



**Date:** December 6, 2022

**Client:** Mr. Kevin Kuchenbecker, Interim Public Works Director  
City of Deadwood  
108 Sherman Street  
Deadwood, SD 57732

**Engineer:** Mr. Michael Towey, PE  
Towey Design Group, Inc.  
475 Villa Drive, Suite #3  
Box Elder, SD 57719

**RE:** City of Deadwood – Water Demands Modeling and Planning Project – Task 2

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Dear Kevin,

Thank you for the opportunity to provide our proposal to you for the second task of this project. The initial project (approved by City Commission on 09.05.2022) was to develop a functional water model (“existing conditions”) of the Deadwood Water Network. The model was then used to generally evaluate the reliability the current system with the proposed new developments within Deadwood. The resulting efforts identified the Denver Avenue booster pump station and the Roosevelt Reservoir as limiting factors in the system.

The following narrative presents our proposal to further expand our Task 1 services. This also includes preparation of final documentation concerning our recommendations/modeling efforts as to the proposed expansion of the city water system. One future task order to this project may include the preparation of a facility plan for the city’s use on the State Water Plan.

**PROJECT UNDERSTANDING**

Our understanding of the project is as follows.

- The City of Deadwood is in the early stages of seeing some major growth. Several new subdivisions have been brought forward to city staff and the city is concerned that they may not have enough water capacity with the future increased demands.
- Several existing subdivisions have also expressed interest in connecting to city water network.
- The existing water system is sized appropriately for the existing conditions. At full buildout, including full development of the proposed subdivisions, the city water system becomes inadequate for the additional demands.
- TDG has recommended that the allowable number of new additional single family dwelling units should be limited to 100 based on peak day flows and pumping rates.

TDG has prepared this final design services proposal in conjunction with the project documents. Our scope of work and breakdown of fees is summarized as follows.



## **Task 1 – Final Modeling Task –**

This task addresses efforts to validate and update the city water model.

- TDG will request and review the Sanitary District’s water rights permit. At full buildout, our initial analysis indicated an increase in water use by 140%. Having secured adequate water rights at that time will be key.
- TDG will request current pump curve data for all pumps within the system. The preliminary model utilizes existing system flow data to develop theoretical pump curves in the Denver Avenue booster pump station. No data was presented for the other pumps so to adequately refine the model, data from the other pumps will need to be incorporated.
- City staff has expressed their concern as to utilization of single-family homes converted to short term rentals and their effects of water usage. This will be addressed in Technical Memorandum #2 and incorporated into the final model.
- TDG will develop with the help of City staff up to eight (8) potential options to review to expand the city water system. The potential options will be reviewed for cost, feasibility, timing, and adequacy. The options will be narrowed to three (3) or four (4), then further detailed in Technical Memorandum #2. It is anticipated that these will become the basis of the facility plan document.
- TDG will prepare Technical Memorandum #2 to the city for initial review. This memorandum will include:
  - A comparison of the “final” existing conditions model to the developed model.
  - Development of short-term rentals classification and incorporation of those rentals into the model.
  - Recommendations for future solutions including sequencing, anticipated cost analysis, and timing of said improvements.
  - Discussion of future project requirements.

## **SCHEDULE**

TDG is prepared to start this project as soon as possible. We would anticipate start to finish; this project will take approximately 8 - 10 weeks following authorization from your team. Assuming an NTP by December 21st, we have prepared the following theoretical schedule:

- NTP – 12.21.22
- Acquire water rights information and research short term rentals – week of 12.28.22
- City/TDG potential options meeting – 01.05.2023
- Recalibration work complete – week of 01.13.23
- Review of potential options complete and City review meeting – week of 01.27.23
- Final options review – week of 02.23.2023
- Initial draft of report due to City – week of 02.10.23
- City review of report – week of 02.17.23
- Final submittal for Task #2 – week of 02.24.23

## **DATA PROVIDED BY CITY STAFF**

The following is a partial list of items to be requested by TDG staff in order to complete this task.



- Copy of Lead/Deadwood Sanitary District’s Water Right Permits. This can be requested from SDDANR also.
- O&M Manuals for all booster pumps within the system
- Updated planning documentation for proposed subdivisions (or best available information)
- Any additional information determined during study as available.

**PROGRESS PAYMENTS**

Monthly progress payments shall be processed by City upon receipt of the claim as computed by the TDG based on work completed during the month per the hourly rates and allowable reimbursables as established in this proposal and approved by City. TDG traditionally invoices our clients on the last Saturday of each month.

**DESIGN FEES**

TDG proposes to complete this project on an hourly not-to-exceed basis. We have estimated our total fee for this project to be Twenty-Four Thousand Nine Hundred Five Dollars and no cents (\$24,905.00). Insurance and W-9 documents can be provided as requested. Exhibit A and B from our initial proposal apply as related to this project.

**FEE BREAKOUT**

The following table identifies our fee breakout for each task.

Task	Design	REIM / Mile	Sales Tax	Subtotal
Design Services	\$24,779.00	\$126.00	\$0.00	\$24,905.00
<b>Totals</b>	<b>\$24,779.00</b>	<b>\$126.00</b>	<b>\$0.00</b>	<b>\$24,905.00</b>

**ACCEPTANCE OF THIS PROPOSAL**

TDG requests written acceptance of this proposal as listed in the Design Fees section, but the following actions shall constitute your acceptance of this proposal together with the Terms and Conditions and Amendments: 1) issuing an NTP or sub-consultant contract for any of the Services described above, or 2) written or electronic notification for TDG to proceed with any of the Services described in this proposal.

If these arrangements are acceptable, please sign below and return one copy to me, electronically. We are enthused about this project and look forward to working with you and your team members to effectively meet the needs of your development.



Sincerely,

Michael Towey, PE  
Towey Design Group, Inc.

Exhibit A – TDG Standard Terms & Conditions  
Exhibit B – TDG Hourly Rates

ACCEPTED BY:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date