

CITY OF ANN ARBOR
REQUEST FOR PROPOSAL



**WATER TREATMENT PLANT
WEST HIGH SERVICE ELEVATED STORAGE TANK PROJECT**

RFP No. 913

Due Date:
Tuesday, October 21, 2014
On or Before 2:00 P.M. (Local Time)

CITY OF ANN ARBOR WATER TREATMENT SERVICES UNIT
Administering Services Unit

Issued By:
City of Ann Arbor, Michigan
Procurement Unit on behalf of Public Services Area
301 E. Huron Street
Ann Arbor, MI 48104

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SECTION 1: INSTUCTIONS TO RESPONDENTS

OBJECTIVE

The City of Ann Arbor is soliciting proposals for the West High Service Elevated Storage Tank Project. This project focuses on designing a new elevated storage tank to serve the City's West High Service pressure district. Also included is appropriate instrumentation and telemetry to monitor water level, intrusion, and tampering, as well as provisions for cellular antenna services.

QUESTIONS OR CLARIFICATIONS OF RFP REQUIREMENTS

All questions regarding this RFP shall be submitted via email. Emailed questions and inquiries will be accepted from any and all prospective Respondents in accordance with the terms and conditions of this RFP.

All questions shall be submitted on or before Tuesday, October 14, 2014 by 5:00 P.M. (Local Time) and should be addressed as follows:

Scope of Work/Proposal Content questions emailed to gwiczorek@a2gov.org
RFP Process and HR Compliance questions emailed to mberryman@a2gov.org

Should any prospective Respondent be in doubt as to the true meaning of any portion of this Request for Proposal, or should a prospective Respondent find any ambiguity, inconsistency or omission therein. The Respondent shall make a written request for an official interpretation or correction. Such requests must be submitted via email to mberryman@a2gov.org.

All requests for Clarification are due on or before Tuesday, October 14, 2014 by 5:00 P.M. (Local Time)

The person making the request shall be held responsible for delivery and verification of receipt.

PRE-PROPOSAL MEETING

A pre-proposal meeting will be conducted beginning at the **City of Ann Arbor Water Treatment Plant located at 919 Sunset Road, Ann Arbor, MI 48103 at 10:30 A.M. on Wednesday, September 24, 2014.** At the completion of the meeting, the Proposers will have the opportunity to visit the proposed tank location to familiarize themselves with the site and the existing conditions. Attendance at this meeting and site visit is highly recommended.

ADDENDUM

All interpretation or correction, as well as any additional RFP provisions that the City may decide to include, will be made only as an official addendum that will be posted to Michigan Inter-governmental Trade Network (MITN) www.mitn.info and the City of Ann Arbor web site www.a2gov.org for all parties to download.

It shall be the Respondent's responsibility to ensure they have received all addendums before submitting a proposal. Any addendum issued by the City shall become part of the RFP and will be incorporated in the proposal.

Each Respondent must in its RFP, to avoid any miscommunications, acknowledge all addenda which it has received, but the failure of a Respondent to receive, or acknowledge receipt of; any addenda shall not relieve a Respondent of the responsibility for complying with the terms thereof.

The City will not be bound by oral responses to inquiries or written responses other than written addenda.

PROPOSAL SUBMISSION

All Proposals are due and must be delivered to the City Procurement Unit on or before **Tuesday, October 21, 2014 by 2:00 P.M. (local time)**. Proposals submitted late or via oral, telephonic, telegraphic, electronic mail or facsimile **will not** be considered or accepted.

Each Respondent must submit one (1) original Proposal, and four (4) additional Proposal copies. Five (5) copies of the Proposal Fee shall be submitted in a separate sealed envelope contained within the Respondents sealed proposal. Proposal submitted must be clearly marked: **The City of Ann Arbor RFP #913 Water Treatment Plant West High Service Elevated Storage Tank Project and then list Respondents name and address.**

Proposals must be addressed and delivered to:

City of Ann Arbor
C/O Customer Service Department 1st Floor
Procurement Unit, 5
301 East Huron Street
P.O. Box 8647
Ann Arbor, MI 48104

All Proposals received on or before the Due Date will be publicly opened and recorded immediately. No immediate decisions are rendered.

Hand delivered Proposals will be date/time stamped/signed by the Procurement Unit at the address above in order to be considered. Normal business hours are 9:00 a.m. to 3:00 p.m. Monday through Friday, excluding Holidays. The City will not be liable to any Respondent for any unforeseen circumstances, delivery or postal delays. Postmarking on the Due Date will not substitute for receipt of the Proposal. Each Respondent is responsible for submission of their Proposal.

Additional time will not be granted to a single Respondent; however, additional time may be granted to all Respondents when the City determines that circumstances warrant it.

A Proposal will be disqualified if the Fee Proposal is not contained within a separate sealed envelope.

PROPOSAL TERMS AND REQUIREMENTS

The City reserves the right to reject any and all proposals, to waive or not waive informalities or irregularities in the response procedures, and to accept or further negotiate cost, terms, or conditions of any proposal determined by the City to be in the best interest of the City. All agreements resulting from negotiations that differ from what is represented within the RFP or in

the Respondent's response shall be documented and included as part of the final contract.

Proposals must be signed in ink by an official authorized to bind the Respondent to its provisions for at least a period of one hundred eighty (180) days from the due date of this RFP. Failure of the successful respondent to accept the obligation of the contract may result in the cancellation of any award.

In the event it becomes necessary to revise any part of the RFP, Addenda will be provided. Deadlines for submission of RFP's may be adjusted to allow for revisions.

Proposals should be prepared simply and economically providing a straightforward, concise description of the Respondent's ability to meet the requirements of the RFP. Proposals shall be written in ink or typewritten. No erasures are permitted. Mistakes may be crossed out and corrected and must be initialed in ink by the person signing the proposal. The proposal shall be no more than **40 pages total** in length (20 sheets double-sided including resumes but, not including Legal Status of Respondent, Contract Compliance and Living Wage forms). Proposals should not include any plastic covers, binders, or other non-recyclable materials. Fee proposals must be submitted in a separate sealed envelope at the same time. All envelopes for technical proposal and separate fee proposals must be clearly marked "**City of Ann Arbor RFP #913, Water Treatment Plant West High Service Elevated Storage Tank Project**".

All proposals become the property of the City of Ann Arbor once reviewed, whether awarded or rejected.

To be considered, each Respondent must submit a response to this RFP using the format provided in Section 3. No other distribution of proposals is to be made by the respondent. Respondents must submit five (5) copies of the Proposal fees in a separate sealed envelope. Price Quotations stated in the Fee Proposal will not be subject to any price increase from the date on which the proposal is opened by the City to the mutually agreed date of contract expiration.

All information in a respondent's Proposal is subjected to disclosure under the provisions of Public Act No. 442 of 1976 known as the "Freedom of Information Act". This act also provides for the complete disclosure of contracts and attachments thereto except where specifically exempted under the Freedom of Information Act.

The selected Respondent will be required to provide the City of Ann Arbor an IRS form W-9 before a payment order can be issued.

The City is tax exempt from all taxes. The Respondent, if awarded a contract for this work, shall be responsible for all "sales taxes" and "use taxes" as applicable to this work.

SELECTION CRITERIA

Responses to this RFP will be evaluated using a point system, described in Section 3. The evaluation will be completed by a Selection Committee composed of staff members from various units of the City.

At the initial evaluation, the fee proposals will not be reviewed. The initial evaluation is to determine which, if any, Respondents are to be interviewed. Respondent fee proposals will only be opened for Respondents selected for interview, if the City elects to conduct interviews.

If the City elects to interview Respondents, during interviews, selected Respondent(s) will have the opportunity to discuss in more detail their qualifications, experience, proposed work plan, and fee proposal during the interview process. The City of Ann Arbor further reserves the right to interview the key personnel anticipated to be assigned if the firm is selected. To decide the most qualified, capable and cost-effective Respondent, the Selection Committee will evaluate the proposal(s) and interview(s) using the point system described in Section 3 of this RFP.

INTERVIEW

The City has the right to request interviews with selected Respondents when necessary. The selected Respondents will be given the opportunity to discuss in more detail their qualifications, past experience, proposed work plan and fee proposal. The interview must include the project team members expected to complete a majority of work on the project, but no more than 4 members total. The interview shall consist of a presentation by the Respondent, including the person who will be the project manager on this Contract, followed by questions and answers. Audiovisual aids may be used during the oral interviews. The oral interviews may be recorded on tape by the Evaluation Team.

If the City chooses to interview any respondents, the interviews will be held in November, 2014. Respondents selected for interview will be expected to be available that week.

TYPE OF CONTRACT

Consultants selected to do business with the City of Ann Arbor will be required to execute the standard Professional Services Agreement with the City (a sample agreement is included with this RFP as Appendix A). Those who wish to submit a proposal to the City are required to carefully review the Professional Services Agreement. Respondents should specifically note that the insurance requirements under a City contract are listed in Exhibit C of the sample contract. **The City will not entertain requests to revise, amend, or change the language of the standard Professional Services Agreement** except where necessary to incorporate the scope of services and compensation for same as awarded. Respondents must base their proposal on the assumption that, if selected, they will execute the Professional Services Agreement.

COST LIABILITY

The City of Ann Arbor assumes no responsibility or liability for costs incurred by a respondent prior to the execution of a Professional Services Agreement. The liability of the City is limited to the terms and conditions outlined in the Agreement. By submitting a proposal, Respondent agrees to bear all costs incurred or related to the preparation, submission and selection process for the proposal.

SCHEDULE

The following is the solicitation schedule for this procurement.

Activity/Event	Anticipated Date
Pre-Proposal Meeting	Wednesday, September 24, 2014 @ 10:30 A.M.
Proposal Due Date	Tuesday, October 21, 2014 @ 2:00 P.M.
Interview Consultants (if applicable)	November, 2014
Consultant Selection/Negotiate Scope of Professional Services Agreement (PSA)	December, 2014
PSA Execution, Notice of Award	February, 2015
Notice to Proceed (approximately)	March, 2015

Note:

¹The above schedule is for informational purposes only, and is subject to change at the City's discretion.

²Contracts valued in excess of \$25,000.00 require City Council approval.

