will be general, for conformance with the design concept of the Project to which this Agreement relates ("Project") and compliance with the information given in the construction documents, and will not include quantities, detailed dimensions, nor adjustments of dimensions to actual field conditions. Our review shall not be construed as permitting any departure from contract requirements nor as relieving your contractor of the sole and final responsibility for any error in details, dimensions or otherwise that may exist.

3. **Your Oral Decisions.** You, or any of your directors, officers, partners, members, managers, employees or agents having apparent authority from you, may orally: (a) make decisions relating to Services or the Agreement; (b) request a change in the scope of Services under the Agreement; or (c) request us to render additional Services under the Agreement, subject to our right to require you to submit the request in writing before your decision or request shall be considered to have been effectively made. You may, at any time, limit the authority of any or all persons to act orally on your behalf under this Paragraph 3, by giving us seven 7 days advance written notice.
4. **Proprietary Rights.** The drawings, specifications and other documents prepared by us under this Agreement are instruments of our service for use solely for the Project and, unless otherwise provided, we shall be deemed the author of these documents and shall retain all common law, statutory, and other reserved rights, including the copyright and rights to any Dewberry trademarks. Upon payment in full for our Services, you shall be permitted to retain copies, including reproducible copies of our instruments of service for information and reference for the Project. Our instruments of service shall not be used by you or others on other projects for any reason or for completion or modification of this Project by other professionals, unless you enter into a written agreement with us allowing for such use. Submission or distribution of documents to meet official regulatory requirements or for similar purposes in connection with the Project is not to be construed as publication inconsistent with our reserved rights. You shall defend, indemnify and hold us harmless, and release us, from any and all liability, loss, damages, claims and demands for loss, damages, property damages or bodily injury, arising out of any use (including, without limitation, the means or media of transfer, possession, use, or alteration) of our instruments of service by (i) you, if such use is inconsistent with our reserved rights or this Paragraph 4, or (ii) any third party, regardless of the manner of use, if such third party received our instruments of service directly or indirectly from you (including if we or others have transmitted such instruments of service to the third party at your request or direction, for your benefit, or, and without limiting the foregoing, pursuant to a contractual obligation that is directly or indirectly derived (or flowed down) from a contract to which you have privity).
5. **Fees and Compensation.** If you request us to render services not specifically described in the Agreement, or, if we or anyone in our employ, is called upon to be deposed or to testify in a matter in which we are not a named party, that relates to the Project, you agree to compensate us for such services in accordance with the hourly rates as set forth on Attachment A of this Agreement or in any subsequently effective schedule, unless otherwise agreed in writing. If no compensation rate is set forth on Attachment A, or through written agreement between you and us, we shall be compensated for such services at our then current hourly rates. We may unilaterally increase our lump sum or unit billing rates on each anniversary of your acceptance of this Agreement by as much as five percent or the percentage increase in the CPI-W (U.S. Department of Labor Consumer Price Index-Washington), whichever is greater. Hourly rates are subject to periodic revision at our discretion.
6. **Period of Service.** The provisions of this Agreement and the compensation provided for under the Agreement have been established in anticipation of the orderly and continuous progress of the Project. Our obligation to render the Services will extend only for that period which may reasonably be required to complete the Services in an orderly and continuous manner, and we may then, at our sole option, terminate the Agreement.
7. **Reimbursable Expenses.** Unless the Agreement otherwise provides, you shall reimburse us, or our affiliates, for all expenses we incur to render the Services for you under this Agreement, plus fifteen percent. We may submit invoices for reimbursable expenses separately from invoices for Services.
8. **Payment Terms.** We may submit invoices at any time to you for Services and for reimbursable expenses incurred. Invoices are payable within 30 days of the invoice date, and you agree to pay a finance charge of 1½% per month on any unpaid balance not received by us within 30 days of the invoice date. If you require payment via credit card, Dewberry will assess a 3% processing fee on the total amount invoiced. Invoices may be based either upon our estimate of the proportion of the total Services actually completed at the time of billing for lump sum or fixed fee services, or in the case of hourly services, upon rendering of the Services. If any invoice is not paid within 30 days of the invoice date, we shall have the right either to suspend the performance of our Services until all invoices more than 30 days past due are fully paid or to terminate the agreement and to initiate proceedings to recover amounts owed by you. Additionally, we shall have the right to withhold from you the possession or use of any drawings or documents prepared by us for you under this or any other agreement with you until all delinquent invoices are paid in full. You shall not offset payments of our invoices by any amounts due or claimed to be due for any reason. If you do not give us written notice disputing an invoice within 20 days of the invoice date, the invoice shall conclusively be deemed correct. All payments made by you should specify the invoice numbers being paid. If we receive payments that do not specify the invoices being paid, you agree that we may apply payments in our sole discretion. Time is of the essence of your payment obligations; and your failure to make full and timely payment shall be deemed a material breach.
9. **Information from You and Public Sources.** You shall furnish us all plans, drawings, surveys, deeds and other documents in your possession, or that come into your possession, which may be related to the Services, and shall inform us in writing about all special criteria or requirements related to the Services (together, "Information"). We may obtain deeds, plats, maps and any other information filed with or published by any governmental or quasi-governmental entity (together, "Public Information"). Unless we are engaged in writing as an additional service to independently verify such, we may rely upon Information and Public Information in rendering Services. We shall not be responsible for errors or omissions or additional costs arising out of our reliance on Information or Public Information. You agree to give prompt notice to us of any development or occurrence that affects the scope or timing of Services, or any defect in the final work submitted by us, or errors or omissions of others as they are discovered. We shall not be responsible for any adverse consequence arising in whole or in part from your failure to provide accurate or timely information, approvals and decisions, as required for the orderly progress of the Services.
10. **Plan Processing.** We may submit plans and related, or other, documents to public agencies for approval. However, it may be necessary, in order to serve your interests and needs, for us to perform special processing, such as attending meetings and conferences with different agencies, hand carrying plans or other documents from agency to agency, and other special services. These special services are not included in the basic fee and shall be performed as additional services on an hourly fee basis in accordance Paragraph 5 above.



- 11. Meetings and Conferences.** To the extent the Agreement provides, we will attend meetings and conferences that you, or your representatives, reasonably require. Furthermore, we will meet on an as-needed basis with public agencies that might be involved in the Project. Because we cannot forecast the scope and nature of these meetings and conferences, we will perform meeting and conference services on an hourly fee basis in accordance with our applicable hourly rate schedule.
- 12. Your Claims.** You release us from, and waive, all claims of any nature for any and all errors or omissions by us related to our performance under this Agreement, or in the performance of any supplementary services related to this Agreement, unless you have strictly complied with all of the following procedures for asserting a claim, as to which procedures time is of the essence:
  - a. You shall give us written notice within 10 days of the date that you discover, or should, in the exercise of ordinary care, have discovered that you have, or may have, a claim against us. If you fail to give us written notice within such 10 days, then such claim shall forever be barred and extinguished.
  - b. If we accept the claim, we shall have a reasonable time to cure any error or omission and any damage. This shall be your sole remedy, and you must not have caused the error or omission, or any damage resulting from the error or omission, to be cured, if we are ready, willing and able to do so.
  - c. If we reject the claim, we shall give you written notice of our rejection within 30 days of our receipt of your notice of claim. You shall then have 60 days to give us an opinion from a recognized expert in the appropriate discipline, corroborating your claim that we committed an error or omission, and establishing that the error or omission arose from our failure to use the degree of care ordinarily used by professionals in that discipline in the jurisdiction local to the Project. If you fail to give us such an opinion from a recognized expert within 60 days from the date we send you notice of our rejection of the claim, then such claim shall forever be barred and extinguished.
  - d. We shall have 60 days from receipt of your expert's written opinion to reevaluate any claim asserted by you. If we again reject such claim, or if the 60-day period from receipt of the written opinion of your expert elapses without action by us, then you may have recourse to such other remedies as may be provided under this Agreement.
- 13. Hazardous or Toxic Wastes or Substances, Pollution or Contamination.** You acknowledge that Services rendered under this Agreement may be affected by hazardous or toxic wastes or substances, or pollution or contamination due to the presence of hazardous or toxic wastes or substances. To induce us to enter into this Agreement, you agree to indemnify, defend and hold us harmless from and against any and all liability, loss, damages, claims and demands for loss, damages, property damages or bodily injury, that relate, in any way, to both (a) hazardous or toxic wastes or substances, or pollution or contamination due to the presence of hazardous or toxic wastes or substances, and (b) the performance by us of our obligations under the Agreement, whether or not such performance by us is claimed to have been, or was, or may have been, negligent. Unless otherwise expressly set forth in this Agreement, we shall have no responsibility for searching for, or identifying, any hazardous or toxic wastes or substances, or pollution or contamination due to the presence of hazardous or toxic wastes or substances; but if we discover or suspect the presence of any such wastes, substances, pollution or contamination due to the presence of hazardous or toxic wastes or substances, then we, in our sole discretion, and at any time, may stop work under, or terminate, this Agreement, in which event we will have no further liability to you for performance under this Agreement, and you shall make the payments to us required by Paragraph 14 of the STCs.
- 14. Termination.** Either party may terminate the Agreement if the other party materially breaches the Agreement and does not cure the breach within 7 days after receiving notice of the breach from the non-breaching party. You shall immediately pay us for our Services rendered and expenses incurred through the termination date, including fees and expenses that we incur as a result of the termination.
- 15. Payment of Other Professionals.** If this Agreement includes continuation of services begun by other architects, engineers, planners, surveyors, or other professionals, we may suspend our Services until you make arrangements satisfactory to such other professionals for payment. If satisfactory arrangements have not been made within a time determined by us to be reasonable, then we may in our sole discretion terminate this Agreement.
- 16. Assignment and Third-Party Beneficiaries.** Neither party shall assign or transfer any rights, interests or claims arising under this Agreement without the written consent of the other, provided, however, that we are permitted to (i) employ independent consultants, associates, and subcontractors as we may deem necessary to render the Services, (ii) assign our right to receive compensation under this Agreement, and (iii) transfer the Agreement to an affiliate of ours, in our sole discretion, with written notice to you (an affiliate for purposes of this Paragraph 16 is defined as any other business entity that directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with, us). This Agreement does not confer any benefit or right upon any person or entity other than the parties, except that our partners, members, managers, directors, officers, employees, agents and subcontractors shall have and be entitled to the protection afforded us under Paragraphs 9, 12, 13, 16, 20 and 22 of this Agreement.
- 17. Applicable Law and Forum Selection.** The Commonwealth of Virginia's laws shall govern this Agreement in all respects, including matters of construction, validity, and performance. Except as provided in Paragraph 18, the parties agree that the courts of Fairfax County, Virginia, and the Federal District Court, Eastern District of Virginia, Alexandria Division, (together, "Courts") shall have exclusive jurisdiction over any controversy, including matters of construction, validity, and performance, arising out of this Agreement. The parties consent to the jurisdiction of the Courts and waive any objection either party might otherwise be entitled to assert regarding jurisdiction. The parties irrevocably waive all right to trial by jury in any action, proceeding, or counterclaim arising out of or related to this Agreement.
- 18. Arbitration of Our Claims for Compensation.** Instead of proceeding in court, we, in our sole and absolute discretion, may submit any claim for compensation due us under this Agreement to arbitration in Fairfax County, Virginia in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association, and judgment upon the arbitration award may be entered in any court having jurisdiction. You agree not to assert any counterclaim or any defense by way of set-off in such arbitration, and that the arbitrator or panel shall have no authority to consider, or to render, an award based upon any such counterclaim or defense by way of set-off. We shall have the right to withdraw our demand for arbitration at any time before the arbitration hearing starts by giving written notice to the arbitrator or panel and you; and upon the giving of such notice by us, the arbitration shall terminate, no award shall be rendered, and we may then pursue our remedies in accordance with Paragraph 17 above.
- 19. Severability.** If any part, term, or provision of this Agreement is held to be illegal or unenforceable, the validity and enforceability of the remaining parts, terms, and provisions of this Agreement shall not be affected, and each party's rights shall be construed and enforced as if the Agreement did not contain the illegal or unenforceable part, term, or provision.
- 20. Limitations on Liability.** In recognition of the relative risks and benefits of the Project to you and us, you agree, that our liability for any loss, damages, property damages or bodily injury of or to you caused in whole or in part by us in the performance of this Agreement or any supplementary services in any way related to this Agreement, shall be limited in the aggregate to the amount of fees that you have paid to us for the Services. The parties intend that the foregoing limitation on liability shall apply to all claims, whether sounding in tort, contract, warranty, or otherwise. You release, waive, and shall not seek contribution from, or indemnification by, us for any claims of any nature made against you by any other person who may suffer any loss, damages, property damages or bodily injury in any manner associated with our services, or any supplementary services in any way related to this Agreement. Notwithstanding anything to the contrary elsewhere in the Agreement, we shall not be liable to you, in any event or for any amount, for delays; or for consequential, special or incidental damages; or for punitive or exemplary damages; or for the cost to add an item or component that we omitted from the instruments of service due to our negligence, to the extent that item or component would have otherwise been necessary, or adds value or betterment, to the Project. Should you find the terms of this Paragraph 20 unacceptable, we are prepared to negotiate a modification in consideration of an equitable surcharge to pay our additional insurance premiums and risk.
- 21. Payment of Attorney's Fees.** The losing party shall pay the winning party's reasonable attorney's fees and expenses for the prosecution or defense of any cause of action, claim or demand arising under this Agreement in any court or in arbitration.
- 22. Indemnification.** You agree to indemnify, defend and hold us harmless from and against any and all liability, loss, damages, claims and demands for loss, damages, property damages or bodily injury, arising out of acts or omissions by you, or your contractor, subcontractor or other independent company or consultant employed by you to work on the Project, or their respective partners, members, managers, directors, officers, employees, agents or assigns; or arising out of any other operation, no matter by whom committed or omitted, for and on behalf of you, or such contractor, subcontractor or other independent company or consultant, whether or not due in part to errors or omissions by us in the performance of this Agreement, or in the performance of any supplementary service in any way related to this Agreement, provided that you are not required to indemnify and hold us harmless under this Paragraph 22 in the event of our sole negligence.
- 23. Integration Clause.** The Agreement represents the entire agreement of the parties. No prior representations, statements, or inducements made by either us, you, or the respective agents of either, that is not contained in the Agreement shall enlarge, modify, alter, or otherwise vary the written terms of the Agreement unless they are made in writing and made a part of the Agreement by attachment, incorporated by reference in the Agreement or signed or initialed on behalf of both parties.
- 24. Notice.** Any notices issued to us shall be sent to our project manager with a copy sent via email to [Notices@dewberry.com](mailto:Notices@dewberry.com) or mailed to 8401 Arlington Blvd, Fairfax VA 220131, Attn: Legal Department.



February 1, 2022

Mr. Jeff Layman  
Town of Silt  
Town Administrator  
231 N. 7<sup>th</sup> Street  
PO Box 70  
Silt, CO 81652

RE: Town of Silt Wastewater Treatment Facility Master Plan - Scope of Services Proposed Agreement

Dear Mr. Layman,

Dewberry is pleased to submit this proposal for professional engineering services for the Town of Silt Wastewater Treatment Facility Master Plan (hereinafter referred to as Project). This letter serves as our understanding of the Project background, scope, schedule, and fee .

## **I. PROJECT UNDERSTANDING**

The following constitutes our understanding of the Project and serves as the basis for the proposed scope of services, schedule, and fee. Significant modifications to the Project may result in modifications to Dewberry's services and fees.

The Town of Silt (Town) owns and operates a 0.75 million gallons per day (mgd) wastewater treatment facility (WWTF) that was constructed in 2005 and subject to the Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Division (WQCD) regulations. An initial step in addressing the challenges posed by regulations is the development of the Town's WWTF Master Plan. Project will consist of an evaluation of Town growth, WWTF, and WQCD regulations to assist the Town in budgeting and implementing recommended improvements.

This letter proposal includes seven tasks as detailed below.

1. Task 1: Project Management
2. Task 2: Project Document Review and Kick-off Meeting
3. Task 3: Basis of Evaluation
1. Task 4: Short-term Alternatives Evaluation
2. Task 5: Long-term Alternatives Evaluation
3. Task 6: Capital Improvement Plan Recommendations
4. Task 7: WWTF Master Plan Report

This proposal includes scope, schedule, and fee for the project. Scope of Services Proposed Agreement dated February 1 2022.

