EXHIBIT A - SCOPE OF WORK
NORTH END WASTEWATER SYSTEM EXPANSION

1. Project Services. Consultant agrees to perform professional civil, process mechanical, electrical engineering and design services for a project known and described as North End Wastewater System Expansion known as the "Project."

The Project includes the following elements (as per recommendations of the study entitled Lake Havasu City - North Regional Wastewater Sub Area Facilities Siting and Modeling Assessment, February 2024):

1. The proposed pumps (one duty and one redundant) at the Canterbury pump station will be 200 gallons per minute (gpm) each at 250 ft. head.
2. The proposed pumps (one duty and one redundant) at the Refuge pump station will be 400 gpm each at 350 ft. head.
3. The 8-inch Force Main extension is approximately 200 ft. connecting to the existing 24-inch force main at AZ-95 and Chenoweth Road. Isolation valves will be installed on the existing force main connecting the Canterbury and Refuge lift stations ("Lift Stations") to the Bombay Lift Station for emergency situations.
4. The highway crossing will utilize a jack and bore or similar approach with a casing pipe that encloses the 8-inch force main.
5. Design of upgrades to expand the capacity of the existing Lift Stations using the existing wet well and new pumps as indicated above.
6. Evaluate upgrades associated with a new primary electrical service (if needed) and coordination with Unisource for the Lift Stations based on the ultimate build-out capacities. This includes necessary permitting tasks with Unisource.
7. Demolition of any existing equipment after new equipment is installed.
8. Replacement of all on-site discharge pipe headers, check valves, flow meters with valves, isolation valves and instruments.
9. New plug valves in valve vault.
10. Backflow preventer and water line.
11. New control panel and Roof Top Unit (RTU) upgrades.
12. New wiring and conduit as needed.
13. Isolation Valves on the Force Main Connecting Lift Stations
14. Buried yard piping for inlet and discharge lines.
15. Preparation of construction cost estimates with various submittals

Design Phase Services (Items 1.1 and 1.2) to be provided as a Lump Sum Basis.

The Services are described in the following subtasks:

1.1 Provide Professional Engineering and Design Services to develop and produce Contract Documents and Specifications for the purpose of competitive Bidding and Construction of the Project.

A. Project Management and Quality Control – Assurances

Conduct discussions with designated City Staff. Provide Monthly status reports and conduct progress meetings and status calls.

B. Task 1 - Site Investigation and Base Mapping

The Consultant will conduct site visits and meet with the City's Project Manager and/or designated City staff to review the current facilities, request operational data, available land, piping layouts, review existing wet well and electrical equipment and any other constraints to constructing the improvements to the Lift Stations and the new 8-inch Force Main extension along Chenowith.

The Consultant will also coordinate the topographic survey of each lift station site areas, the force main extension, and proposed work to verify elevations, dimensions, and locations of buried piping, utilities, and structures. The survey will be used to develop a base map for the subsequent design of the improvements to the facilities.

C. Task 2 - Prepare Basis of Design Report

The Consultant will develop a report describing the basis of design criteria for all components of the infrastructure improvements for the Lift Stations and the 8-inch Force Main and the isolation valves. The report will include detailed costs for the infrastructure improvements and will be discussed with City staff in a workshop to review the infrastructure improvements and develop consensus on the recommendations. The approved basis of design report ("BODR") will be used for developing final design for the proposed improvements at the Lift Stations and the 8-inch Force Main. The proposed approach and alignment to the ADOT Highway crossing along Chenowith Road. will be identified. As part of the report, the Consultant will prepare a preliminary facility schematic and layout depicting the recommended facilities and equipment, including interconnects to all existing facilities at the site.

Key Design Issues: Design criteria will be established in the BODR for the following ancillary components of the Lift Station improvements:

- Instrumentation and probes.
- Ancillary facilities including piping headers, valves, and flow meters.
- Civil/site elements design and modifications.
- PLC and SCADA requirements for all components.