Proposals submitted shall define an appropriate project schedule in accordance with the requirements of the proposed work plan. The final schedule will be negotiated based on the final scope of work and work plan agreed to by the City and the selected firm.

AWARD PROTESTS

All Proposal protests must be in writing and filed with the Purchasing Agent within five (5) business days of the award action email. The Respondent must clearly state the reasons for the protest. If a Respondent contacts a City Service Area/Unit and indicates a desire to protest an award, the Service Area/Unit shall refer the Respondent to the Purchasing Agent. The Purchasing Agent will provide the Respondent with the appropriate instructions for filing the protest. The protest shall be reviewed by the City Administrator or designee whose decision shall be final.

DEBARMENT

Submission of a Proposal in response to this RFP is certification that the Respondent is not currently debarred, suspended, proposed for debarment, and declared ineligible or voluntarily excluded from participation in this transaction by any State or Federal departments or agency. Submission is also agreement that the City will be notified of any changes in this status.

HUMAN RIGHTS INFORMATION

Article VI of the City's standard Professional Services Agreement, outlines the requirements for fair employment practices under City of Ann Arbor contracts. To establish compliance with this requirement, the Respondent should complete and return with its proposal completed copies of the Human Rights Division Contract Compliance Forms attached as Attachment C. In the event Human Rights forms are not submitted with the proposal, a respondent will have 24 hours to provide once requested by the City.

LIVING WAGE INFORMATION

All respondents proposing to do business with the City of Ann Arbor, except those specifically exempted by regulations promulgated by the Administrator and approved by City Council, agree to comply with the living wage provisions of Chapter 23 of the Ann Arbor City Code and, if a "covered employer" as defined therein to pay those employees providing services to the City under this agreement a "living wage" as defined in Chapter 23 of the Ann Arbor City code; and, if requested by the City, provide documentation to verify compliance. Respondent agrees to comply with the provisions of Section 1:1815 of Chapter 23 of the Ann Arbor City Code. The Declaration of Living Wage form (Attachment D) should be submitted with the proposal. In the event it is not, a Respondent will have 24 hours from the City's request to return the completed form.

NON-DISCLOSURE AGREEMENT

The consultant selected for this work will be requested to sign a Non-Disclosure Agreement. A sample agreement is included with this RFP as Appendix B.

INDEPENDENT FEE DETERMINATION

1. By submission of a proposal, the respondent certifies, and in the case of joint proposal, each party thereto certifies as to its own organization, that in connection with this proposal:
 - a) They have arrived at the fees in the proposal independently, without consultation, communication, or agreement, for the purpose of restricting competition as to any matter relating to such fees with any other proposal respondent or with any competitor.
 - b) Unless otherwise required by law, the fees which have been quoted in the proposal have not been knowingly disclosed by the respondent and will not knowingly be disclosed by the respondent prior to award directly or indirectly to any other prospective respondent or to any competitor.
 - c) No attempt has been made or shall be made by the proposal respondent to induce any other person or firm to submit or not submit a proposal for the purpose of restricting competition.
 - d) Each person signing the proposal certifies that she or he is the person in the proposal respondent's organization responsible within that organization for the decision as to the fees being offered in the proposal and has not participated (and will not participate) in any action contrary to 1.a), b), or c) above.

2. A proposal will not be considered for award if the sense of the statement required in the Fee Analysis portion of the proposal has been altered so as to delete or modify 1.a), c), or 2 above. If 1.b) has been modified or deleted, the proposal will not be considered for award unless the respondent furnishes with the proposal a signed statement which sets forth in detail the circumstances of the disclosure and the Issuing Office determines that such disclosure was not made for the purpose of restricting competition.

RESERVATION OF RIGHTS

1. The City of Ann Arbor reserves the right to accept any Proposal or alternative Proposal proposed in whole or in part, to reject any or all Proposals or alternatives Proposals in whole or in part and to waive irregularity and/or informalities in any Proposal and to make the award in any manner deemed in the best interest of the City.
2. The City reserves the right not to consider any Proposal which it determines to be unresponsive and deficient in any of the information requested within the RFP.
3. The City reserves the right to determine whether the scope of the project will be entirely as described in the RFP, a portion of the scope, or that a revised scope be implemented.

SECTION 2 BACKGROUND AND SCOPE OF WORK

A. BACKGROUND

The City of Ann Arbor Water System is divided into five pressure districts. With the exception of the Gravity and West High Service Districts (WHS), each district is served by an elevated water storage tank for pressure control. It is the City's intent to construct an elevated water storage tank in the West High Service District to strengthen system reliability and improve pressure control and service for customers in this district.

The West High Service District currently includes ground elevations that vary between 830 feet MSL and 1016 feet MSL. The average day demand for this district ranges between 3.6 and 7.3 MGD seasonally, with a peak hour demand of 17.4 MGD. In addition to residential and small commercial customers in this district, major customers served by this district include two high schools and Scio Township. Scio Township's water system is isolated from the City's system by backflow prevention devices. The Township has an elevated storage tank for pressure regulation.

The WHS district includes a remote pump station, namely the Liberty Pump Station. The Liberty Pump Station includes an underground concrete reservoir (3 million gallons).

The City conducted a preliminary investigation into the need and feasibility for the project in 2011 as part of the West High Service Pump Replacement Project. A report was completed that modeled the addition of a tank, identified a preferred location, and determined preferred sizing. The model was performed in InfoWater. This report is included as Appendix C to this RFP.

The preferred location of the proposed tank is at the Liberty Pump Station and Reservoir site. The site is owned by the City and is zoned as "public land".

B. SCOPE OF WORK

The Consultant will be responsible for studying, designing, and overseeing bidding and construction of a new elevated water tank for the West High Service District. The study and design should include confirming the location of the proposed tank, identifying and resolving any zoning or land use issues associated with placing a tank at the preferred location, leading a public engagement program, and developing design documents for bidding and construction of an elevated water tank. Any associated infrastructure to connect the elevated water tank to the water distribution system such as water main, valves, and vaults shall be included. In addition, telemetry for monitoring water system pressures and elevation, water system security, provisions for cellular installations on the water tower, and site improvements (e.g., access road, stormwater management, fencing, etc.) shall be included.

C. REQUIREMENTS

The selected design firm shall complete the following work:

Study

1. Conduct kick off meeting with Plant Staff to determine staff performance goals associated with proposed improvements. This meeting should be used to identify a list of required and recommended improvements for later prioritization.
2. Review 2011 West High Service Pump Replacement Project Report, modeling results, and recommendations to confirm preliminary design criteria for elevated water tank.
3. Make recommendations to modify design criteria for size and elevation of the proposed elevated water tank, if applicable. Criteria should include pros and cons of design criteria modifications.
4. Review model outputs for final design conditions, including but not limited to minimum day, average day, maximum day, maximum hour, and fire flow demands. Existing analyses include water age, tank turnover, and tank levels. Consultant shall complete any additional analyses deemed important for determining the final tank size, elevation, and location. It shall be the Consultant's responsibility to replicate any model outputs that could impact the design conditions that they deem necessary. Design conditions shall include the possibility of operating the East High Service and West High Service as combined districts.
5. All modeling should be performed in InfoWater per City Standards.
6. Evaluate alternative types of tanks that meet proposed design criteria and develop a matrix of pros/cons/costs associated with the alternatives.
7. Perform soil borings and prepare geotechnical report. Coordinate geotechnical report requirements with the tank manufacturer's (number, depth and placement of borings, analysis, etc.).
8. Evaluate the merits of Cathodic protection of the elevated tank. Design of provisions to accommodate Cathodic protection, if recommended.
9. Coordinate with telecom companies. Incorporate any requirements from the telecom companies for antenna equipment.
10. Review impacts on Liberty Pump Station performance in conjunction with the proposed elevated tank. Review of existing pump curves/TDH. Evaluate potential improvements to the Liberty Pump Station such as the addition of VFDs, electrical improvements, piping modifications, etc. Design necessary improvements to Liberty pump station to accommodate the proposed elevated tank.
11. Review of Liberty Pump Station underground reservoir performance in conjunction with the elevated tank, water quality, and potential short circuiting between the tanks.
12. Review of WHS high services pump performance in relation to the proposed elevated tank. Review operating pressures, impeller size and pump curves.

13. Model and evaluate EHS high service pumps ability to fill elevated tank and operate WHS district pressures.
14. Develop sequence of operations for Liberty Pump Station, Reservoir and Elevated Tank including but not limited to:
 - Filling of elevated tank and reservoir
 - winter operations (water levels and ice)
 - Eisenhower Boundary valve setting
 - Tank fill times in regards to peak demands and electrical peak shaving periods
15. Develop and execute a public engagement plan that will engage local neighborhood associations, Scio Township, and residents to obtain their input on the proposed project and address their concerns.
16. The public engagement plan shall involve working with the City public art coordinator and community art stakeholders as it is anticipated that the City will incorporate public artwork on the new water tower. Provide periodic updates to the Art Commission.
17. Develop and submit conceptual materials to the Planning Commission and other City departments for preliminary comment. Items include, but are not limited to, renderings, conceptual site layout, project description, etc.
18. Conduct appropriate progress meetings during this study phase to capture City staff input.
19. Deliverable for this task should be a short report that includes:
 - a. Summary of design recommendations based on 2011 West High Service Pump Replacement Project Report and any proposed modifications.
 - b. Model runs and associated analyses
 - c. Public Engagement Plan
 - d. Conceptual materials to the Planning Commission
 - e. Geotechnical Report
 - f. Summary of additional components to be included in design project including but not limited to: instrumentation, civil and site work, cellular accommodations, communication requirements, and security requirements.
 - g. Preliminary cost estimate for proposed improvements as defined by AACE (+50,-30). Cost estimate should be sufficiently itemized and detailed to enable the City to prioritize the proposed improvements.
 - h. Proposed schedule for design and construction incorporating lead times and preferred construction season.

Design

1. Incorporate feedback and comments from the City on the preliminary design report and develop biddable plans and specifications for construction of the selected alternative.
2. Perform detailed design of civil, architectural, structural, process, mechanical, electrical, instrumentation and controls, safety components and related work. Detailed design shall include security system and telemetry compatible with the City's existing systems.
3. Incorporate City input on the design and selection of components.