## **II. SCOPE OF SERVICES**

The scope of services includes the following tasks for Phase 1:

1. Task 1-1: Project Management
2. Task 1-2: Project Document Review and Kick-off Meeting
3. Task 1-3: Basis of Evaluation
4. Task 1-4: Short-term Alternatives Evaluation

## **B. Task 1-1: Project Management**

The project management task includes:

1. Manage Dewberry staff on Project budget, schedule, and quality goals.
2. Provide coordination and communication with team members.
3. Implementing Quality Assurance and Quality Control services on all products to the Town.
4. Preparation and review of invoices are included in this task.

## **C. Task 2: Project Document Review and Kick-off Meeting**

1. Project Document Review
  - a. Conduct one (1) on-site Kick-off Meeting with the Town to discuss project approach and objectives. Kick-off Meeting will coincide with the Field Site Visit.
  - b. Kick-off Meeting and Field Site Visit will be attended by the following Dewberry personnel:
    - i. Project Manager.
    - ii. Senior Project Engineer.
    - iii. Project Engineer.
  - c. Field Site Visit
    - i. Coordinate with Town WWTF Operations Staff to collect information on the major WWTF processes and equipment.
    - ii. Interview operations staff to gather institutional knowledge of current and historical operations, maintenance, and performance.
2. Meetings, Workshops, and Site Visits
  - a. One (1) joint Kick-off Meeting and Field Site Visit.
3. Deliverables
  - a. Kick-off Meeting and Field Site Visit agenda and notes (electronic and hard copies).
4. Assumptions
  - a. Town shall provide all documents available for the Project Document Review. Documents shall include, but not be limited to, five years of influent, operational, and effluent data, master planning reports, facility reports, permitting reports, regulatory documents, geotechnical reports, and as-built (record) drawings in PDF format. It is assumed these documents are accurate or current.
  - b. Town Operations Staff shall be available for interviews during the Kick-off Meeting and Field Site Visit.
  - c. Time for on-site meetings, workshops, and site visits includes travel time.



## **D. Task 3: Basis of Evaluation**

1. Wastewater Characterization Evaluation
  - a. Current and 20-year Future Conditions
    - i. Service Area and Land Use
      - Review existing wastewater data and planning documentation related to the Town's service area and land use to baseline the current service area and planned development.
      - Review existing wastewater data and planning documentation related to the Town's potential future service area and land use to estimate potential future flows and loads.
      - Evaluate influent and effluent biochemical oxygen demand (BOD<sub>5</sub>), total suspended solids (TSS), ammonia, total inorganic nitrogen (TIN), and phosphorus as part of the loading estimates (current and future) including annual average daily, maximum monthly, maximum daily, and associated peaking factors.
      - Evaluate influent average daily, maximum monthly, and maximum daily flows as part of the flow estimates. Project future flows and loads.
      - Evaluate existing intermediate process control data including plant data for RAS/WAS, digester decant, digested sludge influent to dewatering, dewatered solids, and hauling data.
    - ii. Population: Current and 20-year Estimates
      - Review existing planning documents and perform a comparative analysis of past projections to County assessor and Town population and employment data to update current estimates.
      - Town shall coordinate with Dewberry to develop assumptions for the 20-year projections including population, future growth, expansion plans, flows, and loads.
2. Regulatory review
  - a. Review CDPHE WQCD regulations applicable to the Town WWTF.
3. Meetings, Workshops, and Site Visits
  - a. None, unless requested and approved by the Town as Additional Services.
4. Deliverables
  - a. None, unless requested and approved by the Town as Additional Services.
5. Assumptions
  - a. Town shall provide all documents necessary for the Wastewater Characterization Evaluation in electronic format. Documents shall include, but not be limited to: GIS mapping files, land use documents, master planning reports, facility reports, permitting reports, as-built (record) drawings in PDF format, population data, easement maps, and property maps. These documents will be assumed to be the best available information at the time of the request and are assumed to be accurate and current.
  - b. Town shall provide Town five (5) years of historical wastewater data in Microsoft Office Excel format.

- c. It is Dewberry's understanding that infiltration and inflow data is not collected by the Town. Therefore, the Town will coordinate with Dewberry to estimate peaking factors.
- d. Town shall provide wastewater financial operating records: expense and revenue summaries for the past five (5) years.
- e. Town shall provide customer data by monthly volume, type, and fees.
- f. Town does not have data for the refractory portion of nitrogen, phosphorus, and carbon in their wastewater; thus, assumptions for these species will be used in the proposed efforts if applicable.
- g. Town shall provide electricity usage as well as sewer rate data for the past five (5) years, copy of the current sewer use ordinance, and significant industrial user (SIU) agreements with industries.
- h. The request for preliminary effluent limitations (PELs) will not be submitted to CDPHE. Therefore, effluent limitations for metals, salts, electroconductivity, sodium adsorption ratio, cyanide, and temperature will not be included as part of the scope of services described herein as part of the evaluation consideration of those parameters.
- i. Any and all communications with CDPHE do not definitively establish any future nutrient regulations imposed on the wastewater treatment plant. Projections of nutrient regulations and nutrient effluent limitations for the Town will be based upon discussions with CDPHE and the Town on Regulation 31: The Basic Standards and Methodologies for Surface Water (effective 06/30/20).

#### **E. Task 4: Short-term Alternatives Evaluation**

- 1. Perform a short-term treatment alternatives evaluation that includes the preparation of compilation of recommended WWTF improvements over the next ten (10) years.
  - a. Evaluation will include preparation of opinion of probable project, construction, and operation and maintenance costs based on AACE Class 5 cost estimate classification.
  - b. Opinion of probable costs (OPC) will include a net present worth analysis for each identified alternative.
- 2. Facilitate meeting (Workshop No. 1) with the Town to discuss short-term treatment options and recommendations.
  - a. Workshop No. 1 will be attended by the following Dewberry personnel:
    - i. Technical Advisor.
    - ii. Project Manager.
    - iii. Project Engineer.
- 3. Meetings, Workshops, and Site Visits
  - a. One (1) workshop with the Town via teleconference or videoconference (Workshop No. 1).
- 4. Deliverables
  - a. Workshop agenda and notes.
  - b. Town will be provided with an electronic copy for each deliverable.
- 5. Assumptions

- a. Town WWTF Operations Staff shall attend Workshop No. 1.

#### **F. Task 5: Long-term Alternatives Evaluation**

1. Perform a long-term treatment alternatives evaluation that includes the preparation of compilation of recommended WWTF improvements over the next ten (10) to twenty (20) years.
  - a. Evaluation will include preparation of opinion of probable project, construction, and operation and maintenance costs based on AACE Class 5 cost estimate classification.
  - b. Opinion of probable costs (OPC) will include a net present worth analysis for each identified alternative.
  - c. Estimate anticipated impacts on user rates for the recommended improvements.
  - d. Alternatives evaluation will also include a qualitative evaluation of non-economic factors including ease of operation, environmental impact, ability to meet potential future regulatory requirements, upgrade capability, reliability, public acceptance, health and safety, and performance history.
2. Facilitate meeting (Workshop No. 2) with the Town to discuss long-term treatment options and recommendations.
  - a. Workshop No. 2 will be attended by the following Dewberry personnel:
    - i. Technical Advisor.
    - ii. Project Manager.
    - iii. Project Engineer.
3. Meetings, Workshops, and Site Visits
  - a. One (1) workshop with the Town via teleconference or videoconference (Workshop No. 2).
4. Deliverables
  - a. Workshop agenda and notes.
  - b. Town will be provided with an electronic copy for each deliverable.
5. Assumptions
  - a. Town WWTF Operations Staff shall attend Workshop No. 2.
  - b. Anticipated impacts on user rates for the recommended improvements does not include a rate study analysis. Work proposed includes adding the cost of improvements over a 20-year horizon assuming a basis of single family equivalents (SFE) or equivalent residential unit (EQR) within the Town's service area with a reserve ratio in accordance with Colorado's State Revolving Fund requirements.

#### **G. Task 6: Capital Improvement Plan Recommendations**

1. Recommend short and long-term improvements to the WWTF.
2. Prepare schedule for the recommended improvements with identified regulatory milestones.

## **H. Task 7: WWTF Master Plan Report**

1. Preparation of WWTF Master Plan Report
  - a. Prepare Draft WWTF Master Plan Report and submit to the Town for their review and comment. Town will submit written comments to Dewberry within two (2) weeks after receipt of WWTF Master Plan Report.
  - b. Draft WWTF Master Plan Report will include summary of the following:
    - i. Flows and Loads Analysis
    - ii. Treatment Alternatives and Recommended Improvements
    - iii. OPCs
    - iv. CIP Recommended Schedule and Milestones
2. Workshop No. 3
  - a. Facilitate workshop with the Town to discuss the Draft WWTF Master Plan Report. Workshop format scope includes video conference scheduled and managed by Dewberry.
  - b. Workshop No. 3 will be attended by the following Dewberry personnel:
    - i. Technical Advisor.
    - ii. Project Manager.
    - iii. Project Engineer.
3. Finalize WWTF Master Plan Report and submit final electronic copy to the Town.
4. Meetings, Workshops, and Site Visits
  - a. One (1) workshop with the Town via teleconference or videoconference (Workshop No. 3).
5. Deliverables
  - a. Workshop agenda and notes.
  - b. Final copy of Completed Town of Silt WWTF Master Plan Report.
  - c. Town will be provided with an electronic and hard copy for each deliverable.
6. Assumptions
  - a. Town WWTF Operations Staff shall attend Workshop No. 3.
  - b. Additional iterations to prepare deliverables beyond what is described herein are considered Additional Services.
  - c. Town shall review the Draft WWTF Master Plan Report for any misrepresentations and inaccuracies prior to the Workshop No. 3 and discuss these items for correction in the meeting.
  - d. Town shall review the Final WWTF Master Plan Report for any misrepresentations and inaccuracies and report any thereof immediately to Dewberry for review.
  - e.

## **III. ADDITIONAL SERVICES**

Dewberry will furnish Additional Services for changes in this proposed Scope of Services or as requested by the Town and will provide an estimated fee for Additional Services. Dewberry will not perform Additional Services without prior written authorization from the Town. Additional Services not provided in this Scope of Services include, but are not limited to, the following:

- A. Items identified as Additional Services in each task under the Assumptions subsections in SECTION II – SCOPE OF WORK.
- B. Design, bidding, and construction-phase services.
- C. Geotechnical evaluation: The need for a geotechnical investigation or extent of a geotechnical investigation and associated design services are not included in the proposed scope of services.
- D. Assistance with the Town WWTF Colorado NPDES permitting processes and funding applications, funding contract development, and administrative services following funding contract execution.
- E. Permitting fees.
- F. Conducting archaeological/ historical/property surveys, site survey, survey specific to identifying the boundary of the 100-year and 500-year flood elevation and infiltration and inflow analysis.
- G. Request preparation for and evaluation of preliminary effluent limitations (PELs).
- H. Contacting industries for future growth and expansion plans, updating or developing treatment agreements with major contributing industries, and meetings with SIUs.
- I. A task that is not explicitly included is explicitly excluded.

#### IV. PRELIMINARY PROJECT SCHEDULE

Dewberry estimates completion of the proposed scope of services ~~within six months from the notice to proceed.~~ *including submission to the state by 6/30/22.*

1. The proposed project schedule was developed based on the Town providing the information delineated herein in a timely manner.
2. Dewberry is not responsible for time delays caused by circumstances beyond the control of Dewberry.



## V. ENGINEERING FEE

Dewberry proposes to complete the proposed Scope of Services described herein for the following estimated lump sum fee with a total of \$99,855:

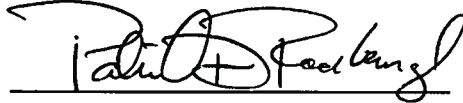
Task Description	Amount
Task 1: Project Management	\$ 9,055
Task 2: Project Document Review and Kick-off Meeting	\$ 19,147
Task 3: Basis of Evaluation	\$ 13,590
Task 4: Short-term Alternatives Evaluation	\$ 11,710
Task 5: Long-term Alternatives Evaluation	\$ 26,175
Task 6: Capital Improvement Plan Recommendations	\$ 4,260
Task 7: WWTF Master Plan	\$ 15,915
<b>Total</b>	<b>\$ 99,855</b>

## VI. AUTHORIZATION

This Agreement authorizes Dewberry to provide engineering services described in this proposal per the attached terms and conditions. Please contact me if you require any modifications to this Agreement or need any other assistance.

Dewberry Engineers Inc.

Signature:



Name: Patrick D. Radabaugh, PE

Title: Senior Associate

Date: February 1, 2022

Town of Silt

Signature:



Name: Jeff Layman

Title: Town Administrator

Date:

2/15/22

**ATTACHMENT B  
STANDARD TERMS AND CONDITIONS**

These Standard Terms and Conditions ("STCs") are incorporated by reference into the foregoing agreement or proposal, along with any future modifications or amendments thereto made in accordance with Paragraph 23 below (the "Agreement") between Dewberry ("we" or "us" or "our") and its client ("you" or "your") for the performance of services as defined in our proposal ("Services"). These STCs are fully binding upon you, just as if they were fully set forth in the body of the Agreement, and shall supersede any term or provision elsewhere in the Agreement in conflict with these STCs.

1. **Period of Offer.** Unless we decide, in writing, to extend the period for acceptance by you of our proposal, you have 90 days from our proposal date to accept our proposal. We have the right to withdraw the proposal at any time before you accept. Delivery of a signed proposal—whether original or copy—to us constitutes your acceptance of the proposal, including attachments expressly incorporated into the proposal by reference. The proposal and incorporated attachments shall constitute the entire Agreement between you and us. If you request us to render Services before you deliver a signed proposal to us, and we render Services in accordance with the proposal, you agree that the proposal and these STCs constitute the Agreement between you and us even if you fail to return a signed proposal to us.
2. **Scope of Services.** For the fee set forth in the Agreement, you agree that we shall only be obligated to render the Services expressly described in the Agreement. Our Services shall not be construed as providing legal, accounting, or insurance services. Unless the Agreement expressly requires, in no event do we have any obligation or responsibility for:
  - a. The correctness or completeness of any document which was prepared by another entity.
  - b. The correctness or completeness of any drawing prepared by us, unless it was properly signed and sealed by a registered professional on our behalf.
  - c. Favorable or timely comment or action by any governmental entity on the submission of any construction documents, land use or feasibility studies, appeals, petitions for exceptions or waivers, or other requests or documents of any nature whatsoever.
  - d. Taking into account off-site circumstances other than those clearly visible and actually known to us from on-site work.
  - e. The actual location (or characteristics) of any portion of a utility which is not entirely visible from the surface.
  - f. Site safety or construction quality, means, methods, or sequences.
  - g. The correctness of any geotechnical services performed by others, whether or not performed as our subcontractor.
  - h. The accuracy of earth work estimates and quantity take-offs, or the balance of earthwork cut and fill.
  - i. The accuracy of any opinions of construction cost, financial analyses, economic feasibility projections or schedules for the Project.

Should shop drawing review be incorporated into the Services, we shall pass on the shop drawings with reasonable promptness. Our review of shop drawings will be general, for conformance with the design concept of the Project to which this Agreement relates ("Project") and compliance with the information given in the construction documents, and will not include quantities, detailed dimensions, nor adjustments of dimensions to actual field conditions. Our review shall not be construed as permitting any departure from contract requirements nor as relieving your contractor of the sole and final responsibility for any error in details, dimensions or otherwise that may exist.