- Lift station equipment, piping, valves, instruments, and appurtenances, electrical panels and controls, pumps and slide rail system, and remote communications.
- Inlet piping size and alignment; and force main size and alignment.
- Site Layout: The Consultant will determine and confirm the preferred location for the improvements specific to the Lift Station equipment and support facilities, based on City input.
- Electrical Supply: The Consultant will review electrical service requirements for the existing and proposed rehabilitated facilities and determine the need for any service upgrades for these facilities.
- Operational Modes and Control Logic: The addition of improvements to the Lift Station facilities and wet well will result in modifications to the controls, instrumentation, SCADA system interface and programming control logic.

The Consultant will utilize the field investigations, and the relevant findings to develop site specific recommendations, develop control strategies, confirm electrical power requirements, and finalize the site layout. The Consultant will develop a design memorandum and 30% level design drawings, site plans, construction cost estimate and other necessary information so that City staff can review and comment on the preliminary design. The Consultant will conduct meetings and site walks with City staff to finalize the improvements for each Lift Station and Force Main Design Memorandums and concepts.

D. Task 4 - Design Drawings

Consultant will prepare design drawings for the Project that include engineering disciplines including General, Civil and Mechanical, Structural, Instrumentation, and Electrical. Consultant will submit review sets at the 60%, 90%, and 100% project levels.

Preliminary Sheet Count

- General Sheets (4) - Cover, Sheet Index and Abbreviations, Symbols, and General Notes
- Civil Sheets (11) – LS Site and Facilities Location Plans (2); Yard Piping Plans Inside sites (2); Force Main Plan and Profiles (2), ADOT Pipeline Crossing Details (Jack and Bore) (2), Isolation Valve details (1), and Civil Details (2)
- Mechanical Sheets (8) - Lift Station Overall Plans and Sections (2); Lift Station Typical Wet Well Sections and Details (2); and Lift Station Vault Details (2); Lift Station Piping Details (2 sheets)

- Structural Sheets (4) - Structural Plan and Sections for Canopies, Concrete Slab Details; Structural Details and General Notes
- Electrical Sheets (14) – General Notes; Symbols and Legend (2); Single Lines and Load Calcs. (2); Electrical Schedules (2); Site Power, Lighting and Grounding Plans (2); Schem./Connection Diagrams – RTU (2); Schem./Connection Diagram - Standby Generator & LS Control Panels (2); Conduit Block Diagrams (2) ; Standard Details - Sheet 1; Standard Details - Sheet 2
  - Instrumentation Sheets (3) - P&ID Symbols and Legend, P&IDs (2)

E. Task 5 - Project Specifications

Consultant will prepare written specifications to support the Lift Stations and the 8- inch Force Main design improvements. Consultant proposes progress review sets at 90% and 100% levels of the Project. Consultant will prepare complete Project specifications including technical and administrative divisions. The specifications will consider construction schedules, coordination of any anticipated shutdowns, required best management practices for construction, material and installation specifications, and the use of regional and industry standards for the design performed under Task 3.

F. Task 6 – Building and Construction Related Permits

The Consultant will assist the City in obtaining necessary permits and approvals relative to any related to right-of-way (ROW) Permits, ADOT Construction, and Building Permits.

The Consultant will coordinate with the City and any Regulatory Agencies to obtain any design and construction related approvals. This task will include preparing forms, transmitting design information and drawings, and preparing correspondence.

G. Task 7 - Bid Phase Assistance

For the Project, the Consultant will provide post-design assistance to the City during the bidding process. This will include preparing and transmitting bid documents, responding to bidders' inquires, addenda preparation, and validation of bids. The purpose of these services is to facilitate interactions between the City and prospective construction contractors in obtaining construction bids on the Project.

I. Task 8 - Design Phase Meetings

Consultant anticipates four design phase meetings with City staff will be needed to complete this Project. The Consultant will provide meeting support and documentation as needed for these meetings.

1.2 Engineering and Design Service Deliverables. LUMP SUM BASIS.

A. Basis of Design Report.

B. Contract Documents and Technical Specifications.

C. Design Drawings, Submittals and Review.

30%, 60% and 100% Design Submittals.

D. Project Specifications, Construction and Building Related Permits

2. Schedule. The Services will commence upon a fully executed Agreement and an overall 6-month Project schedule for completion, at which point the Project can be bid for construction.