4. Proposed instrumentation and telemetry shall meet the City's existing standards.
5. Conduct routine progress meetings throughout the design phase to obtain City input at an appropriate frequency.
6. Provide interim deliverables as needed to meet the City's design expectations (e.g., 30%, 60% and 90% design documents).
7. Provide all meeting agendas, minutes, and facilitation.
8. Provide a design package that includes the following: specifications in CSI format, construction schedule in Microsoft Project 2007, and design drawings for all construction and activities. A final cost estimate (+15,-5) shall be prepared at the 90 percent design phase.
9. Provide preliminary plans for review by the Planning & Development, Fire Department, and other City departments as necessary in the early planning stages of this project. The comments from these units shall be incorporated.
10. Prepare and submit any applicable MDEQ and FAA permits, applications.
11. Prepare application, submit to Planning Commission, attend Planning Commission meetings, and incorporate all comments. The Planning Commission will require that the design comply with the City Standards and to the requirements of a typical private development in all regards, including but not limited to, landscaping, parking, access, lighting, fire protection, paving, stormwater management, etc.
12. Design documents shall comply with the most recent City Code of Ordinances.
13. Provide hard and electronic copies of the drawings and specifications for bidding. Electronic copies of the specifications shall be both in MS Word 2007 and as a PDF. Electronic copies of the drawings shall be in both AutoCAD 2013 and as a PDF. The City shall provide the Division 0 specifications and front end template to the Consultant for editing. The selected design firm shall be responsible for reproduction of the drawings and specifications for use by the City and Contractor during construction.

Construction Management

1. Provide technical assistance to the City in obtaining bids and assist in awarding contracts for construction (prepare contract documents for execution, review insurance and bonds, prepare notice to proceed, etc.).
2. Prepare addenda to bid documents if needed.
3. Conduct pre-bid, pre-construction, monthly progress, special and project closeout meetings.
4. Interpret the drawings and specifications as required and make judgments on the conformity of construction with drawings and specifications, inspect the work to observe general quality and notify the Contractor and the City of any work not in conformance.

5. Review and track all project submittals, review change order requests, address RFIs, generate punch list at completion of project.
6. Provide appropriate level of support during start-up of new equipment. Support shall include time for troubleshooting, on-site testing, and operational support once the installation is complete.
7. Provide a resident engineer for oversight of construction. The resident engineer shall be responsible for coordination of the work and all communications with the contractor.
8. Provide testing services including but not limited to, surface preparation acceptance, environmental conditions, dry film thickness and holiday testing to ensure final product is compliant with applicable AWWA and manufacturer standards. The testing services shall be performed by a firm possessing the certifications and experience in testing the re-coating of a minimum of 5 elevated potable water tanks in the last 10 years.
9. Coordinate the final bacteriological testing to ensure tank meets applicable AWWA standards for placing back into service.
10. Provide record drawings in the following formats: electronic version on CD in AutoCAD 2013 and PDF (drawings as individual files), two full-size hard copies and two 11 x 17 hard copies. Provide an electronic copy of all specifications in Microsoft Word and pdf.

Operation and Maintenance Guidelines & Training

1. Prepare written operational and maintenance guidelines (including standard operating procedures) for all system modifications. There shall be three operational training sessions at multiple times on non-contiguous days due to the constraints of shift work schedules and affected staff. Training sessions shall be conducted by the Consultant and include appropriate contractor and vendor support as needed.
2. Provide four tabbed copies of the manual in three-ring binders. Provide an electronic version of the manual on CD in a menu-driven, hypertext, searchable, digital format. Text and diagrams shall be included in both hard copies and the electronic version. Format for O&M manual shall be consistent with web-based standard developed by the Water Treatment Plant.

Deliverables

Identify all planned deliverables as part of proposal in tabular format and as milestones in the project schedule.

At a minimum, deliverables shall include:

1. All meeting minutes, agendas, presentations, schedules, memoranda in electronic format (Microsoft products);
2. Preliminary Design Report (including model results) in electronic format (PDF and Microsoft Word) and hard copy (5 copies);

3. Bid specifications in electronic format (Microsoft Word and PDF) and hard copy (5 copies comb bound per City Standard); and
4. Design drawings in electronic format and hard copy (electronic in AutoCAD 2013 and PDF, plus 4 full-size and 3 half-size hard copies).
5. Record drawings in electronic format and hard copy (electronic in AutoCAD 2013 and PDF, plus 2 full-size and 2 half-size hard copies).
6. Any applicable MDEQ and FAA permit applications and City of Ann Arbor Planning Commission submittals in electronic and hard copies.
7. Model runs in InfoWater.

Assumptions and Expectations from City Staff

Proposal shall address the following:

1. Identify all assumptions that could impact proposed fee for work to be performed.
2. Identify expectations for work to be performed by City staff. Organize in a tabular format that includes tasks, staff members, and estimated time commitment. This should include estimated review times for deliverables, participation in project meetings, site inspections, and other tasks as deemed appropriate.
3. Identify any information or resources to be provided by the City to the Consultant.

Project Schedule

1. Provide a detailed project schedule by task with logical ties, percent complete, critical path, and status. Schedule shall include relevant tasks from study phase through completion of construction. Project schedule shall be updated monthly during the course of the project, and submitted with monthly invoices. Schedule shall be completed in Microsoft Project 2007 software and submitted electronically as well as in color hard copy.
2. Include proposed schedule with project milestones and deliverables as part of the proposal submittal package. The project schedule shall reflect the entire project from study/design through the completion of construction. Note that the City Staff will require four weeks to review all submittals by the design firm, including the final version of the bid documents prior to approval. Assume bid documents will be advertised for four weeks, and that contract award will take 12 weeks, for initial schedule.
3. The schedule shall include the Proposers estimated timeframe for public engagement and coordination of artwork.
4. The City expects to grant notice-to-proceed approximately March 2015.

Intent of Proposed Scope

Additional work necessary to meet the intent of the proposed scope of work should be included in Proposals. Alternate solutions or methods to items presented in the Work Plan Components section are encouraged and will be considered.

Fee and Level of Effort

Include Level of Effort (LOE) and fee estimate. LOE should be included in main body of proposal while Fees are sealed in a separate envelope. Fees and LOE shall be broken down into the discrete tasks identified in this RFP for easy evaluation by the City. Fees shall include future salary adjustments anticipated over the contract period if applicable.

The LOE shall include a description of the resident engineer's frequency of visits and duration of visits. The LOE shall be tied to the Proposer's estimated project schedule.

**SECTION 3:
MINIMUM INFORMATION REQUIRED
EVALUATION CRITERIA**

Respondents should organize Proposals into the following Sections:

- A. Professional Qualifications
- B. Past Involvement with Similar Projects
- C. Proposed Work Plan
- D. Fee Proposal (include in a separate sealed envelope)
- E. Authorized Negotiator
- F. Attachments

The following Section describes the elements that should be included in each of these proposal sections and the weighted point system that will be used for evaluation of the proposals.

A. Professional Qualifications – 15 points

1. State the full name and address of your organization and, if applicable, the branch office or other subordinates that will perform, or assist in performing, the work hereunder. Indicate whether it operates as an individual, partnership, or corporation. If as a corporation, include the state in which it is incorporated. If appropriate, indicate whether it is licensed to operate in the State of Michigan.
2. Include the number of executive and professional personnel by skill and qualification that will be employed in the work. Show where these personnel will be physically located during the time they are engaged in the work. Indicate which of these individuals you consider key to the successful completion of the project. Identify only individuals who will do the work on this project by name and title. Resumes or qualifications are required for proposed project personnel who will be assigned to the project. Qualifications and capabilities of any sub-consultants must also be included.
3. State history of the firm, in terms of length of existence, types of services provided, etc. Identify the technical details which make the firm qualified for this work.

B. Past involvement with Similar Projects - 35 points

The written proposal must include a list of specific experience in the project area and indicate proven ability in developing detailed designs and implementing similar projects for the firm and the individuals to be involved in the project. The proposal must also indicate proven ability to have projects completed on time and within the budgeted amounts. A complete list of client references must be provided for similar projects recently completed. The list shall include firm/agency's name, contact name, project title, owner name, address, and phone number.

The proposal must include examples of projects designed by staff proposed to work on this project. Examples should include new elevated water tanks sized between 500,000 gallons and 2 MGD, including associated public engagement. A summary of related projects with the original deadline and cost estimate versus the actual design completion date and final cost of the design shall be included. A list of three (3) client references must be provided for

similar projects recently completed. It shall include the firm/agency name, address, telephone number, project title, and contact person.

C. Scope of Work Outline - 35 points

A detailed work plan is to be presented which lists all tasks determined to be necessary to accomplish the work of this project. The work plan shall define resources needed for each task (title and individual person-hours) and the firm's staff person completing the project task.

1. The work plan shall be sufficiently detailed and clear to identify the progress milestones (i.e., when project elements, measures, and deliverables are to be completed) and the extent and timing of the City personnel involvement. Additional project elements suggested by the Proposer are to be included in the work plan and identified as Proposer suggested elements.
2. The work plan shall identify the Proposer's details on their public engagement plan and coordination of the tank artwork, including number of meetings, purpose of meetings, etc.
3. The work plan must identify information the Proposer will need from City staff in order to complete the project. Include estimated time and resource commitment from City staff.
4. The work plan shall include any other information that the Proposer believes to be pertinent but not specifically asked for elsewhere.
5. Also include in the work plan, proposed steps, if any, to expedite completion of the project. This will be given due consideration during evaluation of proposals.
6. The Proposer shall include their project schedule as described in Section II of this RFP.

In the scoring for this section, consultants shall be evaluated on the clarity, thoroughness, and content of their responses to the above items.

D. Fee Proposal - 20 points

Fee proposals shall be submitted in a single separate sealed envelope with the proposal. Any proposal not complying with this requirement may be subject to disqualification.

Fee proposals are to include the names, title, hourly rates, overhead factors, and any other details by which the overall and project element costs have been derived. Rates shall include travel time to and from the site as needed. Additional travel expenses will not be honored as part of this contract without written approval from the City, and only for extenuating circumstances under the sole discretion of the City's Contract Administrator.