3. **Your Oral Decisions.** You, or any of your directors, officers, partners, members, managers, employees or agents having apparent authority from you, may orally: (a) make decisions relating to Services or the Agreement; (b) request a change in the scope of Services under the Agreement; or (c) request us to render additional Services under the Agreement, subject to our right to require you to submit the request in writing before your decision or request shall be considered to have been effectively made. You may, at any time, limit the authority of any or all persons to act orally on your behalf under this Paragraph 3, by giving us seven 7 days advance written notice.
4. **Proprietary Rights.** The drawings, specifications and other documents prepared by us under this Agreement are instruments of our service for use solely for the Project and, unless otherwise provided, we shall be deemed the author of these documents and shall retain all common law, statutory, and other reserved rights, including the copyright and rights to any Dewberry trademarks. Upon payment in full for our Services, you shall be permitted to retain copies, including reproducible copies of our instruments of service for information and reference for the Project. Our instruments of service shall not be used by you or others on other projects for any reason or for completion or modification of this Project by other professionals, unless you enter into a written agreement with us allowing for such use. Submission or distribution of documents to meet official regulatory requirements or for similar purposes in connection with the Project is not to be construed as publication inconsistent with our reserved rights. You shall defend, indemnify and hold us harmless, and release us, from any and all liability, loss, damages, claims and demands for loss, damages, property damages or bodily injury, arising out of any use (including, without limitation, the means or media of transfer, possession, use, or alteration) of our instruments of service by (i) you, if such use is inconsistent with our reserved rights or this Paragraph 4, or (ii) any third party, regardless of the manner of use, if such third party received our instruments of service directly or indirectly from you (including if we or others have transmitted such instruments of service to the third party at your request or direction, for your benefit, or, and without limiting the foregoing, pursuant to a contractual obligation that is directly or indirectly derived (or flowed down) from a contract to which you have privy).
5. **Fees and Compensation.** If you request us to render services not specifically described in the Agreement, or, if we or anyone in our employ, is called upon to be deposed or to testify in a matter in which we are not a named party, that relates to the Project, you agree to compensate us for such services in accordance with the hourly rates as set forth on Attachment A of this Agreement or in any subsequently effective schedule, unless otherwise agreed in writing. If no compensation rate is set forth on Attachment A, or through written agreement between you and us, we shall be compensated for such services at our then current hourly rates. We may unilaterally increase our lump sum or unit billing rates on each anniversary of your acceptance of this Agreement by as much as five percent or the percentage increase in the CPI-W (U.S. Department of Labor Consumer Price Index-Washington), whichever is greater. Hourly rates are subject to periodic revision at our discretion.
6. **Period of Service.** The provisions of this Agreement and the compensation provided for under the Agreement have been established in anticipation of the orderly and continuous progress of the Project. Our obligation to render the Services will extend only for that period which may reasonably be required to complete the Services in an orderly and continuous manner, and we may then, at our sole option, terminate the Agreement.
7. **Reimbursable Expenses.** Unless the Agreement otherwise provides, you shall reimburse us, or our affiliates, for all expenses we incur to render the Services for you under this Agreement, plus fifteen percent. We may submit invoices for reimbursable expenses separately from invoices for Services.
8. **Payment Terms.** We may submit invoices at any time to you for Services and for reimbursable expenses incurred. Invoices are payable within 30 days of the invoice date, and you agree to pay a finance charge of 1½% per month on any unpaid balance not received by us within 30 days of the invoice date. If you require payment via credit card, Dewberry will assess a 3% processing fee on the total amount invoiced. Invoices may be based either upon our estimate of the proportion of the total Services actually completed at the time of billing for lump sum or fixed fee services, or in the case of hourly services, upon rendering of the Services. If any invoice is not paid within 30 days of the invoice date, we shall have the right either to suspend the performance of our Services until all invoices more than 30 days past due are fully paid or to terminate the agreement and to initiate proceedings to recover amounts owed by you. Additionally, we shall have the right to withhold from you the possession or use of any drawings or documents prepared by us for you under this or any other agreement with you until all delinquent invoices are paid in full. You shall not offset payments of our invoices by any amounts due or claimed to be due for any reason. If you do not give us written notice disputing an invoice within 20 days of the invoice date, the invoice shall conclusively be deemed correct. All payments made by you should specify the invoice numbers being paid. If we receive payments that do not specify the invoices being paid, you agree that we may apply payments in our sole discretion. Time is of the essence of your payment obligations; and your failure to make full and timely payment shall be deemed a material breach.
9. **Information from You and Public Sources.** You shall furnish us all plans, drawings, surveys, deeds and other documents in your possession, or that come into your possession, which may be related to the Services, and shall inform us in writing about all special criteria or requirements related to the Services (together, "Information"). We may obtain deeds, plats, maps and any other information filed with or published by any governmental or quasi-governmental entity (together, "Public Information"). Unless we are engaged in writing as an additional service to independently verify such, we may rely upon Information and Public Information in rendering Services. We shall not be responsible for errors or omissions or additional costs arising out of our reliance on Information or Public Information. You agree to give prompt notice to us of any development or occurrence that affects the scope or timing of Services, or any defect in the final work submitted by us, or errors or omissions of others as they are discovered. We shall not be responsible for any adverse consequence arising in whole or in part from your failure to provide accurate or timely information, approvals and decisions, as required for the orderly progress of the Services.
10. **Plan Processing.** We may submit plans and related, or other, documents to public agencies for approval. However, it may be necessary, in order to serve your interests and needs, for us to perform special processing, such as attending meetings and conferences with different agencies, hand carrying plans or other documents from agency to agency, and other special services. These special services are not included in the basic fee and shall be performed as additional services on an hourly fee basis in accordance Paragraph 5 above.





- 11. Meetings and Conferences.** To the extent the Agreement provides, we will attend meetings and conferences that you, or your representatives, reasonably require. Furthermore, we will meet on an as-needed basis with public agencies that might be involved in the Project. Because we cannot forecast the scope and nature of these meetings and conferences, we will perform meeting and conference services on an hourly fee basis in accordance with our applicable hourly rate schedule.
- 12. Your Claims.** You release us from, and waive, all claims of any nature for any and all errors or omissions by us related to our performance under this Agreement, or in the performance of any supplementary services related to this Agreement, unless you have strictly complied with all of the following procedures for asserting a claim, as to which procedures time is of the essence:
- a. You shall give us written notice within 10 days of the date that you discover, or should, in the exercise of ordinary care, have discovered that you have, or may have, a claim against us. If you fail to give us written notice within such 10 days, then such claim shall forever be barred and extinguished.
  - b. If we accept the claim, we shall have a reasonable time to cure any error or omission and any damage. This shall be your sole remedy, and you must not have caused the error or omission, or any damage resulting from the error or omission, to be cured, if we are ready, willing and able to do so.
  - c. If we reject the claim, we shall give you written notice of our rejection within 30 days of our receipt of your notice of claim. You shall then have 60 days to give us an opinion from a recognized expert in the appropriate discipline, corroborating your claim that we committed an error or omission, and establishing that the error or omission arose from our failure to use the degree of care ordinarily used by professionals in that discipline in the jurisdiction local to the Project. If you fail to give us such an opinion from a recognized expert within 60 days from the date we send you notice of our rejection of the claim, then such claim shall forever be barred and extinguished.
  - d. We shall have 60 days from receipt of your expert's written opinion to reevaluate any claim asserted by you. If we again reject such claim, or if the 60-day period from receipt of the written opinion of your expert elapses without action by us, then you may have recourse to such other remedies as may be provided under this Agreement.
- 13. Hazardous or Toxic Wastes or Substances, Pollution or Contamination.** You acknowledge that Services rendered under this Agreement may be affected by hazardous or toxic wastes or substances, or pollution or contamination due to the presence of hazardous or toxic wastes or substances. To induce us to enter into this Agreement, you agree to indemnify, defend and hold us harmless from and against any and all liability, loss, damages, claims and demands for loss, damages, property damages or bodily injury, that relate, in any way, to both (a) hazardous or toxic wastes or substances, or pollution or contamination due to the presence of hazardous or toxic wastes or substances, and (b) the performance by us of our obligations under the Agreement, whether or not such performance by us is claimed to have been, or was, or may have been, negligent. Unless otherwise expressly set forth in this Agreement, we shall have no responsibility for searching for, or identifying, any hazardous or toxic wastes or substances, or pollution or contamination due to the presence of hazardous or toxic wastes or substances; but if we discover or suspect the presence of any such wastes, substances, pollution or contamination due to the presence of hazardous or toxic wastes or substances, then we, in our sole discretion, and at any time, may stop work under, or terminate, this Agreement, in which event we will have no further liability to you for performance under this Agreement, and you shall make the payments to us required by Paragraph 14 of the STCs.
- 14. Termination.** Either party may terminate the Agreement if the other party materially breaches the Agreement and does not cure the breach within 7 days after receiving notice of the breach from the non-breaching party. You shall immediately pay us for our Services rendered and expenses incurred through the termination date, including fees and expenses that we incur as a result of the termination.
- 15. Payment of Other Professionals.** If this Agreement includes continuation of services begun by other architects, engineers, planners, surveyors, or other professionals, we may suspend our Services until you make arrangements satisfactory to such other professionals for payment. If satisfactory arrangements have not been made within a time determined by us to be reasonable, then we may in our sole discretion terminate this Agreement.
- 16. Assignment and Third-Party Beneficiaries.** Neither party shall assign or transfer any rights, interests or claims arising under this Agreement without the written consent of the other, provided, however, that we are permitted to (i) employ independent consultants, associates, and subcontractors as we may deem necessary to render the Services, (ii) assign our right to receive compensation under this Agreement, and (iii) transfer the Agreement to an affiliate of ours, in our sole discretion, with written notice to you (an affiliate for purposes of this Paragraph 16 is defined as any other business entity that directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with, us). This Agreement does not confer any benefit or right upon any person or entity other than the parties, except that our partners, members, managers, directors, officers, employees, agents and subcontractors shall have and be entitled to the protection afforded us under Paragraphs 9, 12, 13, 16, 20 and 22 of this Agreement.
- 17. Applicable Law and Forum Selection.** The Commonwealth of Virginia's laws shall govern this Agreement in all respects, including matters of construction, validity, and performance. Except as provided in Paragraph 18, the parties agree that the courts of Fairfax County, Virginia, and the Federal District Court, Eastern District of Virginia, Alexandria Division, (together, "Courts") shall have exclusive jurisdiction over any controversy, including matters of construction, validity, and performance, arising out of this Agreement. The parties consent to the jurisdiction of the Courts and waive any objection either party might otherwise be entitled to assert regarding jurisdiction. The parties irrevocably waive all right to trial by jury in any action, proceeding, or counterclaim arising out of or related to this Agreement.
- 18. Arbitration of Our Claims for Compensation.** Instead of proceeding in court, we, in our sole and absolute discretion, may submit any claim for compensation due us under this Agreement to arbitration in Fairfax County, Virginia in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association, and judgment upon the arbitration award may be entered in any court having jurisdiction. You agree not to assert any counterclaim or any defense by way of set-off in such arbitration, and that the arbitrator or panel shall have no authority to consider, or to render, an award based upon any such counterclaim or defense by way of set-off. We shall have the right to withdraw our demand for arbitration at any time before the arbitration hearing starts by giving written notice to the arbitrator or panel and you; and upon the giving of such notice by us, the arbitration shall terminate, no award shall be rendered, and we may then pursue our remedies in accordance with Paragraph 17 above.
- 19. Severability.** If any part, term, or provision of this Agreement is held to be illegal or unenforceable, the validity and enforceability of the remaining parts, terms, and provisions of this Agreement shall not be affected, and each party's rights shall be construed and enforced as if the Agreement did not contain the illegal or unenforceable part, term, or provision.
- 20. Limitations on Liability.** In recognition of the relative risks and benefits of the Project to you and us, you agree, that our liability for any loss, damages, property damages or bodily injury of or to you caused in whole or in part by us in the performance of this Agreement or any supplementary services in any way related to this Agreement, shall be limited in the aggregate to the amount of fees that you have paid to us for the Services. The parties intend that the foregoing limitation on liability shall apply to all claims, whether sounding in tort, contract, warranty, or otherwise. You release, waive, and shall not seek contribution from, or indemnification by, us for any claims of any nature made against you by any other person who may suffer any loss, damages, property damages or bodily injury in any manner associated with our services, or any supplementary services in any way related to this Agreement. Notwithstanding anything to the contrary elsewhere in the Agreement, we shall not be liable to you, in any event or for any amount, for delays; or for consequential, special or incidental damages; or for punitive or exemplary damages; or for the cost to add an item or component that we omitted from the instruments of service due to our negligence, to the extent that item or component would have otherwise been necessary, or adds value or betterment, to the Project. Should you find the terms of this Paragraph 20 unacceptable, we are prepared to negotiate a modification in consideration of an equitable surcharge to pay our additional insurance premiums and risk.
- 21. Payment of Attorney's Fees.** The losing party shall pay the winning party's reasonable attorney's fees and expenses for the prosecution or defense of any cause of action, claim or demand arising under this Agreement in any court or in arbitration.
- 22. Indemnification.** You agree to indemnify, defend and hold us harmless from and against any and all liability, loss, damages, claims and demands for loss, damages, property damages or bodily injury, arising out of acts or omissions by you, or your contractor, subcontractor or other independent company or consultant employed by you to work on the Project, or their respective partners, members, managers, directors, officers, employees, agents or assigns; or arising out of any other operation, no matter by whom committed or omitted, for and on behalf of you, or such contractor, subcontractor or other independent company or consultant, whether or not due in part to errors or omissions by us in the performance of this Agreement, or in the performance of any supplementary service in any way related to this Agreement, provided that you are not required to indemnify and hold us harmless under this Paragraph 22 in the event of our sole negligence.
- 23. Integration Clause.** The Agreement represents the entire agreement of the parties. No prior representations, statements, or inducements made by either us, you, or the respective agents of either, that is not contained in the Agreement shall enlarge, modify, alter, or otherwise vary the written terms of the Agreement unless they are made in writing and made a part of the Agreement by attachment, incorporated by reference in the Agreement or signed or initialed on behalf of both parties.
- 24. Notice.** Any notices issued to us shall be sent to our project manager with a copy sent via email to [Notices@dewberry.com](mailto:Notices@dewberry.com) or mailed to 8401 Arlington Blvd, Fairfax VA 220131, Attn: Legal Department.

Town of Silt - WWTF Master Plan			PIC	QA/QC - Technical Advisor	Civil/Process			Admin	Expenses		
Total Fee \$99,855			Principal-in-Charge	Technical Advisor	Project Manager	Project Engineer	Designer	Admin	Mileage	Meals	ODCs
Total Effort			Billable Rate	\$300.00	\$220.00	\$205.00	\$150.00	\$125.00	\$110.00	\$0.55	-
<b>Task 1: Project Management</b>			Notes								
1.1	Project Setup and Internal Meeting	\$1,840.00	1		4	2		2			
1.2	Task 1-2	\$410.00			2						
1.3	Task 1-3	\$410.00			2						
1.4	Task 1-4	\$410.00			2						
1.5	Task 1-5	\$410.00			2						
1.6	Task 1-6	\$410.00			2						
1.7	Task 1-7	\$410.00			2						
1.8	Tracking and Invoices	\$1,435.00			7						
1.9	QA/QC	\$3,520.00		15							
Hours 24			1	15	23	2		2			
Fee \$9,855.00			\$100	\$3,520	\$4,715	\$500		\$410			
<b>Task 2: Project Document Review and Kick-off Meeting</b>			Notes								
2.1	Kick-off meeting	\$7,236.60	Prep. travel, attendance		12	12	12		360	\$135	
2.2	Field Site Visit Follow-up Meeting and Notes	\$1,655.00			2	3	4				
2.3	Wastewater data review (current)	\$2,935.00			1	3	14				
2.4	Planning documents review	\$2,635.00			1	3	12				
2.5	Permitting documents review	\$2,035.00			1	3	8				
2.6	Design plan documents review	\$2,650.00			2	2	12				
Hours 60				19	26	62					
Fee \$19,147.00				\$4,180	\$5,530	\$9,430			\$402	\$185	
<b>Task 3: Basis of Evaluation</b>			Notes								
3.1	CDPHE	\$0.00									
3.1.1	Regulation Review	\$2,020.00			4	8					
3.1.2	CDPHE coordination - Regulatory	\$1,010.00			2	4					
3.1.3	CDPHE coordination - Funding	\$1,010.00			2	4					
3.2	Projections	\$0.00									
3.2.1	Flows and Loads	\$3,820.00			4	20					
3.2.2	Population	\$1,610.00			2	8					
3.2.3	Land Use	\$1,610.00			2	8					
3.3	Discharge requirements	\$2,510.00			2	14					
Hours 34					18	55					
Fee \$6,950.00				30	\$2,530	\$3,420					
<b>Task 4: Short-term Alternatives Evaluation</b>			Notes								
4.1	Headworks	\$1,010.00			2	4					
4.2	Secondary	\$0.00									
4.2.1	BNR	\$1,420.00			4	4					
4.2.2	Secondary Clarification	\$1,010.00			2	4					
4.2.3	Disinfection	\$1,010.00			2	4					
4.2.4	Solids Processing and Handling	\$1,420.00			4	4					
4.3	Treatment matrix analysis and selection	\$1,830.00		1	2	8					



