

**DATA SHEET**  
**Agenda Item No. 14.**

**Meeting Date: December 6, 2018**

**Agenda Item:**

Consider approval of Contract and Task Order No. 1 with RJN Group, Inc. to perform force main valve inspection / repair, hydraulic modeling and assist in development of system operational guidelines for the Lakeview Water Reclamation System.

<b>Placement:</b>	<input type="checkbox"/> Consent	<input checked="" type="checkbox"/> Individual Consideration	<input type="checkbox"/> Executive Session
<b>Vote:</b>	<input type="checkbox"/> Non-Weighted	<input checked="" type="checkbox"/> Weighted Capital	
<b>Recommending Department:</b> Engineering and Operations			

**Background:**

The Lakeview Water Reclamation System (LRWS) has been in service for more than twenty years. In October 2016, the Board received a Halff Associates, Inc. report that recommended District perform additional technical analysis to identify improvements that may be needed in the LRWS. Following that recommendation, District contracted with Pure Technologies, Inc. to perform inspection of District force mains in the LWRS to improve operations and increase reliability. To insure a successful inspection, force main flows and valve operations must first be evaluated. This work is outside the routine capability of District staff and requires supplemental support.

Proposed Contract and Task Order No. 1 with RJN Group, LLC, is for engineering services related to evaluating, excavating and repairing force main system valves, hydraulic modeling, wastewater flow analysis and development of recommendations for operational improvements to the Lakeview Water Reclamation System.

The task order includes budget amounts of \$36,440 for Basic Services (valve evaluation, hydraulic modeling and operational analysis/recommendations), \$87,417 for Special Services (valve inspection, excavation, and repair), and \$10,000 Additional Services (contingency for project related unknowns). The total task order amount is \$133,857.

**Financial:**

Sufficient funds are available in the FY 2019 Capital Budget for the valve inspection, hydraulic modeling and operational analysis project and identified as project number 539.

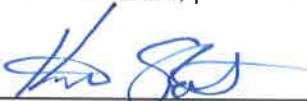
**Recommendation:**

Staff recommends that the Board authorize the proposed Contract and Task Order No. 1 with RJN Group, Inc. to perform force main inspections and operational guideline development for the Lakeview Water Reclamation System

**Enclosures:**

Task Order No. 1.

The proposed contract is a standard District professional services agreement and is not enclosed. If you would like a personal copy of the contract, please contact Kurt Staller.

Submitted By:  Date: November 30, 2018  
Kurt Staller, Acting Director/ Engineering & Construction

RJN Group, Inc.

## ATTACHMENT A-1

## Task Order No. 1

This Task Order is part of the AGREEMENT between RJN Group, Inc., the "ENGINEER", and Upper Trinity Regional Water District (the "OWNER"), for a project generally described as:

**Lakeview Force Main Hydraulic Model and Valve Assessment**

The purpose of this Task Order is as follows:

development and recommendations for improvements.

- A calibrated and verified InfoWorks ICM model and database of the force main network. Including multiple scenarios, system demands and operational configurations.

**ARTICLE I  
SCOPE OF SERVICES**

The ENGINEER agrees to furnish the OWNER the following specific services:

**BASIC ENGINEERING SERVICES**

Hydraulic Model of the Lakeview System

**A. Task 1 – Model Build/Calibration/System Performance/Analysis**

- a. Develop a fully dynamic hydraulic model of the Lakeview force main system using Innovyze's premium network modelling software InfoWorks ICM, capable of undertaking time series/extended state model simulations.
- b. InfoWorks ICM network model of the force main network comprising all lift stations, forcemains and associated appurtenances down to the inlet works of the WWTP.
- c. Processing of available SCADA data from lift stations, inline flow meters and pressure gauges (if available) as well as inflows/outflows from the WWTP.
- d. Initial extended model simulations using the processed inflow hydrographs into each lift station.
- e. Preliminary reporting on any identified anomalies and provision of outputs as required to assist the SmartBall acoustic inspections.
- f. Incorporate SmartBall inspections results into the model to reflect the observed system performance. Analyze the refined verified hydraulic model to assess the sewage age profile at key locations in the network and evaluate gas ventilation and determine odor control requirements at air valves along the entire limits of the Lakeview Force Main.
- g. Expand and modify the verified model to test out alternative operation regimes to improve system operations.
- h. Deliverables will include:
  - A technical memorandum with operational recommendations outlining the modeling

**B. Task 2 – Project Management/Meetings/QC Review**

- a. Client Coordination Meetings
- b. Project Correspondence, Document Management and project oversight
- c. Sub-consultant Management
- d. QA/QC Submittal Review
- e. Scheduling
- f. Monthly Invoicing
- g. Project Coordination including permitting, excavation and minor valve repair

**C. Task 3 – Recommendations/Reports**

- a. Odor control at air valves
- b. Modifications to Pump Station operations to reduce frequency of pump cycling and pressurization swings near air valves
- c. Analysis introduction of "high points" and "pinch valves" in the network using barometric loops to keep force mains pressurized to minimize gas release from air valves
- d. Operational readiness report for existing valves in the Lakeview Force main system.