The total fee proposal may be adjusted after negotiations with the City and prior to signing a formal contract, if justified. The template Professional Services Agreement is included in Appendix A of this RFP.

The Certification Statement in Attachment B must be included as part of the Fee Proposal and the Fee Proposal must be signed by an authorized signatory for respondent.

E. Authorized Negotiator

Include the name and phone number of persons(s) in your organization authorized to negotiate the Scope of Work with the City.

F. Attachments

1. Attachment A: Legal Status of Respondent, Attachments C and D: Contract Compliance Forms and Living Wage Declaration of Compliance Form and Attachment E Conflict of Interest Form must be completed and returned with the proposal. These elements should be included as attachments to the proposal submission. Attachment B: Certification must be completed and returned with the fee proposal sealed envelope. (see Section D above)

Proposal Evaluation

1. The Selection Committee will evaluate each proposal by the above described criteria and point system (A through C) to select a short list of firms for further consideration. A proposal with all the requested information does not guarantee the proposing firm to be a candidate for an interview. The Committee may contact references to verify material submitted by the Respondents. The City will determine whether the final scope of the project to be negotiated will be entirely as described in this RFP, a portion of the scope, or a revised scope.
2. If needed, the Committee then will schedule the interviews with the selected firms. The selected firms will be given the opportunity to discuss in more detail their qualifications, past experience, proposed work plan and fee proposal. The interview must include the project team members expected to complete a majority of work on the project, but no more than 4 members total. The interview shall consist of a presentation of approximately thirty (30) minutes by the Respondent, including the person who will be the project manager on this Contract, followed by approximately thirty (30) minutes of questions and answers. Audiovisual aids may be used during the oral interviews. The oral interviews may be recorded on tape by the Evaluation Team.
3. The firms interviewed will then be re-evaluated by the described criteria (A through D) and adjustments to scoring will be made as appropriate.
4. After evaluation of the proposals, further negotiation with the selected firm may be pursued leading to the award of a contract by City Council, if suitable proposals are received.

The City reserves the right to not consider any proposal which is determined to be unresponsive and deficient in any of the information requested for evaluation. The City also reserves the right to waive the interview process and evaluate the consultants based on their proposals and fee schedules alone.

The City will determine whether the final scope of the project to be negotiated will be entirely as described in this Request for Proposal, a portion of the scope, or a revised scope.

SECTION 4: ATTACHMENTS

Attachment A - Legal Status of Respondent

Attachment B - Fee Proposal

Attachment C - Contract Compliance Instructions and Forms

Attachment D - Declaration of Living Wage form and Living Wage Poster

Attachment E - Conflict of Interest Form

ATTACHMENT A

LEGAL STATUS OF RESPONDENT

(The Respondent shall fill out the appropriate form and strike out the other two.)

By signing below the authorized representative of the Respondent hereby certifies that:

The Respondent is:

- A corporation organized and doing business under the laws of the state of _____, for whom _____ bearing the office title of _____, whose signature is affixed to this proposal, is authorized to execute contracts on behalf of respondent.*

*If not incorporated in Michigan, please attach the corporation's Certificate of Authority

- A limited liability company doing business under the laws of the state of _____, whom _____ bearing the title of _____ whose signature is affixed to this proposal, is authorized to execute contract on behalf of the LLC.

- A partnership organized under the laws of the state of _____ and filed with the county of _____, whose members are (attach list including street and mailing address for each.)

- An individual, whose signature with address, is affixed to this RFP.

Respondent has examined the basic requirements of this RFP and its scope of services, including all Addendum (if applicable) and hereby agrees to offer the services as specified in the RFP.

Signature Date: _____,

(Print) Name _____ Title _____

Firm: _____

Address: _____

Contact Phone _____ Fax _____

Email _____

**ATTACHMENT B
FEE PROPOSAL**

Certification

As an awarded contract, the respondent agrees to provide the scope of work in this Request for Proposal, including all terms and conditions, instruction to respondents, special provisions, specifications, addenda, questions and corresponding answers, and the RFP as set forth in these Contract Documents. The parties intend for this to constitute the final and complete agreement between City of Ann Arbor and the Respondent.

Signature

Date

ATTACHMENT C
City of Ann Arbor Procurement Office

INSTRUCTIONS FOR CONTRACTORS
FOR COMPLETING CONTRACT COMPLIANCE FORM

City Policy

The “non discrimination in contracts” provision of the City Code, (Chapter 112, Section 9:161) requires contractors/vendors/grantees doing business with the City not to discriminate on the basis of actual or perceived race, color, religion, national origin, sex, age, condition of pregnancy, marital status, physical or mental limitations, source of income, family responsibilities, educational association, sexual orientation, gender identity or HIV status against any of their employees, any City employee working with them, or any applicant for employment. It also requires that the contractors/vendors/grantees include a similar provision in all subcontracts that they execute for City work or programs.

This Ordinance further requires that each prospective contractor/vendor submit employment data to the City showing current total employee breakdown by occupation, race and gender. This allows the Human Rights Office to determine whether or not the contractor/vendor has a workforce that is reflective of the availability of women and under-represented minorities within the contractor’s labor recruitment area (the area where they can reasonably be expected to recruit employees). ***This data is provided to the City on the Human Rights Contract Compliance Forms (attached).***

To complete the form:

1) If a company has more than one location, then that company must complete 2 versions of the form.

- **Form #1** should contain the employment data for the **entire corporation**.
- **Form #2** should contain the employment data for those employees:
 - who will be working on-site;
 - in the office responsible for completing the contract; or,
 - in the case of non-profit grantees, those employees working on the project funded by the City grant(s).

2) If the company has only one location, fill out Form #1 only.

3) Complete all data in the upper section of the form including the name of the person who completes the form and the name of the company/organization’s president.

4) Complete the Employment Data in the remainder of the form. Please be sure to complete all columns including the Total Columns on the far right side of the form, and the Total row and Previous Year Total row at the bottom of the form.

5) Return the completed form(s) to your contact in the City Department for whom you will be conducting the work.

For assistance in completing the form, contact:

Procurement Office of the City of Ann Arbor
734/794-6500

If a Contractor is determined to be out of compliance, the Procurement Office will work with them to assist them in coming into compliance.

**CITY OF ANN ARBOR PROCUREMENT OFFICE
HUMAN RIGHTS CONTRACT COMPLIANCE FORM**
Entire Organization (Totals for All Locations where applicable)

Form #1

Name of Company/Organization _____ Date Form Completed _____
 Name and Title of Person Completing this Form _____ Name of President _____
 Address _____ (Street address) _____ (City) _____ (State) _____ (Zip) _____ County _____ Phone # _____ (Area Code)
 Fax# _____ (Area Code) _____ Email Address _____

EMPLOYMENT DATA

Job Categories	Number of Employees (Report employees in only one category)												
	Male						Female						TOTAL COLUMNS A-L
	White	Black or African American	Asian	Hispanic or Latino	Native Hawaiian or Other Pacific Islander	American Indian or Alaska Native	White	Black or African American	Asian	Hispanic or Latino	Native Hawaiian or Other Pacific Islander	American Indian or Alaskan Native	
A	B	C	D	E	F	G	H	I	J	K	L		
Exec/Sr. Level Officials													
Supervisors													
Professionals													
Technicians													
Sales													
Admin. Support													
Craftspeople													
Operatives													
Service Workers													
Laborers/Helper													
Apprentices													
Other													
TOTAL													
PREVIOUS YEAR TOTAL													

**CITY OF ANN ARBOR PROCUREMENT OFFICE
HUMAN RIGHTS CONTRACT COMPLIANCE FORM**
Local Office (Only those employees that will do local or on-site work, if applicable)

Form #2

Name of Company/Organization _____ Date Form Completed _____

Name and Title of Person Completing this Form _____ Name of President _____

Address _____ Phone # _____
(Street address) (City) (State) (Zip) County (Area Code)

Fax# _____ Email Address _____
(Area Code)

EMPLOYMENT DATA

Job Categories	Number of Employees (Report employees in only one category)												
	Male						Female						TOTAL COLUMNS A-L
	White	Black or African American	Asian	Hispanic or Latino	Native Hawaiian or Other Pacific Islander	American Indian or Alaska Native	White	Black or African American	Asian	Hispanic or Latino	Native Hawaiian or Other Pacific Islander	American Indian or Alaskan Native	
	A	B	C	D	E	F	G	H	I	J	K	L	
Exec/Sr. Level Officials													
Supervisors													
Professionals													
Technicians													
Sales													
Admin. Support													
Craftspeople													
Operatives													
Service Workers													
Laborers/Helper													
Apprentices													
Other													
TOTAL													
PREVIOUS YEAR TOTAL													

1/12

Questions about this form? Call Procurement Office: (734) 794-6576

AAF-2

**ATTACHMENT D
LIVING WAGE**

**CITY OF ANN ARBOR
LIVING WAGE ORDINANCE**

RATE EFFECTIVE APRIL 30, 2014 - ENDING APRIL 29, 2015

\$12.70 per hour

If the employer provides health care benefits*

\$14.18 per hour

If the employer does **NOT** provide health care benefits*

Employers providing services to or for the City of Ann Arbor or recipients of grants or financial assistance from the City of Ann Arbor for a value of more than \$10,000 in a twelve-month period of time must pay those employees performing work on a City of Ann Arbor contract or grant, the above living wage.

ENFORCEMENT

The City of Ann Arbor may recover back wages either administratively or through court action for the employees that have been underpaid in violation of the law. Persons denied payment of the living wage have the right to bring a civil action for damages in addition to any action taken by the City.

Violation of this Ordinance is punishable by fines of not more than \$500/violation plus costs, with each day being considered a separate violation. Additionally, the City of Ann Arbor has the right to modify, terminate, cancel or suspend a contract in the event of a violation of the Ordinance.

* Health Care benefits include those paid for by the employer or making an employer contribution toward the purchase of health care. The employee contribution must not exceed \$.50 an hour for an average work week; and the employer cost or contribution must equal no less than \$1/hr for the average work week.

The Law Requires Employers to Display This Poster Where Employees Can Readily See It.