Town of Silt - WWTF Master Plan			PIC	QA/QC - Technical Advisor	Civil/Process			Admin	Expenses		
Total Fee \$99,855			Principal-in-Charge	Technical Advisor	Project Manager	Project Engineer	Designer	Admin	Mileage	Meals	ODCs
Total Effort	Billable Rate										
4.4	CADD figures	\$1,710.00			2	2	8				
4.5	Workshop No. 1	\$2,300.00	Prep and attendance	4	4	4					
Hours	29			5	22	34	8				
Fee	\$99,855.00			\$1,700	\$4,610	\$6,400	\$1,000				
Task 5: Long-term Alternatives Evaluation											
5.1	WWTF	\$0.00									
5.1.1	Headworks	\$1,310.00			2	6					
5.1.2	BNR	\$3,220.00			4	16					
5.1.3	Secondary Clarification	\$1,610.00			2	8					
5.1.4	Disinfection	\$1,610.00			2	8					
5.1.5	Solids Holding Tank	\$1,610.00			2	8					
5.1.6	Dewatering	\$2,210.00			2	12					
5.1.7	Tertiary Filtration (Phosphorus)	\$2,210.00			2	12					
5.1.8	Metals Removal	\$1,910.00			2	10					
5.2	Treatment matrix analysis and selection	\$1,910.00			2	10					
5.2.1	Cost Evaluation	\$0.00									
5.2.2	Capital	\$1,910.00			2	10					
5.2.3	O&M	\$1,910.00			2	10					
5.2.4	User Rate Impact	\$1,610.00			2	8					
5.3	Workshop No. 2	\$3,145.00	Prep and Attendance	3	7	7					
Hours	161			3	23	145					
Budget/Revenue	\$65,175.00		\$0	\$600	\$6,700	\$18,750		\$0			
Task 6: Capital Improvement Plan Recommendations											
6.1	Regulatory Timeline	\$2,130.00			1	2	10				
6.2	CIP Timeline	\$2,130.00			1	2	10				
		\$0.00									
Hours	28			2	4	20					
Budget/Revenue	\$1,260.00		\$0	\$400	\$820	\$3,600		\$0			
Task 7: WWTF Master Plan Report											
7.1	WWTF MP Report	\$0.00									
7.2	Draft	\$7,940.00			8	32	12				
7.2.1	Workshop No. 3	\$3,145.00			3	7	7				
7.2.2	Draft Update with Comments	\$3,220.00			4	16					
7.2.3	Final	\$1,610.00			2	8					
Hours	53			3	21	63	12				
Budget/Revenue	\$15,915.00		\$0	\$600	\$4,300	\$9,450	\$3,600.00	\$0			

Total Hours	1	48	147	372	20	2					
Fee	\$300	\$10,560	\$30,135	\$65,000	\$2,500	\$220	\$202	\$136	\$0		

Dewberry Fee Breakdown

Town of Silt  
WWTF Master Plan

2/1/2022





# Town of Silt Water and Wastewater Update

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June 22, 2022

# Presentation Agenda

- Projections - Planning and Design Criteria
- Regulatory Review
- Water Treatment Plant Evaluation
- Water Treatment Plant Alternatives Discussion
- Wastewater Treatment Plant Evaluation
- Wastewater Treatment Plant Alternatives Discussion
- Conclusions and Recommendations

# Demand Projections

- Water – 85 gpd/capita with peak day of approximately 150 gpd/capita
- Ratio of AAD to PD is low compared to many other municipalities
- Assumes continued raw water irrigation and limited use of potable water for irrigation
- Recommend capacity of 2 mgd now with room to expand to 3 mgd

TOTAL			
YEAR	POPULATION	AAD, GPD	PEAK DAY, GPD
Current	3,600	300,000	480,000
2027	4,567	388,200	698,800
2032	5,484	466,100	839,000
2037	6,584	559,600	1,007,300
2042	7,904	671,900	1,209,300

# Wastewater Flow/Load Projections

PARAMETER	YEAR 2027			YEAR 2037			YEAR 2042		
	AA	MM	PH	AA	MM	PH	AA	MM	PH
Flow, MGD	0.31	0.34	0.96	0.44	0.49	1.36	0.53	0.59	1.64
BOD5, ppd	913	1,334		1,317	1,922		1,581	2,308	
TSS, ppd	731	950		877	1,140		1,265	1,644	
NH3-N, ppd	100	147		145	211		174	254	

- Wastewater – 0.2 lbs BOD5/capita and 67 gpd/capita.
- MMPF = 1.1 for Flow and 1.45 for BOD<sub>5</sub>

# Water Regulatory Review

- LT2 – Membrane WTPs not required to sample for TOC removal.
- DBP formation potential is a function of TOC and chlorine. Improving TOC removal decreases DBP formation potential.
- New DBP rule in development. Not likely until late 2020s.
- PFAS monitoring (not required due to size)
  - First surface WTP downstream of Grizzly Creek Fire
- TENORM in residuals (not required until disposal)
- Secondary standards for iron and manganese (T&O)



# Wastewater Regulatory Review

- Regulation 85
  - Technology based effluent nutrient limits - not applicable because facility is less than 1 MGD.
- Regulation 31
  - Water quality based stream standards
  - WQCC has stated they want the WQCD to write these into discharge permits starting in 2027

WATER BODY	TOTAL PHOSPHORUS, MG/L <sup>A</sup>	TOTAL NITROGEN AS N, MG/L <sup>A,B</sup>	CHLOROPHYLL-A, MG/M <sup>2</sup> <sup>C</sup>
Rivers and Streams – cold	0.11	1.25	150

# WTP Evaluation

- In 100 year flood plain. All tanks and equipment need to be above established flood elevation.
- Raw water flow measurement and control
- Pretreatment
  - Good coagulant.
  - Insufficient flocculation time. Reduces performance of plate settler.
  - Coagulant dosing control is limited
  - No TOC removal (e.g. DBP formation potential) monitoring
  - Need an Fe/Mn treatment option and to reduce sequestering agent

# WTP Evaluation

- Membranes
  - True WTP capacity (both skids) is only 0.6 million gallons per day (mgd) and NOT 1.0 mgd
    - Average capacity per skid – 265 gpm (0.38 mgd)
    - Peak capacity per skid – 350 gpm (0.5 mgd)
  - Influent turbidity is higher than design criteria of 1 NTU
- Maintenance
  - Backwashing
  - Maintenance clean performed daily.
  - CIPs not performed. No heater and insufficient time (6 hrs required)
  - Pinning performed when required. Requires additional staff and takes 1 unit out of service

# WTP Evaluation

- Disinfection
  - Tablet system works but seems to produce inconsistent dosage.
  - Which could lead to increased DBP formation potential
  - Contact basin
    - One basin
    - Sufficient for 4 log virus removal/inactivation at projected future capacity
    - Insufficient for 0.5 log giardia inactivation at current and projected capacity.
      - Only required if change from membranes to conventional
- Finished water pumping
  - Will need to be expanded

# WTP Short Term Alternatives Discussion

- Raw water pumping
  - Upgrade controls (flow monitoring and pacing to rest of process)
- Strainer
  - Could replace strainer with new one with better removal
- Pretreatment (Goal to reduce turbidity to membranes)
  - Will likely improve membrane life, but will NOT increase capacity.
  - Floc tank?
  - Utilize pond across river
  - Expansion of well field outside existing Town property
- Disinfection – switch to hypochlorite and/or chloramines



# WTP Long Term Alternatives Discussion

- Pretreatment Upgrades
  - Process to handle wide range in turbidity
  - DAF (needs < 10 NTU feed turbidity)
  - Conventional floc/sed with plate settlers
  - Coagulation with Upflow clarifiers
  - Actiflo/Ballasted flocculation
  - Green sand, Chlorine Dioxide, or Ozone (T&O and Fe/Mn)
- Filtration
  - Pressure membranes (with FIRM AD capacity of 1.2 MGD)
  - Conventional mixed media filters (with firm AD capacity of 1.2 MGD)

# WTP Short Term Alternatives

- Improved pretreatment
  - Strainer
  - Coagulation/flocculation/sedimentation
- Filtration
  - Mixed Media
  - Membranes
- Additional
  - Fe/Mn removal (green sand in the mixed media)
  - Ozone or aeration for membranes
  - UV disinfection for mixed media filters
  - Water Tank

# WTP Long Term Alternatives

- Increase in capacity to accommodate growth or increases in peak day demands
  - Pretreatment
  - Filtration

# WTP Alternatives

- Alternative 1 – Solids Contact Clarifier with Mixed Media Filtration
- Alternative 2 – Plate Settlers with Filtration
- Alternative 3 – Conventional Package WTP
- Alternative 4 – Ballasted Flocculation with Mixed Media Filtration

# Alt 1 Site Plan Solid Contact Clarifier with Mixed Media Filtration



**ALTERNATIVE 1 – CLARICONE WITH MIXED MEDIA FILTRATION**



# Alt 2 Site Plan Plate Settlers with Filtration



ALTERNATIVE 2 – PLATE SETTLERS WITH FILTRATION OPTIONS



# Alt 3 Site Plan Conventional Package WTP



ALTERNATIVE 3 – PULSAPAK SYSTEM



# Alt 4 Site Plan Ballasted Flocculation with Mixed Media Filtration



ALTERNATIVE 4 – ACTIFLO WITH MIXED MEDIA FILTRATION

# Summary of Process Improvements

UNIT PROCESS	ALT 1. SOLIDS CONTACT CLARIFIER WITH MM FILTRATION	ALT 2. PLATE SETTLERS WITH FILTRATION	ALT 3. PULSAPAK (CONVENTIONAL PACKAGE SYSTEM)	ALT. 4 BALLASTED FLOCCULATION WITH MIXED MEDIA FILTRATION
Strainer	Included	Included	Included	Included
Coag/Floc/Sec	Occurs in one solids contact clarifier. Can accommodate	Separate Floc/coag with plate settlers	Package floc/coag/sed system	Utilizes polymer and sand to improve settling.
Filtration	Mixed Media with Fe/Mn removal	(a) Mixed Media with Fe/Mn removal (b) Membranes	Mixed Media with Fe/Mn removal	Mixed Media with Fe/Mn removal Ballasted floc cannot be utilized with membranes
Disinfection	Needs UV and Cl	MM needs UV and Cl. Membranes – Cl only	Needs UV and Cl	Needs UV and Cl
Residuals	Pond with periodic dredging/cleaning	Pond with periodic dredging/cleaning	Pond with periodic dredging/cleaning	Pond with periodic dredging/cleaning

# Summary of WTP Costs

ALTERNATIVE	PROBABLE OPINION OF CONSTRUCTION COST, \$ MILLION	OPINION OF TOTAL PROJECT COST, \$ MILLION
Alt 1 – Solids Contact Clarifier with Mixed Media Filtration	\$22.7	\$27.2
Alt 2a – Plate Settlers with Mixed Media Filtration	\$21.2	\$25.5
Alt 2b – Plate Settlers with Mixed Membrane Filtration	\$18.6	\$22.3
Alt 3 – Package Media Filtration	\$22.6	\$27.1
Alt 4 – Ballasted Flocculation with Mixed Media Filtration	\$25.1	\$30.2
New Additional 0.5 MG Water Storage Tank	\$2.2	\$2.6



# Summary of WTP Annual Costs

ALTERNATIVE	QTY	ANNUAL COST
Staffing	3	\$267k
Coagulant	125 gal/day	\$82k
Disinfection Chemical	75 gal/day	\$228k
Power	125 hp	\$82k
Residuals	Cleaning out pond once every 1-5 years	\$75k
Equipment/Structure O&M		\$85k
Total		\$819k

# WTP Alternatives Matrix

CRITERIA	ALT 1 – SOLIDS CONTACT CLARIFIER WITH MM FILTRATION	ALT 2- PLATE SETTLERS WITH FILTRATION	ALT 3 – PACKAGE CONVENTIONAL WTP	ALT 4 – BALLASTED FLOC WITH MM FILTRATION
Able to meet projected 20 year flow and load projections	Yes	Yes	Yes	Yes
Chemicals required	Higher chemical use	Higher chemical use	Higher chemical use	Highest chemical use
Redundancy	AD – one train PD – both trains	AD – one train PD – both trains	AD – one train PD – both trains	AD – one train PD – both trains
Expansion Capability	Significant	Moderate	Moderate	Moderate
Ease of Operations	More complex	Similar to existing	Similar to existing	More complex
Can accommodate wide range in turbidity	Great	Good	Good	Great
Energy Use	Moderate	Moderate	Moderate	Moderate

# WWTP Evaluation

- In 100 year flood plain with no established flood elevation. All tanks and equipment need to be the flood elevation. Use the upstream elevation?
- Headworks
  - HVAC and NFPA 820
  - Screening – may want to put manual screen in bypass channel
  - All equipment seems to have capacity to meet projected future PHF
- Secondary Process/Digestion
  - Sufficient capacity, but can't meet Reg 31 requirements without upgrades

# WWTP Evaluation

- Disinfection
  - Sufficient capacity to meet future PHF
- Dewatering
  - Nearing end of useful life.
  - May want to upgrade to system with improved performance
  - Polymer dosing control upgrades needed.
- Hydraulic Profile
  - Going to be an issue with upgrades
- Discharge
  - Need to respond to CDPHE. Discharge is in floodplain

# WWTP Short Term Alternatives Discussion

- Headworks screening and HVAC
- Dewatering
- Extension of Outfall

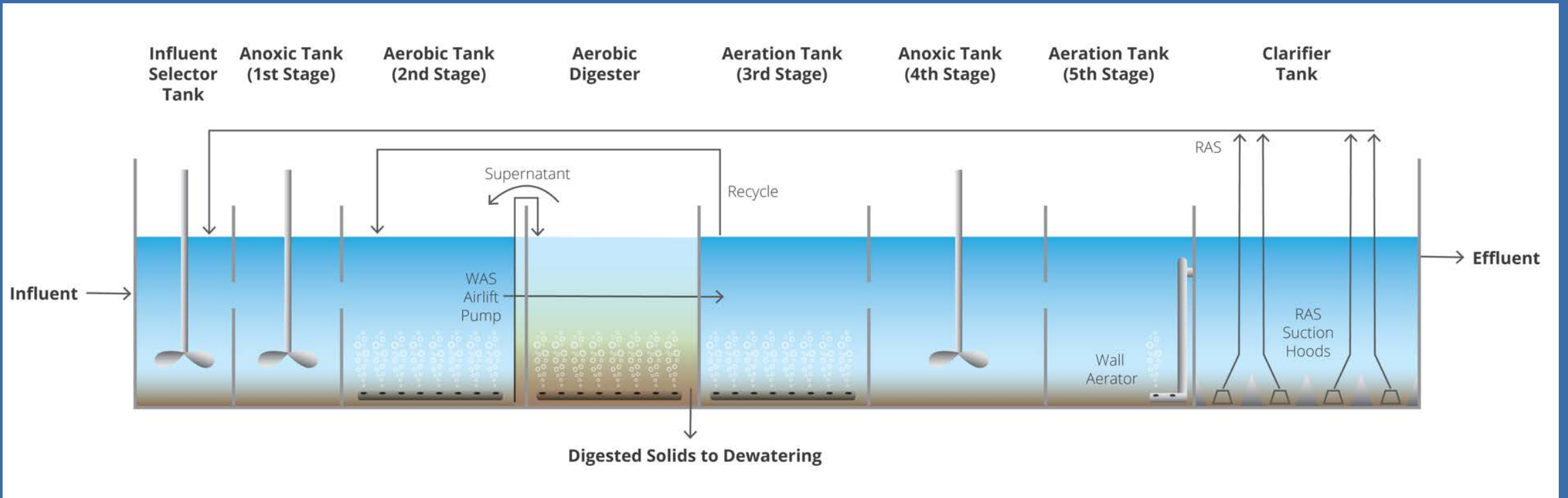


# WWTP Long Term Alternatives - 2027

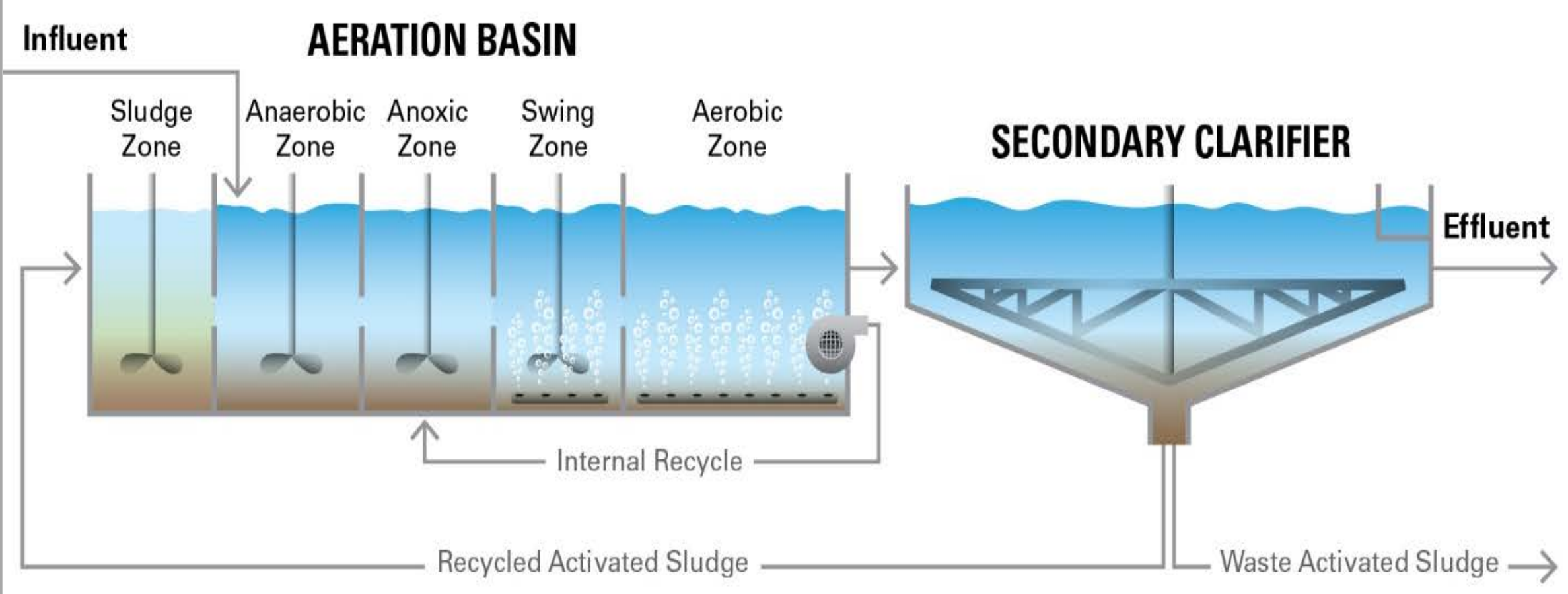
- Secondary Process
  - Expand Aeromod with tertiary N removal and filtration
  - Johannesburg with tertiary N removal and filtration
- Disinfection
  - New UV?
  - Chlorine?
- Digestion
  - Aerobic
  - ATAD