Deliverables:

- Model of the Lakeview Force Main
- Technical Report with operational Recommendations

**SPECIAL SERVICES**

Special Services are those services known to be required for completion of the project that the OWNER agrees are to be furnished by the ENGINEER or by a subconsultant that cannot be defined sufficiently at this time to establish the maximum compensation. The services are not included in the scope of work of Basic Services or the amount of compensation for Basic Services. The Special Services for this assignment are

described as follows:

- A. Additional Meetings and Site visits: Attending additional meetings or site visits beyond those specifically included in the basic services.
- B. Lakeview Force Main Valve Assessment and Exercising - prepare an assessment and position report for up to 30 valves in the Lakeview System. This assessment will include identifying the following information per valve, at a minimum:
  - a. Operate valves in accordance with the AWWA manual M-44, through a minimum of two consecutive range of operations
  - b. Document number of turns
  - c. Document max torque required to operate valve
  - d. Valve accessibility
  - e. Depth of valve
  - f. Determine if valve is able to operate through full range of motion for at least two cycles (full cycle is from open-close-open)
  - g. GPS coordinates through handheld GPS locator (GPS locations will be provided in ESRI ArcGIS format)
  - h. Digital picture of valve and surrounding area
  - i. Other applicable information
  - j. Information will be incorporated into the meter replacement technical memorandum.
  - k. Condition Assessment of each valve
  - l. Report on the position of each valve
  - m. GPS location of each valve assessed
  - n. Deliverable report summary of valves in tabular form with corresponding GPS coordinate of each valve location, condition, position and operational readiness
  - o. Minor traffic Control where applicable
- C. Conducted up to 10 valve repairs as determined during field valve assessment. Repair methods may include greasing internal components, replacing operating stem and/or shear pins, packing and other issues.
- D. The RJN Group will excavate up to six (6) valve to conduct valve repairs. The excavated site will be filled and restored to match existing site conditions.

This information will be incorporated into a written valve assessment and repair technical memorandum. Valve condition information will also be delivered to UTRWD in an ESRI ArcGIS compatible format.

**ADDITIONAL SERVICES**

Compensation by the OWNER to the ENGINEER for all Additional Services, which may be required by the OWNER will be enumerated on an actual raw salary cost times a 3.0 multiplier basis as generally described in Exhibit CO. A budget allowance has been made for this item and will not be exceeded without prior written authorization from the OWNER. No work will be undertaken on this item without specific written authorization from the OWNER.

- A. Any additional services that may be required by the OWNER for completion of the project that are not included in the Basic or Special Services.

**Article II  
Compensation**

**BASIC SERVICES**

Compensation by the OWNER to the ENGINEER for all Basic Services enumerated in Task Order No. 1 will be on an actual raw salary cost times a 3.0 multiplier basis as generally described in Exhibit CO. A budget allowance has been made for this item and will not be exceeded. :

A. Task 1 - Hydraulic Modeling	\$ 28,912.00
B. Project Management/Meetings/QC	\$ 4,272.00
C. Recommendations/Report	\$ 3,256.00
Amount	<u>\$ 36,440.00</u>

The total compensation for Basic Services authorized by Task Order No. 1 is estimated to be \$ 36,440.00.

**Special Services**

For all Special Services enumerated in Task Order No. 1:

A. Valve Assessment	\$ 5,775.00
B. 10 Valve Repairs	\$ 11,220.00
C. Valve Excavation/Site Restoration	\$ 70,422.00
Not-to-exceed	<u>\$ 87,417.00</u>

**Additional Services**

Compensation by the OWNER to the ENGINEER for all Special Services which may be required by the OWNER, shall be enumerated on an actual raw salary cost times a 3.0 multiplier basis as generally described in Exhibit A.. A budget allowance has been made for this item and will not be exceeded without prior written authorization from the OWNER. No work will be undertaken on this item without specific written authorization from the OWNER.

Total budget allocation for Additional Services for Task Order No. 1:

Not-to-exceed	<u>\$ 10,000.00</u>
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**Total Compensation Summary**

Basic Services Items A-H	\$ 36,440.00
Special Services Item A-C	\$ 87,417.00
Additional Services	\$ 10,000.00
Total Authorization	<u>\$ 133,857.00</u>

**Other Provisions**

The following provisions shall apply to this Task Order:

The ENGINEER's compensation is based on immediate authorization to proceed and timely completion of the project. If the project timing deviates from the assumed schedule for causes beyond the ENGINEER's control, the ENGINEER reserves the right to request renegotiation of those portions of the lump sum affected by the time change.

Compensation for Additional Services will be on an actual cost times a multiplier basis specified when the task order authorizing the Additional Services is approved by the OWNER.

This Task Order No. 1 will become part of the referenced AGREEMENT when executed by both parties.

IN WITNESS WHEREOF, the parties execute below:

For the OWNER, Upper Trinity Regional Water District dated this \_\_\_\_\_ day of \_\_\_\_\_, 2018.

By: \_\_\_\_\_

Title: \_\_\_\_\_

For the ENGINEER, RJN Group, INC. dated this \_\_\_\_\_ day of F, 2018.

By: Daniel Jackson, PE  
Name

Title: Vice President