**For Additional Information or to File a Complaint Contact
Mark Berryman at 734/794-6500 or mberryman@a2gov.org**

**ATTACHMENT C
CITY OF ANN ARBOR
LIVING WAGE ORDINANCE
DECLARATION OF COMPLIANCE**

The Ann Arbor Living Wage Ordinance (Section 1:811-1:821 of Chapter 23 of Title I of the Code) requires that employers providing services to the City or recipients of grants for financial assistance (in amounts greater than \$10,000 in a twelve-month period of time) pay their employees who are working on the City project or grant, a minimum level of compensation known as the **Living Wage**. This wage must be paid to the employees for the length of the contract/project.

Companies employing fewer than 5 persons and non-profits employing fewer than 10 persons are exempt from the Ordinance. If this exemption applies to your firm, please check below:

_____ This **company** is exempt due to the fact that we employ or contract with fewer than 5 individuals.

_____ This **non-profit agency** is exempt due to the fact that we employ or contract with fewer than 10 employees.

The Ordinance requires that all contractors/vendors and/or grantees agree to the following terms:

- a) To pay each of its employees performing work on any covered contract or grant with the City, no less than the living wage, which is defined as \$12.70/hour when health care is provided, or no less than \$14.18/hour for those employers that do *not* provide health care. It is understood that the Living Wage will be adjusted each year on April 30, and covered employers will be required to pay the adjusted amount thereafter. The rates stated above include any adjustment for 2014.
- b) Please check the boxes below which apply to your workforce:
 - Employees who are assigned to *any covered* City project or grant will be paid at or above the applicable living wage without health benefits Yes_____ No_____
 - OR**
 - Employees who are assigned to *any covered* City project or grant will be paid at or above the applicable living wage with health benefits Yes_____ No_____
- c) To post a notice approved by the City regarding the Living Wage Ordinance in every work place or other location in which employees or other persons contracting for employment are working.
- d) To provide the City payroll records or other documentation as requested; and,
- e) To permit access to work sites to City representatives for the purposes of monitoring compliance, investigating complaints or non-compliance.

The undersigned authorized representative hereby obligates the contractor/vendor or grantee to the above stated conditions under penalty of perjury and violation of the Ordinance.

Company Name	Address, City, State, Zip
Signature of Authorized Representative	Phone (area code)
Type or Print Name and Title	Email address
Date signed	

Questions about this form? Please contact:
Procurement Office City of Ann Arbor
Phone: 734/794-6500

**ATTACHMENT E
CONFLICT OF INTEREST FORM**



Vendor Conflict of Interest Disclosure Form

All vendors interested in conducting business with the City of Ann Arbor must complete and return the Vendor Conflict of Interest Disclosure Form in order to be eligible to be awarded a contract. Please note that all vendors are subject to comply with the City of Ann Arbor's conflict interest policies as stated within the certification section below.

If a vendor has a relationship with a City of Ann Arbor official or employee, an immediate family member of a City of Ann Arbor official or employee, the vendor shall disclose the information required below.

Certification: I hereby certify that to my knowledge, there is no conflict of interest involving the vendor named below:

1. No City official or employee or City employee's immediate family member has an ownership interest in vendor's company or is deriving personal financial gain from this contract.
2. No retired or separated City official or employee who has been retired or separated from the City for less than one (1) year has an ownership interest in vendor's Company.
3. No City employee is contemporaneously employed or prospectively to be employed with the vendor.
4. Vendor hereby declares it has not and will not provide gifts or hospitality of any dollar value or any other gratuities to any City employee or elected official to obtain or maintain a contract.
5. Please note any exceptions below:

Vendor Name	Vendor Phone Number
Conflict of Interest Disclosure *	
Name of City of Ann Arbor employees, elected officials, or immediate family members with whom there maybe a potential conflict of interest.	<input type="checkbox"/> Relationship to employee _____ <input type="checkbox"/> Interest in vendor's company _____ <input type="checkbox"/> Other _____

*Disclosing a potential conflict of interest does not disqualify vendors. In the event vendors do not disclose potential conflicts of interest and they are detected by the City, vendor will be exempt from doing business with the City.

I certify that the information provided is true and correct by my signature below:

 Signature of Vendor Authorized Representative Date Printed Name of Vendor Authorized Representative

PROCUREMENT USE ONLY

- Yes, named employee was involved in Bid / Proposal process.
- No, named employee was not involved in procurement process or decision.

APPENDIX A – SAMPLE CONTRACT

AGREEMENT BETWEEN

AND THE CITY OF ANN ARBOR
FOR PROFESSIONAL SERVICES

The City of Ann Arbor, a Michigan municipal corporation, having its offices at 301 E. Huron St., Ann Arbor, Michigan 48104 ("City"), and _____

_____ ("Consultant") a(n) _____
_____ (State where organized) _____ (Partnership, Sole Proprietorship, or Corporation)
with its address at _____
agree as follows on this _____ day of _____, 20____.

The Consultant agrees to provide professional services to the City under the following terms and conditions:

I. DEFINITIONS

Administering Service Area/Unit means _____.

Contract Administrator means _____, acting personally or through any assistants authorized by the Administrator/Manager of the Administering Service Area/Unit.

Deliverables means all Plans, Specifications, Reports, Recommendations, and other materials developed for or delivered to City by Consultant under this Agreement

Project means _____
Project Name; File and Subfile No.

II. DURATION

This Agreement shall become effective on _____, 20____, and shall remain in effect until satisfactory completion of the Services specified below unless terminated as provided for in this Agreement.

III. SERVICES

- A. The Consultant agrees to provide professional consulting engineering services ("Services") in connection with the Project as described in Exhibit A. The City retains the right to make changes to the quantities of service within the general scope of the Agreement or within a Work Statement at any time by a written order. If the changes add to or deduct from the extent of the services, the contract sum shall be adjusted accordingly. All such changes shall be executed under the conditions of the original Agreement.

- B. Quality of Services under this Agreement shall be of the level of professional quality performed by experts regularly rendering this type of service. Determination of acceptable quality shall be made solely by the Contract Administrator.
- C. The Consultant shall perform its Services for the Project in compliance with all statutory, regulatory and contractual requirements now or hereafter in effect as may be applicable to the rights and obligations set forth in the Agreement.
- D. The Consultant may rely upon the accuracy of reports and surveys provided to it by the City except when defects should have been apparent to a reasonably competent professional or when it has actual notice of any defects in the reports and surveys.

IV. COMPENSATION OF CONSULTANT

- A. The Consultant shall be paid in the manner set forth in Exhibit B or the applicable Work Statement. Payment shall be made monthly, unless another payment term is specified in Exhibit B or applicable Work Statement, following receipt of invoices submitted by the Consultant, and approved by the Contract Administrator. Total compensation payable for all Services performed during the term of this Agreement shall not exceed _____ (\$_____).
- B. The Consultant will be compensated for Services performed in addition to the Services described in Section III, only when those additional Services have received prior written approval of the Contract Administrator. Compensation will be payable according to the fee schedule in Exhibit B, The Contract Administrator shall be the sole arbitrator of what shall be considered "reasonable" under this provision.
- C. The Consultant shall keep complete records of time spent and materials used on the Project so that the City may verify invoices submitted by the Consultant. Such records shall be made available to the City upon request and submitted in summary form with each invoice.

V. INSURANCE/INDEMNIFICATION

- A. The Consultant shall procure and maintain during the life of this contract, such insurance policies, including those set forth in Exhibit C, as will protect itself and the City from all claims for bodily injuries, death or property damage which may arise under this contract; whether the acts were made by the Consultant or by any subcontractor or anyone employed by them directly or indirectly. In the case of all contracts involving on-site work, the Contractor shall provide to the City, before the commencement of any work under this contract, documentation demonstrating it has obtained the policies required by Exhibit C.
- B. Any insurance provider of Consultant shall be admitted and authorized to do business in the State of Michigan and shall carry and maintain a minimum rating assigned by A.M. Best & Company's Key Rating Guide of "A-" Overall and a minimum Financial Size Category of "V". Insurance policies and certificates

issued by non-admitted insurance companies are not acceptable unless approved in writing by the City.

- C. To the fullest extent permitted by law, the Consultant shall indemnify, defend and hold the City, its officers, employees and agents harmless from all suits, claims, judgments and expenses including attorney's fees resulting or alleged to result from any acts or omissions by the Consultant or its employees and agents occurring in the performance of or breach in this Agreement.

VI. COMPLIANCE REQUIREMENTS

- A. Nondiscrimination. The Consultant agrees to comply, and to require its subcontractor(s) to comply, with the nondiscrimination provisions of Section 209 of the Elliot-Larsen Civil Rights Act (MCL 37.2209) The Contractor further agrees to comply with the nondiscrimination provisions of Chapter 112 of the Ann Arbor City Code and to assure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity.
- B. Living Wage. The Consultant is a "covered employer" as defined in Chapter 23 of the Ann Arbor City Code and agrees to comply with the living wage provisions of Chapter 23 of the Ann Arbor City Code. The Consultant agrees to pay those employees providing Services to the City under this Agreement a "living wage," as defined in Section 1:815 of the Ann Arbor City Code, as adjusted in accordance with Section 1:815(3); to post a notice approved by the City of the applicability of Chapter 23 in every location in which regular or contract employees providing services under this Agreement are working; to maintain records of compliance; if requested by the City, to provide documentation to verify compliance; to take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee or person contracted for employment in order to pay the living wage required by Section 1:815; and otherwise to comply with the requirements of Chapter 23.

VII. WARRANTIES BY THE CONSULTANT

- A. The Consultant warrants that the quality of its Services under this Agreement shall conform to the level of professional quality performed by experts regularly rendering this type of service.
- B. The Consultant warrants that it has all the skills, experience, and professional licenses necessary to perform the Services specified in this Agreement.
- C. The Consultant warrants that it has available, or will engage, at its own expense, sufficient trained employees to provide the Services specified in this Agreement.
- D. The Consultant warrants that it is not, and shall not become overdue or in default to the City for any contract, debt, or any other obligation to the City including real and personal property taxes.