# Wastewater Alternatives

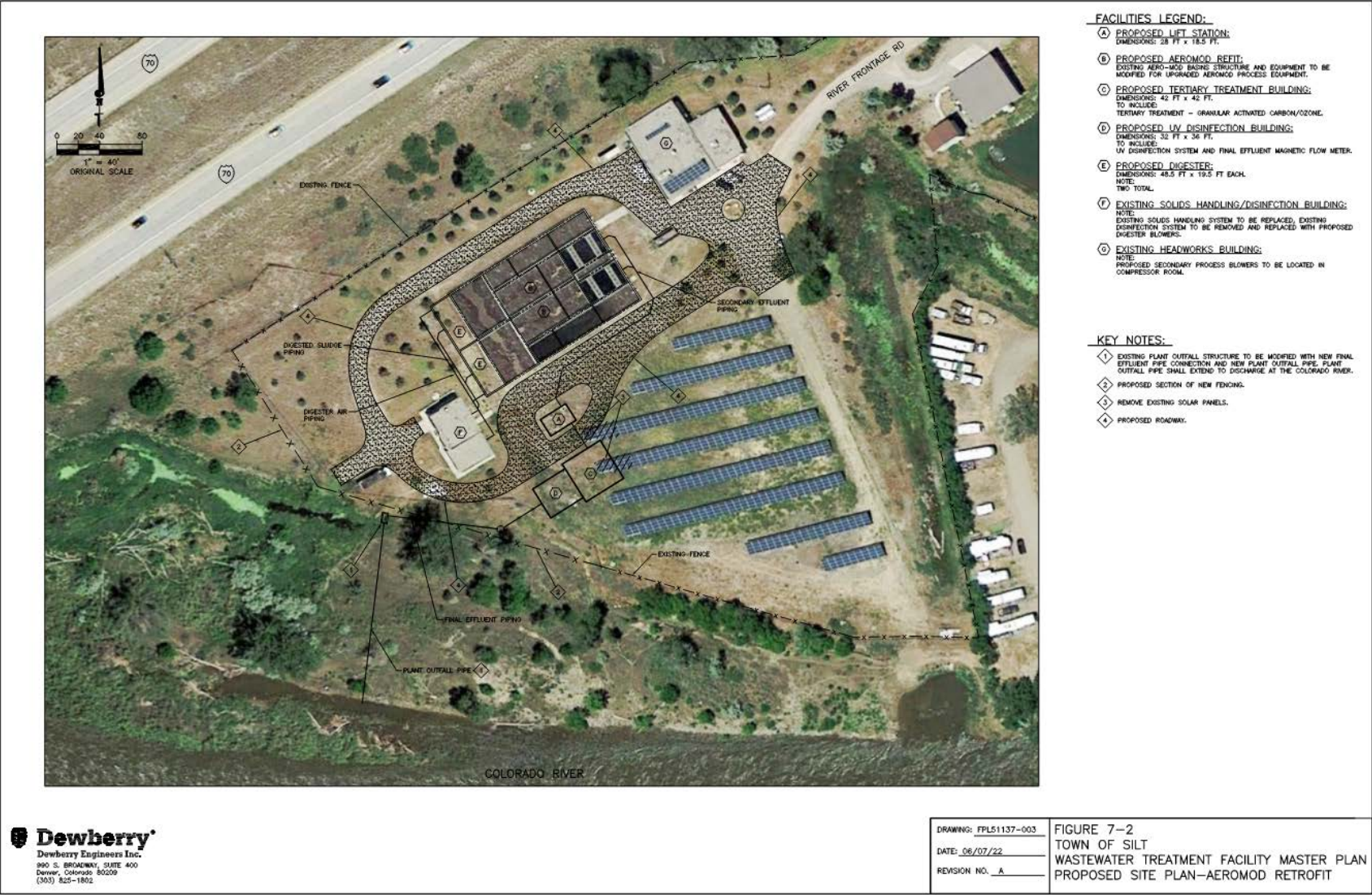
- Expanding Aeromod



# Wastewater Alternatives

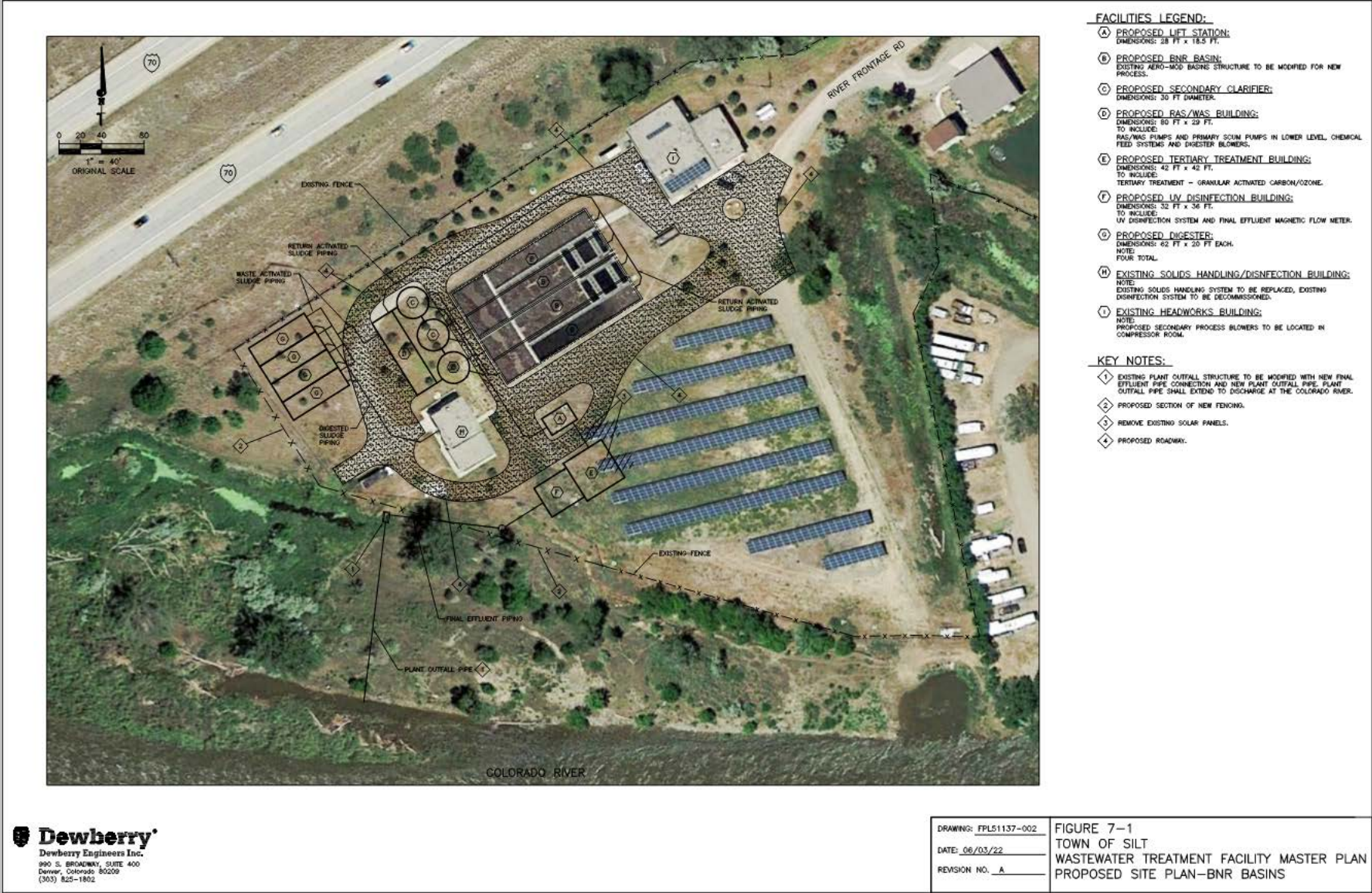


# Aeromod Site Plan





# Johannesburg Site Plan





# Summary of Process Improvements

UNIT PROCESS	AEROMOD	JOHANNESBURG
Outfall Extension	Outfall to be extended into Colorado River	Outfall to be extended into Colorado River
Sludge Handling Improvements	New dewatering equipment	New dewatering equipment
Site Civil	Paving, grading, stormwater, etc.	Paving, grading, stormwater, etc
Secondary Process	Upgrade Aero-Mod with fixed film. Additional digesters added. Aeration blowers in HW building.	Retrofit Aero-Mod concrete basins to a RAS Denitrification zone, anaerobic zones, anoxic zones, a swing zone, and aerobic zones. Digesters and clarifiers added. Aeration blowers in HW building.
Process Building	N/A	RAS/WAS pumps, primary scum pumps in lower level, chemical feed system and digester blowers
Lift Station	New lift station	New lift station
Tertiary Treatment Building	Ozone and GAC	Ozone and GAC
Disinfection	New UV system	New UV system

# Summary of Total WW Costs

UNIT PROCESS	AEROMOD	JOHANNESBURG
Outfall Extension	\$203,000	\$203,000
Sludge Handling Improvements	\$1,490,000	\$1,490,000
Site Civil	\$2,052,000	\$2,271,000
Secondary Process	\$8,515,000	\$21,242,000
Process Building	-	\$8,557,000
Lift Station	\$2,139,000	\$2,139,000
Tertiary Treatment Building	\$13,083,000	\$13,083,000
Disinfection	\$2,913,000	\$2,913,000
Total Opinion of Probable Construction Cost	\$30,395,000	\$51,898,000
Total Project Cost	\$36,475,000	\$62,278,000
Net Present Value	\$74,311,000	\$108,485,000

# Summary of Short-Term WW Costs

UNIT PROCESS	AEROMOD	JOHANNESBURG
Outfall Extension	\$203,000	\$203,000
Sludge Handling Improvements	\$1,490,000	\$1,490,000
Total Opinion of Probable Construction Cost	\$1,693,000	\$1,693,000
Total Project Cost	\$2,031,000	\$2,031,000

# Summary of Long-Term WW Costs

UNIT PROCESS	AEROMOD	JOHANNESBURG
Site Civil	\$2,052,000	\$2,271,000
Secondary Process	\$8,515,000	\$21,242,000
Process Building	-	\$8,557,000
Lift Station	\$2,139,000	\$2,139,000
Tertiary Treatment Building	\$13,083,000	\$13,083,000
Disinfection	\$2,913,000	\$2,913,000
Total Opinion of Probable Construction Cost	\$28,702,000	\$50,205,000
Total Project Cost	\$34,442,000	\$60,246,000
Average O&M	\$957,000	\$965,000
Net Present Value (does not include any estimate of future expansion cost)	\$74.3m	\$108.5m

# Wastewater Alternatives Matrix

CRITERIA	AEROMOD	JOHANNESBURG
Able to meet projected 20 year flow and load projections	Yes	Yes
Able to meet Reg 31	Yes	Yes
Chemicals required	Higher chemical use	Lower chemical use
Redundancy	Would require all trains in operation to meet projected 20 year flows/loads	Could meet 20 year flows and loads with one train out of service.
Expansion Capability	Would require significant infrastructure	Can increase capacity ~100 percent
Ease of Operations	Likely same as current	New process
Energy Use	Higher	Lower
Construction Feasibility	Feasible at current projected schedule; however, would be less feasible as get closer to plant capacity in the future.	Feasible at current projected schedule; however, would be less feasible as get closer to plant capacity in the future.



# WWTP Conclusions and Recommendations

- WWTP is in a good spot; it has capacity and meets current regulatory requirements.
- Recommended WWTP Improvements can be performed in two phases
  - 1<sup>st</sup> Phase – Dewatering improvements can be performed anytime in next 5 years.
  - 2<sup>nd</sup> Phase – Completed prior to Reg 31 requirements (2032 at latest)

# WTP Conclusions and Recommendations

- WTP is NOT in a good spot; it is operating at capacity.
- Recommended WTP Improvements can be performed in two phases
  - 1<sup>st</sup> Phase – Capacity and pretreatment improvements needed now
  - 2<sup>nd</sup> Phase – Additional capacity (if required) to improve resiliency or increase redundancy.
- Expanding well field or use of forebay pond would likely reduce impacts of turbidity on operations.

# Questions?

Patrick Radabaugh, PE

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- Tel: 303.951.0642

Kyria Bosma, PE

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November 7, 2022

Town of Silt  
Attn: Jeff Layman, Town Manager  
231 N. 7th Street  
PO Box 70  
Silt, Colorado 81652

RE: Town of Silt – Contract Amendment Town of Silt WTP Design Engineering Services

Dear Mr Layman,

Dewberry is pleased to submit this Contract Amendment to the Water Treatment Plant (WTP) Facility Plan for the design of improvements necessitated at the Town of Silt WTP to replace the existing infrastructure, incorporate a new coagulation/ballasted flocculation/sedimentation process, treatment iron/manganese, improve resiliency, and accommodate projected 20 year population growth. This letter amendment includes the following:

- Project Understanding
- Scope of Work
- Preliminary Project Schedule
- Engineering Fee
- Detailed Cost Breakdown (attached)

## PROJECT UNDERSTANDING

Our scope of work includes the improvements and assumptions listed below (summarized from WTP Facility Plan). The projected 20 year peak day demand for the Town of Silt is 1.2 million gallons per day (mgd). To accommodate that with a level of resiliency, the new WTP will include 2 modular 1 mgd treatment trains and will be easily expandable to 3 trains. The WTP will be designed to be modular in nature with each treatment train having a capacity of 1 mgd. Additionally, a 0.5 million gallon bolted steel water tank will be designed on the Town's existing tank site. The project will be delivered via alternative delivery (e.g. Construction Manager at Risk-CMaR) and all cost estimating, constructability reviews, and development of anticipated construction schedules will be performed by the CMaR Contractor. This scope of our design work includes the following:

- Site civil including grading, paving, storm water control, utility design, piping, and irrigation system modifications.
- Raw water pumping modifications (new pump and controls)
- New ballasted coagulation/flocculation/sedimentation system with a capacity of 2 mgd designed to accommodate the expected wide range in raw water turbidity from the Colorado River.

