Ivins City
Request for Proposals for
Engineering Services
for design of
Pump Station Upgrades

Ivins City, Utah is soliciting letter proposals from qualified engineers to provide services as outlined in the **Scope of Services** section of this request.

I. Background:

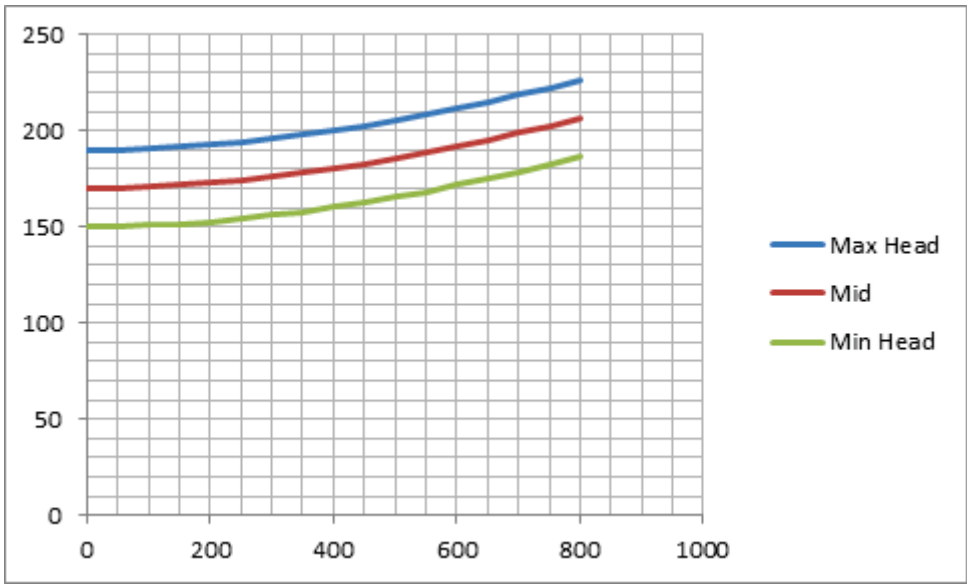
Ivins City needs to upgrade two in-line pump stations, the Taviawk Pump Station and the Tuacahn Pump Station. The Taviawk Pump Station is in need of immediate improvement during this winter season due to problems in keeping up with demands. The Tuacahn Pump Station is in need of an additional pump for redundancy, but its installation is not critical and the City may not have budgeted enough for the work. All pump stations need to be switched to a SCADA control system rather than the pressure switches and manual controls that are currently used, however, the instrumentation and SCADA design will not be part of this design work.

A. Taviawk Pump Station

Ivins City desires to upgrade the Taviawk Pump Station as follows:

	Number of Pumps	Pump Size (INCHES)	Capacity of Individual Pumps (GPM)	Total Capacity (GPM)	Power (individual) (HP)	Power Supply
Existing	2	1.5	125	180	10	230V Single Phase
Proposed Upgrade	3	3	260	480 (with one pump out)	30	Three Phase (Voltage to be determined)

The following is an estimate of the Taviawk design curves:



Taviawk System Data:

Peak Day Demand:	Current: 180 gpm	Future: 450 gpm
Minimum NSPHa:	47.2 feet	
Pump Elevation:	3252 feet	
Suction Head Elev:	3270 feet to 3295 feet	
Total Static Head Elev:	3460 feet to 3440 feet	
Total Dynamic Head:	see system curve shown above	

The Taviawk Pump Station is a buried vault (inside dimensions: 8'W x 12'L x 7'D) located at Taviawk Dr/Tearasinab Dr. As indicated above the site currently is not connected to three-phase power, but it can be obtained from a power node 300 feet south and east from the vault. The upgrade should utilize the existing vault unless not possible. An existing power control panel is located adjacent to the vault. The panel however is causing sight obstruction for vehicles at the intersection and needs to be moved. It may not be possible to move the panel without demolishing it and rebuilding from scratch. The new panel should be of similar height and build to match surroundings and to provide for a SCADA antenna mount. If possible it would be preferred to move all controls into the above ground panel. The City would prefer for most controls to be above ground if possible.

One of the problems of the current pump station is in low head conditions the pumps are running high amperage and damaging the electric motors. The new design would need to be robust so that such problems do not occur. The existing pumps in the station are controlled with a pressure switch located in the pump station. The future design should not use the pressure switch as the primary mode of function and instead include the installation of SCADA monitoring and controls so that actual tank levels can be used to control the pump operation. The new design should also upgrade the facility to include forced air venting.

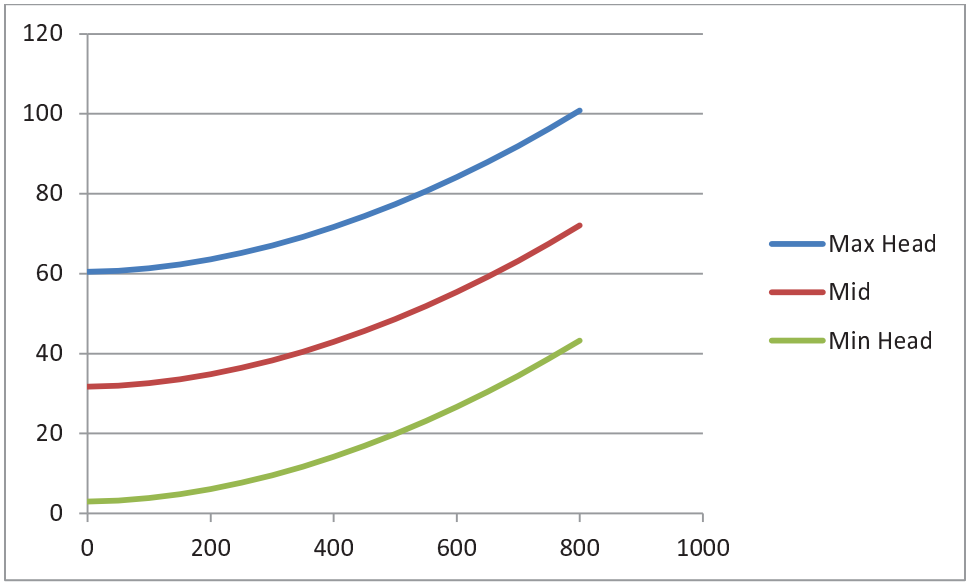
B. Tuacahn Pump Station

Ivins City desires to upgrade the Tuacahn Pump Station as follows:

	Number of Pumps	Pump Size (INCHES)	Capacity of Individual Pumps (GPM)	Total Capacity (GPM)	Power (individual) (HP)	Power Supply
Existing	1	2	170	170	10	480V 3Ph
Proposed Upgrade	2	2	170	320	10	480V 3Ph

This upgrade would allow the use of the existing pump but would add a secondary pump and require reconfiguration of the piping in the vault (inside dimensions 10'8"Wx10'8"Lx6'H).

The following is an estimate of the Tuacahn design curves:



Tuacahn System Data:

Peak Day Demand:	Current: 70 gpm	Future: 155 gpm
Minimum NSPHa:	170 feet	
Pump Elevation:	3145 feet	
Suction Static Head Elev:	3292 feet to 3312 feet	
Discharge Static Head Elev:	3352.5 feet to 3315 feet	
Total Dynamic Head:	see system curve shown above	

The system curves show that there is a potential to run the pump too fast also, so the revised design should address this problem. Also there is a consideration of replacing the existing steel 35-ft tall tank with a 20-ft rectangular concrete design for the Tuacahn/Sentierre future developments. The base level would stay the same but it might impact what pump is selected.

C. Ivins City SCADA

The following background information is provided regarding the City SCADA system. Ivins City currently uses a ClearSCADA HMI Server setup with ClearSCADA ViewX software located at the Public Works Building (460 N 200 W). The SCADA system communicates with all of the water tanks in the system using radio. A radio repeater has been setup on the sewer pump station located at Fitness Way (800 South) and 400 West to enable direct line of sight radio communication. Each of the tank sites are communicating water level information and hatch information to the SCADA system. The individual tank sites use SCADAPack devices for PLC/RTU functions. The City however, desires to move away from the proprietary SCADAPack devices and use more generic interchangeable brands such as GE or Twido.

D. Data Provided by City

The following data will be provided by the city:

- GIS Data (waterlines, tanks, pumps, valves)
- Masterplan data
- Preliminary pump station design calculations
- System pressure data (City has a digital hydrant pressure monitoring gauge and will provide measurements as requested by design consultant)

II. Scope of Services:

A. Kickoff Meeting
B. Review hydraulics and site information
C. 50% Design
    a. Recommended Pump Layout
    b. System Curve Data and Calculations
    c. Recommended Pump Selection
    d. Cost Estimates
D. Prepare Design Drawings and Technical Specifications ready for bidding - 100% Complete
E. Make revisions for Final Bid Set as directed by City
F. City will incorporate the technical specifications prepared by the consultant into the contract binder and coordinate all bidding services with limited followup from consultant for questions.
G. City will provide construction administration and inspection with the consultant providing construction engineering services limited to attendance of preconstruction meeting and minor follow up with questions or field changes.

The following drawings are needed:

- Title sheet
- Taviawk Site Plan
- Taviawk Piping/Pump Layout Plan (1 or 2 sheets)
- Taviawk Electrical Plan

- Tuacahn Site Plan
- Tuacahn Piping/Pump Layout Plan (1 or 2 sheets)
- Tuacahn Electrical Plan
- Detail Sheets (as needed)

Scope does not include instrumentation/SCADA design except to identify location and size of panels. This will be performed by a separate contract although coordination will be expected.

III. Contracting and Compensation for Services:

Ivins City intends to enter into a professional services contract with the successful engineer. The terms of the Ivins City standard contract are attached to this document. Compensation for the services rendered is to be based upon a time-expended basis with an agreed maximum not to exceed value. The consultant must be willing to sign the attached engineering services contract.

IV. Schedule

The City would like to execute the project according the schedule below:

11/12/14:	Proposals Due
11/20/14:	City Council Approves Design Expenditure
12/1/14:	Contracts signed hold Kickoff Meeting
	50% Design-2 weeks
	If necessary pre-order pump and other long lead items.
	100% Design-1.5 weeks
	Final Design-1.5 weeks
1/8/15:	Start Advertising for Construction Bids
1/27/15:	Open Construction Bids
2/5/15:	City Council Approves Construction Expenditure
	Start Construction

V. Proposal Letter Format and Content

The proposal shall be in a letter format with company letter head and shall consist of no more than two pages and shall identify the following information: description of team, brief description of approach, and a statement of commitment to the proposed schedule. Please attach a separate cost proposal sheet with the following information:

- Cost to complete the Taviawk Pump Station Design
- Optional additive cost to complete the Tuacahn Pump Station Design
- Include estimated hours spent by each team member on each task, billing rates, direct costs.

Qualifications and experience are not necessary in the proposal, as this RFP is only being submitted to a short list of qualified firms.

VI. Submittal Requirements

Submit letter proposal by email to Chuck Gillette, P.E., City Engineer at cgillette@ivins.com by 3:00 p.m., Wednesday, November 12, 2014.