VIII. TERMINATION OF AGREEMENT

- A. If either party is in breach of this Agreement for a period of fifteen (15) days following receipt of notice from the non-breaching party with respect to a breach, the non-breaching party may pursue any remedies available to it against the breaching party under applicable law, including but not limited to, the right to terminate this Agreement without further notice.
- B. The City may terminate this Agreement, on at least thirty (30) days advance notice, for any reason, including convenience, without incurring any penalty, expense or liability to the Consultant except the obligation to pay for Services actually performed under the Agreement before the termination date.
- C. Consultant acknowledges that, if this Agreement extends for several fiscal years, continuation of this Agreement is subject to appropriation of funds for this Project. If funds to enable the City to effect continued payment under this Agreement are not appropriated or otherwise made available, the City shall have the right to terminate this Agreement without penalty at the end of the last period for which funds have been appropriated or otherwise made available by giving written notice of termination to the Consultant. The Contract Administrator shall give the Consultant written notice of such non-appropriation within thirty (30) days after it receives notice of such non-appropriation.
- D. The remedies provided in this Agreement will be cumulative, and the assertion by a party of any right or remedy will not preclude the assertion by such party of any other rights or the seeking of any other remedies.

IX. OBLIGATIONS OF THE CITY

- A. The City agrees to give the Consultant access to the Project area and other City-owned properties as required to perform the necessary Services under this Agreement.
- B. The City shall notify the Consultant of any defects in the Services of which the Contract Administrator has actual notice.

X. ASSIGNMENT

- A. The Consultant shall not subcontract or assign any portion of any right or obligation under this Agreement without prior written consent from the City. Notwithstanding any consent by the City to any assignment, Consultant shall at all times remain bound to all warranties, certifications, indemnifications, promises and performances, however described, as are required of it under the Agreement unless specifically released from the requirement, in writing, by the City.
- B. The Consultant shall retain the right to pledge payment(s) due and payable under this Agreement to third parties.

XI. NOTICE

All notices and submissions required under this Agreement shall be delivered to the respective party in the manner described herein to the address stated in this Agreement or such other address as either party may designate by prior written notice to the other.

Notices given under this Agreement shall be in writing and shall be personally delivered, sent by next day express delivery service, certified mail, or first class U.S. mail postage prepaid, and addressed to the person listed below. Notice will be deemed given on the date when one of the following first occur: (1) the date of actual receipt; (2) the next business day when notice is sent next day express delivery service or personal delivery; or (3) three days after mailing first class or certified U.S. mail.

If Notice is sent to the CONSULTANT, it shall be addressed and sent to:

If Notice is sent to the CITY, it shall be addressed and sent to:

City of Ann Arbor
301 E. Huron St., POB 8647
Ann Arbor, Michigan 48104
Attn:

XII. CHOICE OF LAW

This Agreement will be governed and controlled in all respects by the laws of the State of Michigan, including interpretation, enforceability, validity and construction. The parties submit to the jurisdiction and venue of the Circuit Court for Washtenaw County, State of Michigan, or, if original jurisdiction can be established, the United States District Court for the Eastern District of Michigan, Southern Division, with respect to any action arising, directly or indirectly, out of this Agreement or the performance or breach of this Agreement. The parties stipulate that the venues referenced in this Agreement are convenient and waive any claim of non-convenience.

XIII. OWNERSHIP OF DOCUMENTS

Upon completion or termination of this Agreement, all documents (i.e., deliverables) prepared by or obtained by the Consultant as provided under the terms of this Agreement shall be delivered to and become the property of the City. Original basic survey notes, sketches, charts, drawings, partially completed drawings, computations, quantities and other data shall remain in the possession of the Consultant as instruments of service unless specifically incorporated in a deliverable, but shall be made available, upon request, to the City without restriction or limitation on their use. The City acknowledges that the documents are prepared only for the Project. Prior to completion of the contracted Services the City shall have a recognized proprietary interest in the work product of the Consultant.

Unless otherwise stated in this Agreement, any intellectual property owned by Consultant prior to the effective date of this Agreement (i.e., preexisting information) shall remain the exclusive property of Consultant even if such Preexisting Information is embedded or otherwise incorporated in materials or products first produced as a result of this Agreement or used to develop Deliverables. The City's right under this provision shall not apply to any Preexisting Information or any component thereof regardless of form or media.

XIV. CONFLICT OF INTEREST

Consultant certifies it has no financial interest in the Services to be provided under this Agreement other than the compensation specified herein. Consultant further certifies that it presently has no personal or financial interest, and shall not acquire any such interest, direct or indirect, which would conflict in any manner with its performance of the Services under this Agreement.

XV. SEVERABILITY OF PROVISIONS

Whenever possible, each provision of this Agreement will be interpreted in a manner as to be effective and valid under applicable law. However, if any provision of this Agreement or the application of any provision to any party or circumstance will be prohibited by or invalid under applicable law, that provision will be ineffective to the extent of the prohibition or invalidity without invalidating the remainder of the provisions of this Agreement or the application of the provision to other parties and circumstances.

XVI. EXTENT OF AGREEMENT

This Agreement, together with any affixed exhibits, schedules or other documentation, constitutes the entire understanding between the City and the Consultant with respect to the subject matter of the Agreement and it supersedes, unless otherwise incorporated by reference herein, all prior representations, negotiations, agreements or understandings whether written or oral. Neither party has relied on any prior representations, of any kind or nature, in entering into this Agreement. This Agreement may be altered, amended or modified only by written amendment signed by the Consultant and the City.

FOR CONSULTANT

FOR THE CITY OF ANN ARBOR

By _____

By _____
John Hieftje, Mayor

Type Name: _____

By _____
Jacqueline Beaudry, City Clerk

Its _____

Approved as to substance

Steven D. Powers, City Administrator

Craig Hupy, Public Services Area
Administrator

Approved as to Form and Content

Stephen K. Postema, City Attorney

SAMPLE AGREEMENT EXHIBITS

EXHIBIT A

(negotiated scope of work based on accepted terms of Proposal)

EXHIBIT B

(negotiated compensation based on accepted terms of Proposal)

EXHIBIT C

INSURANCE REQUIREMENTS

Effective the date of this Agreement, and continuing without interruption during the term of this Agreement, Contractor shall provide certificates of insurance to the City on behalf of itself, and when requested any subcontractor(s).

- A. The certificates of insurance shall meet the following minimum requirements.
 - 1. Errors or Omissions or Professional Liability insurance in an amount not less than \$1,000,000 protecting Consultant and its employees.
 - 2. Worker's Compensation Insurance in accordance with all applicable state and federal statutes. Further, Employers Liability Coverage shall be obtained in the following minimum amounts:

Bodily Injury by Accident - \$500,000 each accident
Bodily Injury by Disease - \$500,000 each employee
Bodily Injury by Disease - \$500,000 each policy limit
 - 3. Commercial General Liability Insurance equivalent to, as a minimum, Insurance Services Office form CG 00 01 07 98 or current equivalent. The City of Ann Arbor shall be an additional insured. There shall be no added exclusions or limiting endorsements including, but not limited to: Products and Completed Operations, Explosion, Collapse and Underground Coverage or Pollution. Further, the following minimum limits of liability are required:

\$1,000,000 Each occurrence as respect Bodily Injury Liability or Property Damage Liability, or both combined
\$2,000,000 Per Job General Aggregate
\$1,000,000 Personal and Advertising Injury
 - 4. Motor Vehicle Liability Insurance, including Michigan No-Fault Coverages, equivalent to, as a minimum, Insurance Services Office form CA 00 01 07 97 or current equivalent.. Coverage shall include all owned vehicles, all non-owned vehicles and all hired vehicles. Further, the limits of liability shall be \$1,000,000 for each occurrence as respects Bodily Injury Liability or Property Damage Liability, or both combined.

5. Umbrella/Excess Liability Insurance shall be provided to apply in excess of the Commercial General Liability, Employers Liability and the Motor Vehicle coverage enumerated above, for each occurrence and for aggregate in the amount of \$1,000,000.
- B. Insurance required under V.A 2 of this contract shall be considered primary as respects any other valid or collectible insurance that the City may possess, including any self-insured retentions the City may have; and any other insurance the City does possess shall be considered excess insurance only and shall not be required to contribute with this insurance. Further, the Contractor agrees to waive any right of recovery by its insurer against the City.
 - C. Documentation must provide and demonstrate an unconditional 30 day written notice of cancellation in favor of the City of Ann Arbor. Further, the documentation must explicitly state the following: (a) the policy number; name of insurance company; name and address of the agent or authorized representative; name and address of insured; project name; policy expiration date; and specific coverage amounts; (b) any deductibles or self-insured retentions which shall be approved by the City, in its sole discretion; (c) that the policy conforms to the requirements specified. An original certificate of insurance may be provided as an initial indication of the required insurance, provided that no later than 21 calendar days after commencement of any work the Contractor supplies a copy of the endorsements required on the policies. Upon request, the Contractor shall provide within 30 days a copy of the policy(ies) to the City. If any of the above coverages expire by their terms during the term of this contract, the Contractor shall deliver proof of renewal and/or new policies to the Administering Service Area/Unit at least ten days prior to the expiration date.

APPENDIX B

NON-DISCLOSURE AGREEMENT
BETWEEN (Consultant) AND THE CITY OF ANN ARBOR

Whereas, the City of Ann Arbor, with municipal offices at 100 N. Fifth Avenue, Ann Arbor 48107 (“City”) is the owner of certain confidential information relating to its water system and components thereof, which is or may be classified as exempt or restricted information under the Michigan Freedom of Information Act and federal bioterrorism and homeland security laws (collectively referred to as “Confidential Information”).

Whereas, (Consultant) (referred to as “Receiver”) is desirous of receiving, reviewing, and/or evaluating the Confidential Information for the sole and exclusive purpose of (Project).

It is hereby agreed:

That, the City shall, in its sole discretion, disclose to Receiver some or all of the Confidential Information, based on Receiver’s request for the Water Supply System:

(details of information to be given to the Consultant)

It is understood that Receiver will secure at its sole cost any and all licenses, authorizations or other intellectual property rights necessary for the transfer of Confidential Information in the format requested by Receiver. Receiver will be required to provide documentation of it has all necessary licenses, authorizations or rights prior to transfer of the Confidential Information in the requested format.