- New mixed media filtration system that also removes iron/manganese.
- Incorporation of new UV disinfection system
- Modification of existing chlorine disinfection system to meet regulatory requirements
- New finished water distribution system pump(s)
- Modification of the existing building
  - New NaOCl storage and delivery system
  - New Alum storage and delivery system
  - New sodium bicarbonate storage and delivery system
- Two new buildings (potentially both new processes in one building) to house the new processes
- All electrical and control system infrastructure will strive for energy efficiency. All motors will be premium efficient.
- SCADA system design.
- Public awareness campaign (with extended project team – rate study, Town of Silt, Tony, EA)
- Design of onsite stormwater system modifications.
- New emergency generator for WTP
- New 0.5 million gallon bolted steel water storage tank

## SCOPE OF WORK

### Task 1 - Project Management and Coordination

**Task 1.1 - Project Management.** Plan and coordinate engineering activities, assign and supervise project staff, monitor budgets, administer subcontracts, preparation of monthly invoices, and status reports. Maintain projects files with calculations, correspondence, technical memoranda, and other pertinent documents. Coordinate with CDPHE/Water and Power Authority regarding SRF funding.

**Task 1.2 - Project Coordination.** Conduct biweekly progress meetings (remote) during the design with Town Staff and conduct four onsite workshops meetings with Town of Silt staff during the preliminary, 30, 60, and 90 percent design levels. Prepare meeting agenda and minutes. Conduct meeting with Town Building Department in person. Conduct up to 3 public open houses during design to educate public about project and costs.

**Task 1.3 - QA/QC.** Develop quality assurance program and conduct quality control reviews on all project deliverables. QA/QC reviews are conducted by senior engineering staff. Perform coordination checks at the 30, 60, and 90 percent levels.

### Task 2 - Site Investigation

Conduct a site survey to current surveying standards including utility locates showing 1 ft contours. Drill up to 10 borings (8 at WTP and 2 at water tank site) onsite to a depth of 10 ft below bottom of structures (20-30 feet below ground surface). If drilling is not possible, dig pits as required to conduct geotechnical investigation. Conduct testing to determine soil classification, swell/compression, strength, water soluble sulfates, pH, and other properties. Provide earthquake spectral response acceleration parameters. Make foundation and paving recommendations. Summarize findings and recommendations in report. Conduct a site survey and incorporate information into existing survey; specifically, utility locates and hydraulic control points such as manholes, weirs, and pipe inverts.

### **Task 3 - Predesign Engineering Services**

**Task 3.1 – Environmental Assessment (EA).** Conduct an environmental assessment per CDPHE requirements including communications with the consulting agencies including but not limited to State Historical Preservation Office (SHPO) and US Fish and Wildlife. Prepare DRAFT EA report. Present preliminary findings at public meeting for SRF funding. Finalize report and submit to CDPHE.

**Task 3.2 – Rate Study Coordination.** Coordinate with Rate Study consultant. This includes up to four meetings (max 1 hr each) to discuss project costs and impacts on rate payers. Incorporate information into public meeting for PNA.

**Task 3.3 – Project Standards Report.** Report will document major design decisions early in the project and give direction to the project team during the design. Documenting major design decisions early in the process reduces design schedule and cost overruns by reducing the potential to revisit major design decisions that can drastically alter the project. Summarize unit process design criteria, any modifications to building sizes and location, survey, required permits, and site geotechnical information in a Project Standards Design Report. Conduct meeting with Town Planning Department to set building construction type and applicable building codes. Submit to Town Staff for review and comment. Incorporate Town Staff comments and finalize report.

### **Task 4 - 30 Percent Design**

**Task 4.1 - 30 Percent Design.** Develop design criteria and sizing of process units and equipment for each water treatment process. Document design concepts on process diagrams including type, size, capacity, and power requirements of equipment comprising each major system. Prepare 30 percent drawings and a list of specifications improvements. Drawings prepared at the 30 percent level include piping and instrumentation drawings, preliminary hydraulic profile, equipment plan views, and electrical one line diagrams. Prepare list of specifications. Identify necessary permits. Submit cost of all regulatory permitting costs.

**Task 4.2 – Basis of Design Report (BDR).** Prepare Basis of Design Report as required by CDPHE. Submit DRAFT copy of report to Town Staff for review and comment. Incorporate comments and prepare final BDR. Submit to CDPHE for review and comments. Incorporate CDPHE comments and finalize BDR. Update Record of Approved Waterworks for Town.



**Task 4.3 - 30 Percent Design Workshop.** Submit drawings and preliminary specification list to Town Staff one week prior to meeting for review. Conduct half day meeting with Town Staff to discuss the 30 percent documents, unit process design criteria, update project progress, and the project schedule. Present P&IDs and discuss control strategies for unit processes.

**Task 4.4 – CMAr SOQ Preparation and Selection.** Prepare DRAFT Request for Qualifications for CMAr. CMAr RFQ shall incorporate new guidance from the Design Build Institute of America (DBIA) guidance and desired items from Town. Submit to Town of Silt for review and comment. Publish RFQ (with 15 percent drawings, specification TOC, and Project Standards Report) with select group of contractors (up to 5). Respond to comments from contractors and prepare addendum. Receive SOQs and work with Town to review SOQs to select a CMAr. Prepare letter of recommendation.

## **Task 5 - 60 Percent Design**

**Task 5.1 - 60 Percent Design.** Incorporate 30 percent design comments and CDPHE BDR comments into design documents. Develop design drawings and specifications to the 60 percent level including piping and instrumentation diagrams (P&IDs), site civil (including grading and stormwater), erosion control, structural, architectural, mechanical, electrical, and instrumentation (including SCADA system upgrades). Prepare preliminary process control strategies. Prepare DRAFT site drainage report. Submit to Town Staff for review and comment.

**Task 5.2 - 60 Percent Design Workshop.** Submit drawings and preliminary specification list to Town Staff one week prior to meeting for review. Conduct half day workshop with Town Staff. Discuss design progress, alternative design approaches, comments from CDPHE regarding the PDR, and any issues uncovered during design. Present preliminary discussions with Town Planning Department. Discuss preliminary site grading, stormwater, and SCADA requirements with Town Staff. Coordinate with CMAr on construction schedule and equipment procurement.

## **Task 6 - 90 Percent Design**

**Task 6.1 - 90 Percent Design.** Incorporate 60 percent design comments into design documents and submit to CDPHE for review. Develop design drawings and specifications to the 90 percent level.

**Task 6.2 - 90 Percent Design Workshop.** Submit drawings and specifications to Town Staff one week prior to meeting for review. Conduct half day workshop with Town Staff. Present and discuss the 90 percent design documents. Discuss Town specification requirements, project progress, and upcoming permitting submittals/schedule. Coordinate with CMAr on construction schedule and equipment procurement.

## **Task 7 - Final Design**

**Task 7.1 - Final Design.** Incorporate 90 percent design comments into design documents. Develop design drawings and specifications to the 100 percent level. Update opinion of probable construction cost.

**Task 7.2 – Town Approvals.** Work with CMaR to submit required documentation to any required permitting agencies including Stormwater and Building Departments. Prepare and submit required documentation.

**Task 7.3 - Final Design Workshop.** Submit drawings and specifications list to Town Staff one week prior to meeting. Present final design documents to Town Staff and discuss details of the design. Provide Owner with copies of final documents in paper and electronic format.

**Task 7.4 – CDPHE Coordination.** Submit drawings and specifications list to Town Staff one week prior to meeting. Present final design documents to Town Staff and discuss details of the design. Provide Owner with copies of final documents in paper and electronic format.

## PRELIMINARY PROJECT SCHEDULE

Our preliminary project schedule is provided in Table 1 below and may be adjusted to accommodate client or pressing project needs.

**Table 1 - Preliminary Project Schedule**

<b>Project Phase/Task</b>	<b>Preliminary Completion Date - Duration</b>
Project Kickoff	November 2022
Site Investigation	January 2023
Project Standards Report (DRAFT)	January 2023
15 Percent Design	Early January 2023
CMaR RFQ	January 2023
30 Percent Design Workshop	Late January 2023
30 Percent Design	Early February 2023
CMaR Selection	Mid February 2023
GMP	Mid March 2023
60 Percent Design Workshop	Early July 2023
60 Percent Design	Mid July 2023
90 Percent Design Workshop	Early September 2023
90 Percent Design	Mid September
100 Design Workshop	Early November 2023

## SERVICES NOT INCLUDED

The Scope of Engineering Services and Fees do not include the following services. They may be added via amendment.

- Preparation of a Corps of Engineers 404 Permit. Any necessary 1041 permitting is also excluded.

- Basis of design, contract drawing, planning department review, and Permit fees. Fees for permits, review, or other applications will be paid by the Town of Silt.
- Any additional EA services required by the consulting agencies (e.g. SHPO or Fish and Wildlife)
- Modifications to the Operator Occupied Area at the WTP
- Cost estimating, constructability reviews, and construction scheduling services. These services will be performed by the CMAr with input from Dewberry.
- Construction Phase engineering services.

## ENGINEERING FEE

Our fee to perform the services above is provided in Table 2. A detailed breakdown of the level of effort by task is provided in the Attached Detailed Fee Schedule.

**Table 2 - Engineering Fee**

<b>Project Phase</b>	<b>Cost, \$</b>
Task 1 – Project Management and Coordination	302,900
Task 2 – Site Investigation	61,240
Task 3 – PreDesign	71,380
Task 4 – 30 Percent Design	291,040
Task 5 – 60 Percent Design	444,660
Task 6 – 90 Percent Design	409,180
Task 7 – Final Design	280,640
<b>Total</b>	<b>1,861,040</b>

Following are our hourly billing rates and reimbursable expenses; Tables 3 and 4, respectively.

**Table 3 - Hourly Billing Rates**

<b>Personnel Category</b>	<b>Staff</b>	<b>Hourly Billing Rate, \$</b>
Principal/Engineer 9	Aaron Nelson/Todd Shafer	280
Engineer VII	Patrick Radabaugh/Brian Daw	240
Engineer VI	Chad Weaver/Melinda Brown	215
Sr. Structural Engineer	Mark Maloney/Mike Pugh	280
Jr. Structural Engineer	Max Hardy	185
Electrical Engineer	Matt Fergen	200
Jr. Electrical Engineer	Steve Blucher	170
Engineer V, PM	Sam Franzen	185
Engineer IV	Kyria Bosma	165
Engineer III	Sarah Vander Meulen, Sage Springer	150
Engineer II	Seth Widner, Steven Jones, Missah Truscott	130

**Table 3 - Hourly Billing Rates**

<b>Personnel Category</b>	<b>Staff</b>	<b>Hourly Billing Rate, \$</b>
Sr CAD Designer	Rich Parks, Jeff Andersen	170
CAD Designer	Nate Morrill	135
CAD Technician	Angel Jimenez	110
Administrative	Karen Hensley	140
Resident Engineer	Jason Pacheco	230

**Table 4 - Reimbursable Expenses**

<b>Project Phase</b>	<b>Rate</b>
Auto Mileage	Approved IRS Rate
Per Diem Lodging	Approved GSA Rate
Per Diem Meals/Incidentals	Approved GSA Rate
Subconsultants	10% markup
Project related printing, couriering, mailing with external vendors, parking fees and tolls	At Cost
Computer time, faxing, in-house printing, supplies	No Charge

## AUTHORIZATION

This Letter Amendment authorizes Dewberry to amend the WTP Facility Plan contract to provide the WTP design engineering services described in this letter amendment. Please contact me if you require any modifications to this Agreement or need any other assistance.

Dewberry Engineers Inc.

Town of Silt

Signature:

Signature:

Name: Aaron Nelson, PE

Name: Jeff Layman

Title: Vice President

Title: Town Manager

Date: November 7 2022

Date:



February 1, 2022

Mr. Jeff Layman  
Town of Silt  
Town Administrator  
231 N. 7<sup>th</sup> Street  
PO Box 70  
Silt, CO 81652

RE: Town of Silt Water Treatment Plant Master Plan - Scope of Services Proposed Agreement

Dear Mr. Layman,

Dewberry is pleased to submit this proposal for professional engineering services for the Town of Silt Water Treatment Plant Master Plan (hereinafter referred to as Project).. This letter serves as our understanding of the Project background, scope, schedule, and fee for the project.

## **I. PROJECT UNDERSTANDING**

The following constitutes our understanding of the Project and serves as the basis for the proposed scope of services, schedule, and fee. Significant modifications to the Project may result in modifications to Dewberry's services and fees.

The Town of Silt (Town) owns and operates a 1.0 million gallons per day (mgd) surface water treatment plant (WTP) that was constructed in 2006 and subject to the Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Division (WQCD) drinking water regulations. The Town WTP consists of raw water intake infrastructure, coagulation using flash mixing, clarification (plate settlers), microfiltration membranes, chlorine disinfection, associated chemical feed systems, and pumping systems for raw water, filtrate, and finished water.

Based on discussions with the Town Engineer, Zancanella and Associates, the Town is experiencing high levels of influent turbidity as well as observing elevated levels of manganese in the raw and finished water, both of which demand additional operational attention. High turbidity has led to more frequent membrane fouling and backwashing events where the Town has reported decreased operating life of membrane equipment and increased operation and maintenance for plant staff.

These challenges have prompted the Town to conduct an evaluation of the WTP to outlay capital improvements necessary to identify upgrades to continue meeting CDPHE WQCD regulations and provide a higher level of treatment to address high turbidity and manganese removal. Thus, the proposed Project will consist of an evaluation of Town growth, WTP, and WQCD regulations to assist the Town in budgeting and implementing recommended improvements.

This letter proposal is for a Water Master Plan. Specific tasks included in this scope of work are:

1. Task 1: Project Management
2. Task 2: Project Document Review and Kick-off Meeting
3. Task 3: Basis of Evaluation

4. Task 4: Short-term Alternatives Evaluation
5. Task 5 Long term alternatives Evaluation
6. Task 6 Capital Improvement Plan
7. Task 7 WTP Master Plan Report

This proposal includes scope, schedule, and fee for the project - Scope of Services Proposed Agreement dated February 1, 2022.

## **II. SCOPE OF SERVICES**

The scope of services includes the following tasks:

### **A. Task 1: Project Management**

Project management task includes:

1. Manage Dewberry staff on Project budget, schedule, and quality goals.
2. Provide coordination and communication with team members.
3. Implementing Quality Assurance and Quality Control services on all products to the Town.
4. Preparation and review of invoices are included in this task.

### **B. Task 2: Project Document Review and Kick-off Meeting**

1. Project Document Review
  - a. One (1) on-site Kick-off Meeting with the Town to discuss project approach and objectives. Kick-off Meeting will coincide with the Field Site Visit. This meeting will coincide with the Kick-off Meeting for the Wastewater Treatment Facility Master Plan efforts. Thus, time for attendance and travel is not included in this task since it is included in the Wastewater Treatment Facility Master Plan efforts (refer to Town of Silt Wastewater Treatment Facility Master Plan. Time for this task includes preparation for the meeting for review of existing WTP documents and water quality data to assist in facilitating and conducting the on-site evaluation of the WTP.
  - b. Kick-off Meeting and Field Site Visit will be attended by the following Dewberry personnel:
    - i. Technical Advisor.
    - ii. Project Manager.
    - iii. Project Engineer.
  - c. Field Site Visit
    - i. Coordinate with Town WTP Operations Staff to collect information on the major WTP processes and equipment.
    - ii. Interview operations staff to gather institutional knowledge of current and historical operations, maintenance, and performance.
2. Meetings, Workshops, and Site Visits
  - a. One (1) joint Kick-off Meeting and Field Site Visit.
3. Deliverables

- a. Kick-off Meeting and Field Site Visit agenda and notes (electronic and hard copies).
- 4. Assumptions
  - a. Town shall provide all documents available for the Project Document Review. Documents shall include, but not be limited to, master planning reports, facility reports, permitting reports, regulatory documents, geotechnical reports, and as-built (record) drawings in PDF format. It is assumed these documents are accurate or current.
  - b. Town Operations Staff shall be available for interviews during the Kick-off Meeting and Field Site Visit.
  - c. Time for on-site meetings, workshops, and site visits includes travel time.