That, Receiver shall hold and use Confidential Information only for the above-stated purpose of this Agreement and shall restrict disclosure of such Confidential Information to its employees with a need to know. Each employee of Receiver identified as “need to know” in connection with the receipt, review or evaluation of the Confidential Information shall be required to execute a Non-disclosure Agreement under the same terms as stated herein. The City shall be provided with a copy of the executed employee Non-disclosure Agreements and a master list of the employees, their respective jobs, and the reason for their classification as “need to know.”

That, Receiver will hold the Confidential Information or any part thereof in strict confidence and will not permit any disclosure thereof to any person or persons outside its organization and not use or derive any direct or indirect benefit from the Confidential Information or any part thereof without the prior written consent of the City. Receiver agrees that it will not disseminate in any manner any part of the Confidential Information.

That, Receiver will not make or authorize to be made any copies of any reports, plans, drawings or electronic data files supplied by the City and showing or describing or embodying the Confidential Information unless authorized by the City in writing. At any time and for any reason, prior to the completion of the work performed by the Receiver, the City may request and Receiver agrees it will return all of the said reports, plans, drawings or electronic data files together with any reports, drawings or electronic data files, including any independent notations of the Confidential Information, made by Receiver showing or describing or embodying the

Confidential Information or any part thereof to the City immediately. After completion of the work, the Receiver shall return to the City any drawings, extracts, reproductions, or other documentation comprising the Confidential Information, in whatever format or media, including any independent notations of the Confidential Information made by Receiver showing or describing or embodying the Confidential Information or any part thereof. In addition, access shall be controlled by the Receiver to all Confidential Information generated as part of the work performed by the Receiver. Although the Receiver is permitted to maintain copies of their work, dissemination of this Confidential Information is not permitted without written authorization from the City.

That, the restrictions on the use or disclosure of Confidential Information by Receiver shall not include any information which:

1. at the time of disclosure to Receiver was known to Receiver free of restriction and such previous knowledge is evidenced by documentation in the possession of Receiver. A copy of which documentation will be provided to the City if requested by the City; or
2. is publicly known or later made publicly known by the City; or
3. is evidenced by documentation in the possession of Receiver as being received from a third party to this Agreement who: (a) has the legal right to so furnish such information to Receiver, and (b) is not obligated to the City to keep such information confidential; or
4. is approved for release in writing by the City.

That, nothing in this Agreement shall be construed as conferring to Receiver any right of ownership in the Confidential Information or license to use any, patents, industrial designs, copyrights or other intellectual property rights owned or licensed by the City.

That, nothing in this Agreement shall be construed as restricting the City's right to restrain use or dissemination of the Confidential Information in accordance with applicable federal, state or local law and regulation or at common law.

Receiver acknowledges that a breach by him/her of the provisions of this Agreement will cause the City irreparable damage for which the City cannot be reasonably or adequately compensated in damages. The City shall therefore be entitled, in addition to all other remedies available to it including, but not limited to, attorney fees and costs, to injunctive and/or other equitable relief to prevent a breach of this Agreement, or any part of it, and to secure its enforcement.

This Agreement shall be construed in accordance with the laws of the State of Michigan.

This Agreement and any amendments hereto may be executed by facsimile signature and in any number of counterparts, all of which taken together shall constitute one and the same instrument.

CITY OF ANN ARBOR

(Consultant)

By: _____
Steven D. Powers Date
Its: City Administrator

By: _____
Date
Print Name: _____

Its:

Approved as to substance:

Craig Hupy
Public Services Area Administrator

Approved as to form:

Stephen K. Postema
City Attorney

Appendix C

West High Service Pump Upgrades

6.0 OVERALL CITY DEMANDS

6.1 INTRODUCTION

Section 2.0 was developed based upon upgrading the WHS Pumps to meet Scio existing and future demands. In a separate effort from the Scio Township evaluation, this section of the report is based upon developing WHS District improvements that will improve the District operations. The improvement upgrades considered in this section are based upon the following:

- Simplifying operations
- Stabilizing District pressures
- Improving emergency operations

To meet these goals, the addition of an elevated storage tank to the WHS District is described in the subsequent sections.

6.2 TANK IMPROVEMENTS

Several options were considered for providing additional storage within the WHS District. These include expanding the existing Liberty Pump Station Reservoir (i.e. adding up to an additional 3 MG cast-in-place concrete reservoir by mirroring the existing) or adding an elevated tank to the district. Considerations in reviewing the various alternatives included:

- System Demands
- Emergency Storage
- Pressure Stabilization
- Water Quality

The review of additional storage also included a “No Expansion” alternative which involved improvements to the existing Liberty Pump Station which included the addition of VFDs and replacing the fill valve. A matrix is provided in **Tables 6-1 thru 6-3** that summarizes the findings of the following sections.

6.2.1 Value Engineering Review – Elevated Tank

The June 2010 Master Plan included a recommendation for an elevated tank with an overflow elevation of 1,120 feet Mean Sea Level (MSL) in the area of the Liberty Reservoir. This is an

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increase in elevation of 20 feet from previous Master Plan recommendations. Stantec reviewed the current June 2010 Master Plan and agrees with the following comments:

- An elevated tank will provide better system pressure fluctuation control.
- There are possible energy savings in utilizing elevated storage.
- A higher elevation will better serve the high points west of Maple and Pauline.

Stantec also identified several issues in the June 2010 Master Plan analysis including:

- Impacts to low points of the system.
- Impacts to the supply HGL at the WTP.

Review of system operations indicates that an elevated tank would supply peak hour demands during the morning and evening hours. Assuming the tank supplies all demands greater than maximum day demands, this equates to approximately 1 MG. It is also assumed that the City will continue to utilize the Liberty Pump Station for electrical peak shaving between the hours of 11:00 AM and 7:00 PM at a pumping rate of approximately 2,200 gpm. This equates to approximately 1.1 MG. The resulting storage deficit will require the WHS pumps to supply 2.1 MG during a 7 hour nighttime period or approximately 5,000 gpm to the existing reservoir and proposed elevated storage facilities.

In order for the WHS pumps to supply this flow to the area of the Liberty Reservoir, the pumps will have to overcome approximately 15 to 25 feet of distribution system losses. This means that the WHS pump station will need to have a hydraulic grade line supply approximately 25 feet higher than the elevated tank overflow in order to fill the tank.

Consequently, if the elevated tank was set at 1,120 feet per the June 2010 Master Plan, the increased pressure in low areas between the WTP and Liberty Reservoir and north of the WTP would be a concern. The current low point of the district is located along the boundary between the WHS and Gravity Districts near Liberty and 8th Street. This area currently experiences a pressure of approximately 120 psi at a WHS pump supply HGL of 1,105 feet at the WTP. The WHS pump station would have to provide an HGL of approximately 1,145' to be able to fill the elevated tank to a HGL of 1,120'. This results in approximately 20 psi of additional increased pressures in the existing high pressure areas. There was no discussion of this point within the June 2010 Master Plan.

Discussions with the City concerning various tank elevations and a model review of the impacts resulted in considering an elevated tank with an overflow of approximately 1,105 feet as a basis of design for this project.

6.2.2 Basis of Design – Elevated Tank

The proposed elevated tank will be developed based on a typical bowl heights for various sizes with a normal tank full elevation of 1,105 feet (tank size dependent) for operational flexibility. The overflow elevation will be set slightly above 1,105 feet. The tank full elevation of 1,105 will therefore be five feet above the North Campus elevated tank of 1,100. This will allow the City to operate the districts with comparable HGLs.

At the WTP, the WHS pump discharge is currently set at an HGL of 1,105 feet. The model indicates that with the addition of the proposed elevated tank (tank full at 1,105 feet), the discharge at the WTP will need to be increased from 1,105 to 1,120 feet. This would increase the pressures between Liberty Reservoir and the WTP 0 to 6 psi depending on the location reviewed. The low point would be impacted with an increase of approximately 5 psi during tank filling operations, which is the reason for the recommended review of the Crest area and connections along Huron River Drive. The high point and south of the proposed elevated tank location are not impacted due to those pressures being controlled by the HGL of the elevated tank.

An additional 28 parcels in the Crest area and 7 parcels in various other locations will require additional review due to impacts of the proposed elevated tank, if the elevated tank is located at Liberty Reservoir with an overflow elevation of approximately 1,105 feet. These parcels are identified on **Figure 6-1**

The size of the tank will be based upon:

- Improving pressure fluctuations in the system.
- Maintaining water quality between the proposed elevated tank and the Liberty Reservoir.

Based on the City's historical experience, the City has indicated that they will be able to maintain water quality in storage facilities for 7 days. In review of the proposed tank analysis, tank turnover requirements will be assumed to be 7 days for water quality purposes.

6.2.3 Elevated Tank Location

The location of the elevated tank is based on available property at Liberty Pump Station. Should a location further north be identified, the system pressures will fluctuate more like the existing system, meaning that the tank will have less of an impact on stabilizing the system pressures. The further south the tank is located from Liberty Pump Station, the higher the discharge pressures from the WTP will be required to fill the tank. This will translate to higher pressures at the system low point as well. From a district pressure standpoint, the Liberty site is well suited for an elevated tank and would not require property acquisition.

6.2.4 Elevated Tank Size

An elevated tank is typically sized to serve several functions. These include:

- Supplying fire flow demands
- Supplying peak hour demands
- Providing emergency storage
- Stabilizing system pressures

The existing Liberty Pump Station and its 3 MG reservoir has the ability to meet the first three functions, but the facility is actually the cause of the larger pressure fluctuations. While the ability is there to contribute to peak hour demands, the Liberty Pump Station is not consistently utilized for this function. It is used for electrical peak shaving, supplying fire flow and emergency storage conditions. It has already been determined that it cannot be utilized as a combined electrical/demand shaver in Section 2.3.5.5 Storage Recovery.

The following paragraphs review the required volume based upon these different functions.

6.2.4.1 Fire flow Volume

The worst case fire flow condition identified in the Section 2.0 for this district was identified as a high school fire at 5,000 gpm for 4 hours. This equates to a 1.2 MG fire flow volume. Since a tank fluctuates throughout the day, a 25% buffer is assumed to be required within the tank as well. This increases the required stored volume in the WHS District to 1.5 MG based on fire flow. It should be noted that fire flow demands can also be provided by a combination of WHS Pumps and the Liberty Pump Station with the existing 3 MG reservoir.