### **C. Task 3: Basis of Evaluation**

- 1. Water Quality Evaluation
  - a. Current and 20-year Future Conditions
    - i. Service Area and Land Use
      - Review existing water data and planning documentation related to the Town's service area and land use to baseline the current service area and planned development as well as estimate current demands and production.
      - Review existing water data and planning documentation related to the Town's potential future service area and land use to estimate potential future demands.
      - Evaluate raw and finished water quality parameters as well as flows for average daily demand, maximum monthly demand, and associated peaking factors (current and future).
      - Evaluate existing intermediate process control data including plant data for pretreatment, sedimentation, filtration, disinfection, backwash waste, and associated chemical feed systems and storage.
    - ii. Population: Current and 20-year Estimates
      - Review existing planning documents and perform a comparative analysis of past projections to County assessor and Town population and employment data to update current estimates.
      - Town shall coordinate with Dewberry to develop assumptions for the 20-year projections including population, future growth, expansion plans, demand flows, and water supply.
- 2. Regulatory review
  - a. Review CDPHE WQCD regulations applicable to the Town WTP.
- 3. Meetings, Workshops, and Site Visits
  - a. None, unless requested and approved by the Town as Additional Services.
- 4. Deliverables
  - a. None, unless requested and approved by the Town as Additional Services.
- 5. Assumptions
  - a. Town shall provide all documents necessary for the Water Quality Evaluation in electronic format. Documents shall include, but not be limited to: GIS mapping files,

land use documents, master planning reports, facility reports, permitting reports, as-built (record) drawings in PDF format, population data, easement maps, and property maps. These documents will be assumed to be the best available information at the time of the request and are assumed to be accurate and current.

- b. Town shall provide Town five (5) years of historical water quality and flow data in Microsoft Office Excel format.
- c. Town shall provide water financial operating records: expense and revenue summaries for the past five (5) years.
- d. Town shall provide customer data by monthly volume, type, and fees.
- e. Town shall provide electricity usage as well as water rate data for the past five (5) years and copy of the current water use ordinance.
- f. Any and all communications with CDPHE do not definitively establish any future regulations imposed on the water treatment plant. Projections of regulations and water quality requirements for the Town will be based upon discussions with CDPHE and the Town on Regulation 11: Colorado Primary Drinking Water Regulations (effective 09/30/2020).

#### **D. Task 4: Short-term Alternatives Evaluation**

- 1. Perform a short-term treatment alternatives evaluation that includes the preparation of compilation of recommended WTP improvements over the next ten (10) years.
  - a. Evaluation will include preparation of opinion of probable project, construction, and operation and maintenance costs based on AACE Class 5 cost estimate classification.
  - b. Opinion of probable costs (OPC) will include a net present worth analysis for each identified alternative.
- 2. Facilitate meeting (Workshop No. 1) with the Town to discuss short-term treatment options and recommendations.
  - a. Workshop No. 1 will be attended by the following Dewberry personnel:
    - i. Technical Advisor.
    - ii. Project Manager.
    - iii. Project Engineer.
- 3. Meetings, Workshops, and Site Visits
  - a. One (1) workshop with the Town via teleconference or videoconference (Workshop No. 1).
- 4. Deliverables
  - a. Workshop agenda and notes.
  - b. Town will be provided with an electronic copy for each deliverable.
- 5. Assumptions
  - a. Town WTP Operations Staff shall attend Workshop No. 1.

## **E. Task 5: Long-term Alternatives Evaluation**

1. Perform a long-term treatment alternatives evaluation that includes the preparation of compilation of recommended WTP improvements over the next ten (10) to twenty (20) years.
  - a. Develop alternatives to address shortcomings identified during plant evaluation.
  - b. Evaluation will include preparation of opinion of probable project, construction, and operation and maintenance costs based on AACE Class 5 cost estimate classification.
  - c. Opinion of probable costs (OPC) will include a net present worth analysis for each identified alternative.
  - d. Estimate anticipated impacts on user rates for the recommended improvements.
  - e. Alternatives evaluation will also include a qualitative evaluation of non-economic factors including ease of operation, environmental impact, ability to meet potential future regulatory requirements, upgrade capability, reliability, public acceptance, health and safety, and performance history.
2. Facilitate meeting (Workshop No. 2) with the Town to discuss long-term treatment options and recommendations.
  - a. Workshop No. 2 will be attended by the following Dewberry personnel:
    - i. Technical Advisor.
    - ii. Project Manager.
    - iii. Project Engineer.
3. Meetings, Workshops, and Site Visits
  - a. One (1) workshop with the Town via teleconference or videoconference (Workshop No. 2).
4. Deliverables
  - a. Workshop agenda and notes.
  - b. Town will be provided with an electronic copy for each deliverable.
5. Assumptions
  - a. Town WTP Operations Staff shall attend Workshop No. 2.
  - b. Anticipated impacts on user rates for the recommended improvements does not include a rate study analysis. Work proposed includes adding the cost of improvements over a 20-year horizon assuming a basis of single family equivalents or equivalent residential units (EQR) within the Town's service area with a reserve ratio in accordance with Colorado's State Revolving Fund requirements.

## **F. Task 6: Capital Improvement Plan Recommendations**

1. Recommend short and long-term improvements to the WTP based upon the analyses in Task 4 and 5.
2. Prepare schedule for the recommended improvements with identified regulatory milestones.



## **G. Task 7: WTP Master Plan Report**

1. Preparation of WTP Master Plan Report
  - a. Prepare Draft WTP Master Plan Report and submit to the Town for their review and comment. Town will submit written comments to Dewberry within two (2) weeks after receipt of WTP Master Plan Report.
  - b. Draft WTP Master Plan Report will include summary of the following:
    - i. Demand and Growth Analysis
    - ii. Treatment Alternatives and Recommended Improvements
    - iii. OPCs
    - iv. CIP Recommended Schedule and Milestones
2. Workshop No. 3
  - a. Facilitate workshop with the Town to discuss the Draft WTP Master Plan Report. Workshop format scope includes video conference scheduled and managed by Dewberry.
  - b. Workshop No. 3 will be attended by the following Dewberry personnel:
    - i. Technical Advisor.
    - ii. Project Manager.
    - iii. Project Engineer
3. Finalize WTP Master Plan Report and submit final electronic copy to the Town.
4. Meetings, Workshops, and Site Visits
  - a. One (1) workshop with the Town via teleconference or videoconference (Workshop No. 3).
5. Deliverables
  - a. Workshop agenda and notes.
  - b. Town will be provided with an electronic and hard copy for each deliverable.
6. Assumptions
  - a. Town WTP Operations Staff shall attend Workshop No. 3.
  - b. Additional iterations to prepare deliverables beyond what is described herein are considered Additional Services.
  - c. Town shall review the Draft WTP Master Plan Report for any misrepresentations and inaccuracies prior to the Workshop No. 3 and discuss these items for correction in the meeting.
  - d. Town shall review the Final WTP Master Plan Report for any misrepresentations and inaccuracies and report any thereof immediately to Dewberry for review.
  - e.

## **III. ADDITIONAL SERVICES**

Dewberry will furnish Additional Services for changes in this proposed Scope of Services or as requested by the Town and will provide an estimated fee for Additional Services. Dewberry will not perform Additional Services without prior written authorization from the Town. Additional Services not provided in this Scope of Services include, but are not limited to, the following:

- A. Items identified as Additional Services in each task under the Assumptions subsections in SECTION II – SCOPE OF WORK.
- B. Design, bidding, and construction-phase services.
- C. Geotechnical evaluation: The need for a geotechnical investigation or extent of a geotechnical investigation and associated design services are not included in the proposed scope of services.
- D. Assistance with the Town WTP permitting processes and funding applications, funding contract development, and administrative services following funding contract execution.
- E. Permitting fees.
- F. Conducting archaeological/ historical/property surveys, site survey, survey specific to identifying the boundary of the 100-year and 500-year flood elevation and infiltration and inflow analysis.
- G. A task that is not explicitly included is explicitly excluded.

#### IV. PRELIMINARY PROJECT SCHEDULE

Dewberry estimates completion of the proposed scope of services within six (6) months from the notice to proceed.

- 1. The proposed project schedule was developed based on the Town providing the information delineated herein in a timely manner.
- 2. Dewberry is not responsible for time delays caused by circumstances beyond the control of Dewberry.

#### V. ENGINEERING FEE

Dewberry proposes to complete the proposed Scope of Services described herein for the following estimated lump sum fee with a total of \$99,835:

Task Description	Amount
Task 1: Project Management	\$ 8,740
Task 2: Project Document Review and Kick-off Meeting	\$ 11,760
Task 3: Basis of Evaluation	\$ 14,300
Task 4: Short-term Alternatives Evaluation	\$ 18,535
Task 5: Long-term Alternatives Evaluation	\$ 27,225
Task 6: Capital Improvement Plan Recommendations	\$ 3,360
Task 7: Master Plan Report	\$ 15,915
<b>Total</b>	<b>\$ 99,835</b>

#### VI. AUTHORIZATION

This Agreement authorizes Dewberry to provide engineering services described in this proposal per attached terms and conditions. Please contact me if you require any modifications to this Agreement or need any other assistance.

- A. Items identified as Additional Services in each task under the Assumptions subsections in SECTION II – SCOPE OF WORK.
- B. Design, bidding, and construction-phase services.
- C. Geotechnical evaluation: The need for a geotechnical investigation or extent of a geotechnical investigation and associated design services are not included in the proposed scope of services.
- D. Assistance with the Town WTP permitting processes and funding applications, funding contract development, and administrative services following funding contract execution.
- E. Permitting fees.
- F. Conducting archaeological/ historical/property surveys, site survey, survey specific to identifying the boundary of the 100-year and 500-year flood elevation and infiltration and inflow analysis.
- G. A task that is not explicitly included is explicitly excluded.

#### IV. PRELIMINARY PROJECT SCHEDULE

Dewberry estimates completion of the proposed scope of services ~~within six (6) months from the notice to proceed.~~ *within six (6) months from the (INCLUDING SUBMITTAL TO THE STATE BY 6/30/22) A PDR*

- 1. The proposed project schedule was developed based on the Town providing the information delineated herein in a timely manner.
- 2. Dewberry is not responsible for time delays caused by circumstances beyond the control of Dewberry.

#### V. ENGINEERING FEE

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<b>Total</b>	<b>\$ 99,835</b>

#### VI. AUTHORIZATION

This Agreement authorizes Dewberry to provide engineering services described in this proposal per attached terms and conditions. Please contact me if you require any modifications to this Agreement or need any other assistance.

Dewberry Engineers Inc.

Signature: 

Name: Patrick D. Radabaugh, PE

Title: Senior Associate

Date: February 1, 2022

Town of Silt

Signature: 

Name: Jeff Layman

Title: Town Administrator

Date: 2/15/22

Town of Silt - WTP Master Plan			PIC	QA/QC - Technical Advisor	Civil/Process			Admin	Expenses		
Total Fee \$99,835			Principal-in-Charge	Technical Advisor	Project Manager	Project Engineer	Designer	Admin	Mileage	Meals	ODCs
		Total Effort	Billable Rate	\$300.00	\$220.00	\$205.00	\$150.00	\$125.00	\$110.00	\$0.56	-
Task 1: Project Management			Notes								
1.1	Project Setup and Internal Meeting	\$1,530.00		1		4	2		1		
1.2	Task 1	\$410.00				2					
1.3	Task 2	\$410.00				2					
1.4	Task 3	\$410.00				2					
1.5	Task 4	\$410.00				2					
1.6	Task 5	\$410.00				2					
1.7	Task 6	\$410.00				2					
1.8	Tracking and Invoices	\$1,230.00				6					
1.9	QA/QC	\$3,520.00			16						
Hours		42		1	16	22	2		1		
Fee		\$8,740.00		\$300.00	\$3,520.00	\$4,510.00	\$300.00		\$110.00		
Task 2: Project Document Review and Kick-off Meeting			Notes								
2.1	Kick-off meeting (included in WWTF MP)	\$0.00									
2.2	Field Site Visit Follow-up Meeting and Notes	\$1,860.00			2	4	4				
2.3	Water data review (current)	\$2,935.00			1	3	14				
2.4	Planning documents review	\$2,335.00			1	3	10				
2.5	Permitting documents review	\$1,980.00			1	2	9				
2.6	Design plan documents review	\$2,650.00			2	2	12				
Hours		70			7	14	49				
Fee		\$11,760.00			\$1,540.00	\$2,870.00	\$7,350.00				
Task 3: Basis of Evaluation			Notes								
3.1	CDPHE	\$0.00									
3.1.1	Regulation Review	\$1,610.00				2	8				
3.1.2	CDPHE coordination - Regulatory	\$1,010.00				2	4				
3.1.3	CDPHE coordination - Funding	\$1,010.00				2	4				
3.2	Projections	\$0.00									
3.2.1	Demands and Source Water Supply	\$4,530.00				6	22				
3.2.2	Population	\$1,610.00				2	8				
3.2.3	Land Use	\$1,610.00				2	8				
3.3	Drinking water quality requirements	\$2,920.00				4	14				
Hours		88				20	68				
Fee		\$14,300.00				\$4,100.00	\$10,200.00				
Task 4: Short-term Alternatives Evaluation			Notes								
4.1	Raw water intake	\$1,010.00				2	4				
4.2	Pretreatment	\$2,920.00				4	14				
4.3	Sedimentation	\$1,610.00				2	8				
4.4	Filtration	\$2,920.00				4	14				
4.5	Disinfection	\$2,920.00				4	14				
4.6	Clearwell	\$505.00				1	2				
4.7	Backwash settling basin	\$1,625.00			1	1	8				
4.8	Treatment matrix analysis and selection	\$1,610.00				2	8				



Town of Silt - WTP Master Plan				PIC	QA/QC - Technical Advisor	Civil/Process			Admin	Expenses		
Total Fee \$99,835			Project Title	Principal-in-Charge	Technical Advisor	Project Manager	Project Engineer	Designer	Admin	Mileage	Meals	ODCs
		Total Effort	Billable Rate	\$300.00	\$220.00	\$205.00	\$150.00	\$125.00	\$110.00	\$0.56		-
4.9	CADD figures	\$1,555.00				1	4	6				
4.10	Workshop No. 1	\$1,860.00	Prep and attendance		2	4	4					
Hours		114			3	25	80	6				
Fee		\$18,535.00			\$660.00	\$5,125.00	\$12,000.00	\$750.00				
Task 5: Long-term Alternatives Evaluation												
5.1	Raw water intake	\$1,310.00				2	6					
5.2	Pretreatment	\$1,910.00				2	10					
5.3	Sedimentation	\$1,910.00				2	10					
5.4	Filtration	\$1,910.00				2	10					
5.5	Disinfection	\$1,910.00				2	10					
5.6	Clearwell	\$1,910.00				2	10					
5.7	Backwash settling basin	\$1,910.00				2	10					
5.8	Chemical feed systems and storage	\$1,910.00				2	10					
5.9	Treatment matrix analysis and selection	\$1,910.00				2	10					
5.10	Cost Evaluation	\$1,910.00				2	10					
5.10.1	Capital	\$1,910.00				2	10					
5.10.2	O&M	\$1,910.00				2	10					
5.10.3	User Rate Impact	\$1,760.00				2	9					
5.11	Workshop No. 2	\$3,145.00			3	7	7					
Hours		168			3	33	132					
Budget Revenue		\$27,225.00			\$660.00	\$6,765.00	\$19,800.00					
Task 6: Capital Improvement Plan Recommendations												
6.1	Regulatory Timeline	\$1,530.00			1	2	6					
6.2	CIP Timeline	\$1,830.00			1	2	8					
		\$0.00										
Hours		20			2	4	14					
Budget Revenue		\$3,360.00			\$440.00	\$820.00	\$2,100.00					
Task 7: WTP Master Plan Report												
7.1	WTP MP Report	\$0.00										
7.1.1	Draft	\$7,940.00				8	32	12				
7.1.2	Workshop No. 3	\$3,145.00			3	7	7					
7.1.3	Draft Update with Comments	\$3,220.00				4	16					
7.1.4	Final	\$1,610.00				2	8					
Hours		99			3	21	63	12				
Budget Revenue		\$15,915.00			\$660.00	\$4,305.00	\$9,450.00	\$1,500.00				

Total Hours			1	34	139	408	18	1				
Fee Total			\$300	\$7,480	\$28,495	\$61,200	\$2,250	\$110	\$0	\$0	\$0	

**ATTACHMENT B**  
**STANDARD TERMS AND CONDITIONS**

These Standard Terms and Conditions ("STCs") are incorporated by reference into the foregoing agreement or proposal, along with any future modifications or amendments thereto made in accordance with Paragraph 23 below (the "Agreement") between Dewberry ("we" or "us" or "our") and its client ("you" or "your") for the performance of services as defined in our proposal ("Services"). These STCs are fully binding upon you, just as if they were fully set forth in the body of the Agreement, and shall supersede any term or provision elsewhere in the Agreement in conflict with these STCs.

1. **Period of Offer.** Unless we decide, in writing, to extend the period for acceptance by you of our proposal, you have 90 days from our proposal date to accept our proposal. We have the right to withdraw the proposal at any time before you accept. Delivery of a signed proposal—whether original or copy—to us constitutes your acceptance of the proposal, including attachments expressly incorporated into the proposal by reference. The proposal and incorporated attachments shall constitute the entire Agreement between you and us. If you request us to render Services before you deliver a signed proposal to us, and we render Services in accordance with the proposal, you agree that the proposal and these STCs constitute the Agreement between you and us even if you fail to return a signed proposal to us.
2. **Scope of Services.** For the fee set forth in the Agreement, you agree that we shall only be obligated to render the Services expressly described in the Agreement. Our Services shall not be construed as providing legal, accounting, or insurance services. Unless the Agreement expressly requires, in no event do we have any obligation or responsibility for:
  - a. The correctness or completeness of any document which was prepared by another entity.
  - b. The correctness or completeness of any drawing prepared by us, unless it was properly signed and sealed by a registered professional on our behalf.
  - c. Favorable or timely comment or action by any governmental entity on the submission of any construction documents, land use or feasibility studies, appeals, petitions for exceptions or waivers, or other requests or documents of any nature whatsoever.
  - d. Taking into account off-site circumstances other than those clearly visible and actually known to us from on-site work.
  - e. The actual location (or characteristics) of any portion of a utility which is not entirely visible from the surface.
  - f. Site safety or construction quality, means, methods, or sequences.
  - g. The correctness of any geotechnical services performed by others, whether or not performed as our subcontractor.
  - h. The accuracy of earth work estimates and quantity take-offs, or the balance of earthwork cut and fill.
  - i. The accuracy of any opinions of construction cost, financial analyses, economic feasibility projections or schedules for the Project.

Should shop drawing review be incorporated into the Services, we shall pass on the shop drawings with reasonable promptness. Our review of shop drawings will be general, for conformance with the design concept of the Project to which this Agreement relates ("Project") and compliance with the information given in the construction documents, and will not include quantities, detailed dimensions, nor adjustments of dimensions to actual field conditions. Our review shall not be construed as permitting any departure from contract requirements nor as relieving your contractor of the sole and final responsibility for any error in details, dimensions or otherwise that may exist.

3. **Your Oral Decisions.** You, or any of your directors, officers, partners, members, managers, employees or agents having apparent authority from you, may orally: (a) make decisions relating to Services or the Agreement; (b) request a change in the scope of Services under the Agreement; or (c) request us to render additional Services under the Agreement, subject to our right to require you to submit the request in writing before your decision or request shall be considered to have been effectively made. You may, at any time, limit the authority of any or all persons to act orally on your behalf under this Paragraph 3, by giving us seven (7) days advance written notice.
4. **Proprietary Rights.** The drawings, specifications and other documents prepared by us under this Agreement are instruments of our service for use solely for the Project and, unless otherwise provided, we shall be deemed the author of these documents and shall retain all common law, statutory, and other reserved rights, including the copyright and rights to any Dewberry trademarks. Upon payment in full for our Services, you shall be permitted to retain copies, including reproducible copies of our instruments of service for information and reference for the Project. We hereby grant to you a perpetual, irrevocable, and nonexclusive license to use our Intellectual Property, including but not limited to, any work, process, product, idea or concept, also subject to full payment for services. Submission or distribution of documents to meet official regulatory requirements or for similar purposes in connection with the Project is not to be construed as publication inconsistent with our reserved rights. You shall defend, indemnify and hold us harmless, and release us, from any and all liability, loss, damages, claims and demands for loss, damages, property damages or bodily injury, arising out of any use (including, without limitation, the means or media of transfer, possession, use, or alteration) of our instruments of service by (i) you, if such use is inconsistent with our reserved rights or this Paragraph 4, or (ii) any third party, regardless of the manner of use, if such third party received our instruments of service directly or indirectly from you (including if we or others have transmitted such instruments of service to the third party at your request or direction, for your benefit, or, and without limiting the foregoing, pursuant to a contractual obligation that is directly or indirectly derived (or flowed down) from a contract to which you have privity).
5. **Fees and Compensation.** If you request us to render services not specifically described in the Agreement, or, if we or anyone in our employ, is called upon to be deposed or to testify in a matter in which we are not a named party, that relates to the Project, you agree to compensate us for such services in accordance with the hourly rates as set forth on Attachment A of this Agreement or in any subsequently effective schedule, unless otherwise agreed in writing. If no compensation rate is set forth on Attachment A, or through written agreement between you and us, we shall be compensated for such services at our then current hourly rates. We may unilaterally increase our lump sum or unit billing rates on each anniversary of your acceptance of this Agreement by as much as five percent or the percentage increase in the CPI-W (U.S. Department of Labor Consumer Price Index-Washington), whichever is greater. Hourly rates are subject to periodic revision at our discretion.
6. **Period of Service.** The provisions of this Agreement and the compensation provided for under the Agreement have been established in anticipation of the orderly and continuous progress of the Project. Our obligation to render the Services will extend only for that period which may reasonably be required to complete the Services in an orderly and continuous manner, and we may then, at our sole option, terminate the Agreement.
7. **Reimbursable Expenses.** Unless the Agreement otherwise provides, you shall reimburse us, or our affiliates, for all expenses we incur to render the Services for you under this Agreement, plus fifteen percent. We may submit invoices for reimbursable expenses separately from invoices for Services.
8. **Payment Terms.** We may submit invoices at any time to you for Services and for reimbursable expenses incurred. Invoices are payable within 30 days of the invoice date, and you agree to pay a finance charge of 1½% per month on any unpaid balance not received by us within 30 days of the invoice date. If you require payment via credit card, Dewberry will assess a 3% processing fee on the total amount invoiced. Invoices may be based either upon our estimate of the proportion of the total Services actually completed at the time of billing for lump sum or fixed fee services, or in the case of hourly services, upon rendering of the Services. If any invoice is not paid within 30 days of the invoice date, we shall have the right either to suspend the performance of our Services until all invoices more than 30 days past due are fully paid or to terminate the agreement and to initiate proceedings to recover amounts owed by you. Additionally, we shall have the right to withhold from you the possession or use of any drawings or documents prepared by us for you under this or any other agreement with you until all delinquent invoices are paid in full. You shall not offset payments of our invoices by any amounts due or claimed to be due for any reason. If you do not give us written notice disputing an invoice within 20 days of the invoice date, the invoice shall conclusively be deemed correct. All payments made by you should specify the invoice numbers being paid. If we receive payments that do not specify the invoices being paid, you agree that we may apply payments in our sole discretion. Time is of the essence of your payment obligations; and your failure to make full and timely payment shall be deemed a material breach.
9. **Information from You and Public Sources.** You shall furnish us all plans, drawings, surveys, deeds and other documents in your possession, or that come into your possession, which may be related to the Services, and shall inform us in writing about all special criteria or requirements related to the Services (together, "Information"). We may obtain deeds, plats, maps and any other information filed with or published by any governmental or quasi-governmental entity (together, "Public Information"). Unless we are engaged in writing as an additional service to independently verify such, we may rely upon Information and Public Information in rendering Services. We shall not be responsible for errors or omissions or additional costs arising out of our reliance on Information or Public Information. You agree to give prompt notice to us of any development or occurrence that affects the scope or timing of Services, or any defect in the final work submitted by us, or errors or omissions of others as they are discovered. We shall not be responsible for any adverse consequence arising in whole or in part from your failure to provide accurate or timely information, approvals and decisions, as required for the orderly progress of the Services.
10. **Plan Processing.** We may submit plans and related, or other, documents to public agencies for approval. However, it may be necessary, in order to serve your interests and needs, for us to perform special processing, such as attending meetings and conferences with different agencies, hand carrying plans or other documents from agency to agency, and other special services. These special services are not included in the basic fee and shall be performed as additional services on an hourly fee basis in accordance Paragraph 5 above.



11. **Meetings and Conferences.** To the extent the Agreement provides, we will attend meetings and conferences that you, or your representatives, reasonably require. Furthermore, we will meet on an as-needed basis with public agencies that might be involved in the Project. Because we cannot forecast the scope and nature of these meetings and conferences, we will perform meeting and conference services on an hourly fee basis in accordance with our applicable hourly rate schedule.
12. **Your Claims.** You release us from, and waive, all claims of any nature for any and all errors or omissions by us related to our performance under this Agreement, or in the performance of any supplementary services related to this Agreement, unless you have strictly complied with all of the following procedures for asserting a claim, as to which procedures time is of the essence:
  - a. You shall give us written notice within 10 days of the date that you discover, or should, in the exercise of ordinary care, have discovered that you have, or may have, a claim against us. If you fail to give us written notice within such 10 days, then such claim shall forever be barred and extinguished.
  - b. If we accept the claim, we shall have a reasonable time to cure any error or omission and any damage. This shall be your sole remedy, and you must not have caused the error or omission, or any damage resulting from the error or omission, to be cured, if we are ready, willing and able to do so.
  - c. If we reject the claim, we shall give you written notice of our rejection within 30 days of our receipt of your notice of claim. You shall then have 60 days to give us an opinion from a recognized expert in the appropriate discipline, corroborating your claim that we committed an error or omission, and establishing that the error or omission arose from our failure to use the degree of care ordinarily used by professionals in that discipline in the jurisdiction local to the Project. If you fail to give us such an opinion from a recognized expert within 60 days from the date we send you notice of our rejection of the claim, then such claim shall forever be barred and extinguished.
  - d. We shall have 60 days from receipt of your expert's written opinion to reevaluate any claim asserted by you. If we again reject such claim, or if the 60-day period from receipt of the written opinion of your expert elapses without action by us, then you may have recourse to such other remedies as may be provided under this Agreement.
13. **Hazardous or Toxic Wastes or Substances, Pollution or Contamination.** You acknowledge that Services rendered under this Agreement may be affected by hazardous or toxic wastes or substances, or pollution or contamination due to the presence of hazardous or toxic wastes or substances. To induce us to enter into this Agreement, you agree to indemnify, defend and hold us harmless from and against any and all liability, loss, damages, claims and demands for loss, damages, property damages or bodily injury, that relate, in any way, to both (a) hazardous or toxic wastes or substances, or pollution or contamination due to the presence of hazardous or toxic wastes or substances, and (b) the performance by us of our obligations under the Agreement, whether or not such performance by us is claimed to have been, or was, or may have been, negligent. Unless otherwise expressly set forth in this Agreement, we shall have no responsibility for searching for, or identifying, any hazardous or toxic wastes or substances, or pollution or contamination due to the presence of hazardous or toxic wastes or substances; but if we discover or suspect the presence of any such wastes, substances, pollution or contamination due to the presence of hazardous or toxic wastes or substances, then we, in our sole discretion, and at any time, may stop work under, or terminate, this Agreement, in which event we will have no further liability to you for performance under this Agreement, and you shall make the payments to us required by Paragraph 14 of the STCs.
14. **Termination.** Either party may terminate the Agreement if the other party materially breaches the Agreement and does not cure the breach within 7 days after receiving notice of the breach from the non-breaching party. You shall immediately pay us for our Services rendered and expenses incurred through the termination date, including fees and expenses that we incur as a result of the termination.
15. **Payment of Other Professionals.** If this Agreement includes continuation of services begun by other architects, engineers, planners, surveyors, or other professionals, we may suspend our Services until you make arrangements satisfactory to such other professionals for payment. If satisfactory arrangements have not been made within a time determined by us to be reasonable, then we may in our sole discretion terminate this Agreement.
16. **Assignment and Third-Party Beneficiaries.** Neither party shall assign or transfer any rights, interests or claims arising under this Agreement without the written consent of the other, provided, however, that we are permitted to (i) employ independent consultants, associates, and subcontractors as we may deem necessary to render the Services, (ii) assign our right to receive compensation under this Agreement, and (iii) transfer the Agreement to an affiliate of ours, in our sole discretion, with written notice to you (an affiliate for purposes of this Paragraph 16 is defined as any other business entity that directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with, us). This Agreement does not confer any benefit or right upon any person or entity other than the parties, except that our partners, members, managers, directors, officers, employees, agents and subcontractors shall have and be entitled to the protection afforded us under Paragraphs 9, 12, 13, 16, 20 and 22 of this Agreement.
17. **Applicable Law and Forum Selection.** The Commonwealth of Virginia's laws shall govern this Agreement in all respects, including matters of construction, validity, and performance. Except as provided in Paragraph 18, the parties agree that the courts of Fairfax County, Virginia, and the Federal District Court, Eastern District of Virginia, Alexandria Division, (together, "Courts") shall have exclusive jurisdiction over any controversy, including matters of construction, validity, and performance, arising out of this Agreement. The parties consent to the jurisdiction of the Courts and waive any objection either party might otherwise be entitled to assert regarding jurisdiction. The parties irrevocably waive all right to trial by jury in any action, proceeding, or counterclaim arising out of or related to this Agreement.
18. **Arbitration of Our Claims for Compensation.** Instead of proceeding in court, we, in our sole and absolute discretion, may submit any claim for compensation due us under this Agreement to arbitration in Fairfax County, Virginia in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association, and judgment upon the arbitration award may be entered in any court having jurisdiction. You agree not to assert any counterclaim or any defense by way of set-off in such arbitration, and that the arbitrator or panel shall have no authority to consider, or to render, an award based upon any such counterclaim or defense by way of set-off. We shall have the right to withdraw our demand for arbitration at any time before the arbitration hearing starts by giving written notice to the arbitrator or panel and you; and upon the giving of such notice by us, the arbitration shall terminate, no award shall be rendered, and we may then pursue our remedies in accordance with Paragraph 17 above.
19. **Severability.** If any part, term, or provision of this Agreement is held to be illegal or unenforceable, the validity and enforceability of the remaining parts, terms, and provisions of this Agreement shall not be affected, and each party's rights shall be construed and enforced as if the Agreement did not contain the illegal or unenforceable part, term, or provision.
20. **Limitations on Liability.** In recognition of the relative risks and benefits of the Project to you and us, you agree, that our liability for any loss, damages, property damages or bodily injury of or to you caused in whole or in part by us in the performance of this Agreement or any supplementary services in any way related to this Agreement, shall be limited in the aggregate to the amount of fees that you have paid to us for the Services. The parties intend that the foregoing limitation on liability shall apply to all claims, whether sounding in tort, contract, warranty, or otherwise. You release, waive, and shall not seek contribution from, or indemnification by, us for any claims of any nature made against you by any other person who may suffer any loss, damages, property damages or bodily injury in any manner associated with our services, or any supplementary services in any way related to this Agreement. Notwithstanding anything to the contrary elsewhere in the Agreement, we shall not be liable to you, in any event or for any amount, for delays; or for consequential, special or incidental damages; or for punitive or exemplary damages; or for the cost to add an item or component that we omitted from the instruments of service due to our negligence, to the extent that item or component would have otherwise been necessary, or adds value or betterment, to the Project. Should you find the terms of this Paragraph 20 unacceptable, we are prepared to negotiate a modification in consideration of an equitable surcharge to pay our additional insurance premiums and risk.
21. **Payment of Attorney's Fees.** The losing party shall pay the winning party's reasonable attorney's fees and expenses for the prosecution or defense of any cause of action, claim or demand arising under this Agreement in any court or in arbitration.
22. **Indemnification.** You agree to indemnify, defend and hold us harmless from and against any and all liability, loss, damages, claims and demands for loss, damages, property damages or bodily injury, arising out of acts or omissions by you, or your contractor, subcontractor or other independent company or consultant employed by you to work on the Project, or their respective partners, members, managers, directors, officers, employees, agents or assigns; or arising out of any other operation, no matter by whom committed or omitted, for and on behalf of you, or such contractor, subcontractor or other independent company or consultant, whether or not due in part to errors or omissions by us in the performance of this Agreement, or in the performance of any supplementary service in any way related to this Agreement, provided that you are not required to indemnify and hold us harmless under this Paragraph 22 in the event of our sole negligence.
23. **Integration Clause.** The Agreement represents the entire agreement of the parties. No prior representations, statements, or inducements made by either us, you, or the respective agents of either, that is not contained in the Agreement shall enlarge, modify, alter, or otherwise vary the written terms of the Agreement unless they are made in writing and made a part of the Agreement by attachment, incorporated by reference in the Agreement or signed or initialed on behalf of both parties.
24. **Notice.** Any notices issued to us shall be sent to our project manager with a copy sent via email to [Notices@dewberry.com](mailto:Notices@dewberry.com) or mailed to 8401 Arlington Blvd, Fairfax VA 220131, Attn: Legal Department.