6.2.4.2 Peak Hour Demands

Peak hour demand volumes were also previously identified. During maximum day demands, a volume of approximately 1 MG is required to supply peak hour flows greater than the maximum daily average. Seasonal winter and average day demand operations have a diurnal demand pattern without as large amplitude. Therefore, during these usage periods, not as much volume is required to meet peak demands. A similar analysis was performed on average day demands with the required volume being approximately 0.35 MG.

6.2.4.3 Providing Emergency Storage

Unless a community has redundant systems to supply peak demands, Ten State Standards suggests providing enough storage to equal the systems daily average flow. The daily average flow for WHS District is 2.8 MG which can be met by the existing Liberty 3 MG storage reservoir. However, the existing Liberty pumps would be the limiting factor.

Under emergency conditions, it is assumed that Scio Township will operate off of their own storage facility, but if expectations are to also meet Scio Township's demands, it is assumed that the Township's average day demands, and not contractual demands, would be met under emergency conditions. The combined average day volume of the WHS District and Scio Township is 3.8 MG.

6.2.5 Stabilizing System Pressures

System pressures were reviewed based on the current operations of the Liberty Pump Station in combination with the WHS Pumps. System pressures near the Liberty Pump Station fluctuate approximately 15 psi throughout the day and approximately 20 psi in the south end of the system.

Inclusion of an elevated tank at the Liberty Pump Station site will stabilize pressures depending on the size and operating range of the tank. The operating range of the tank will depend on its volume and the volume required for operation. For review of the pressure impacts based on tank size, the maximum day demand scenario with Liberty Pump Station supplying electrical peak shaving was utilized.

Tables 6-1 thru 6-3 provides typical bowl heights for various tank sizes and the expected pressure variation in the Liberty Pump Station and south end areas. Expected pressure changes based on various elevated tank sizes range from +2 to -4 psi at the Liberty Pump Station to 0 to -6 psi at the south end.

6.2.6 Storage Water Quality

A particular concern in adding additional storage is maintaining water quality in the storage facilities. With the proximity of the proposed elevated tank to the Liberty Pump Station reservoir, there is a concern of old water short circuiting between storage devices. This means that some old water may transfer back and forth between storage devices rather than returning to the distribution system and being utilized by demands. If enough new water is prevented from mixing with the old water, it could create a water quality issue. There is also concern that if there is too much storage, additional operations are required to force the tank to be turned over. This could have impacts on tank recovery or cause additional costs due to re-pumping of water.

The water quality analysis consisted of a review of water age within storage facilities. The water age of the various alternatives is summarized in **Tables 6-1 thru 6-3**.

6.2.7 Tank Costs

Tank costs are provided for the various alternatives of additional storage in **Tables 6-1 thru 6-3**. The cost estimates for each alternative include materials, site work, yard piping, pump station upgrades (if necessary), etc. An additional 30% contingency is also included for construction, administration, legal, and design.

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Table 6-1

City of Ann Arbor West High Service District Storage Alternative Analysis									
Scenario	Existing Liberty Reservoir	Expand Liberty Reservoir	New 1 MG Elevated Tank		New 1.5 MG Elevated Tank		New 2 MG Elevated Tank		Total
	3 MG Reservoir	6 MG Reservoir	Existing 3 MG Reservoir	1 MG tank	Existing 3 MG Reservoir	1.5 MG Tank	Existing 3 MG Reservoir	2 MG Tank	
Depth/Diameter	20' / NA	20' / NA	20' / NA	40' / 75	20' / NA	46' / 87	20' / NA	52' / 94	
Construction Costs (w/30%contingency)									
Construction Costs (w/30% contingency)	\$100,000	\$7,500,000		\$3,100,000		\$4,200,000		\$5,200,000	
Maximum Hour Peak Shaving									
Storage Required	1.0 MG	1.0 MG	0 MG	1.0 MG	0 MG	1.0 MG	0 MG	1.0 MG	1.0 MG
Typical Operating Depth	13' to 20'	16' to 20'	NA / NA	0' to 40'	NA / NA	15' to 46'	NA / NA	26' to 52'	
Pressure Variance at Liberty/South End	15 psi / 20 psi	15 psi / 20 psi	NA / NA	17 psi / 20 psi	NA / NA	13 psi / 16 psi	NA / NA	11 psi / 14 psi	
Maximum Pumping/Outflow Rate Required	3,000 gpm	3,000 gpm	0 gpm	3,000 gpm	0 gpm	3,000 gpm	0 gpm	3,000 gpm	
Average Fill Rate Required (7 hours overnight)	2,400 gpm	2,400 gpm	0 gpm	2,400 gpm	0 gpm	2,400 gpm	0 gpm	2,400 gpm	
WHS Impacts*	Pumps Supply 5,400 gpm @ 1105'	Pumps Supply 5,400 gpm @ 1105'	Pumps Supply 5,400 gpm @ 1105'	Pumps Supply 5,400 gpm @ 1120'	Pumps Supply 5,400 gpm @ 1120'	Pumps Supply 5,400 gpm @ 1120'	Pumps Supply 5,400 gpm @ 1120'	Pumps Supply 5,400 gpm @ 1120'	
Tank Water Age at 7 Days	115.14 Hrs	142.76 Hrs	168 Hrs	62.93 Hrs	168 Hrs	78.87 Hrs	168 Hrs	99.03 Hrs	
Reserve Storage	2 MG	5 MG	3 MG	0 MG	3 MG	0.5 MG	3 MG	1 MG	
* WTP supplies maximum day average demands with peak hour supplied from storage									
** Obtained from existing SCADA data									
*** It is not feasible to utilize an elevated tank for electrical shaving due to inability to control flows over a specific time period without a pump.									
**** It is not feasible to utilize ground storage for combined peak shaving due to inability fill and operate system without detailed controls.									

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Table 6-2

City of Ann Arbor West High Service District Storage Alternative Analysis										
Scenario	Existing Liberty Reservoir 3 MG Reservoir		Expand Liberty Reservoir 6 MG Reservoir		New 1 MG Elevated Tank Existing 3 MG Reservoir		New 1.5 MG Elevated Tank Existing 3 MG Reservoir		New 2 MG Elevated Tank Existing 3 MG Reservoir	
	20' / NA	20' / NA	20' / NA	20' / NA	40' / 75	20' / NA	20' / NA	46' / 87	20' / NA	52' / 94
Tank Size Impacts										
Depth/Diameter	20' / NA	20' / NA	20' / NA	20' / NA	40' / 75	20' / NA	20' / NA	46' / 87	20' / NA	52' / 94
Construction Costs (w/30% contingency)										
Construction Costs (w/30% contingency)	\$100,000	\$7,500,000	\$3,100,000	\$4,200,000	\$5,200,000					
Electrical Peak Shaving										
Storage Required	1.2 MG	1.2 MG	NA***	NA***	NA***	NA***	NA***	NA***	NA***	NA***
Typical Operating Depth	13' to 20'	16' to 20'	NA***	NA***	NA***	NA***	NA***	NA***	NA***	NA***
Pressure Variance at Liberty/South End	15 psi / 20 psi	15 psi / 20 psi	NA***	NA***	NA***	NA***	NA***	NA***	NA***	NA***
Maximum Pumping/Outflow Rate Required	2,500 gpm**	2,500 gpm	NA***	NA***	NA***	NA***	NA***	NA***	NA***	NA***
Average Fill Rate Required (7 hours overnight)	2,800 gpm	2,800 gpm	NA***	NA***	NA***	NA***	NA***	NA***	NA***	NA***
WHS Impacts	Pumps Supply Maximum Hour Rates @ 1105'	Pumps Supply Maximum Hour Rates @ 1105'	NA***	NA***	NA***	NA***	NA***	NA***	NA***	NA***
Tank Water Age at 7 Days	71.52 Hrs	105.95 Hrs	NA***	NA***	NA***	NA***	NA***	NA***	NA***	NA***
Reserve Storage	1.8 MG	4.8 MG	NA***	NA***	NA***	NA***	NA***	NA***	NA***	NA***

* WTP supplies maximum day average demands with peak hour supplied from storage
 ** Obtained from existing SCADA data
 *** It is not feasible to utilize an elevated tank for electrical shaving due to inability to control flows over a specific time period without a pump.
 **** It is not feasible to utilize ground storage for combined peak shaving due to inability fill and operate system without detailed controls.

Table 6-3

City of Ann Arbor West High Service District Storage Alternative Analysis										
Scenario	Existing Liberty Reservoir		Expand Liberty Reservoir		New 1 MG Elevated Tank		New 1.5 MG Elevated Tank		New 2 MG Elevated Tank	
	3 MG Reservoir	6 MG Reservoir	Existing 3 MG Reservoir	1 MG tank	Existing 3 MG Reservoir	1.5 MG Tank	Existing 3 MG Reservoir	1.5 MG Tank	Existing 3 MG Reservoir	2 MG Tank
Tank Size Impacts										
Depth/Diameter	20' / NA	20' / NA	20' / NA	40' / 75	20' / NA	46' / 87	20' / NA	46' / 87	20' / NA	52' / 94
Construction Costs (w/30% contingency)										
Construction Costs (w/30% contingency)	\$100,000	\$7,500,000	\$3,100,000		\$4,200,000		\$5,200,000			
Combined Peak Shaving										
Storage Required	NA****	NA****	1.1 MG	1.0 MG	1.1 MG	1.0 MG	1.1 MG	1.0 MG	1.1 MG	1.0 MG
Typical Operating Depth	NA****	NA****	NA / NA	0' to 40'	NA / NA	15' to 46'	NA / NA	15' to 46'	NA / NA	26' to 52'
Pressure Variance at Liberty/South End	NA****	NA****	NA / NA	17 psi / 20 psi	NA / NA	13 psi / 16 psi	NA / NA	13 psi / 16 psi	NA / NA	11 psi / 14 psi
Maximum Pumping/Outflow Rate Required	NA****	NA****	2,500 gpm*	3,000 gpm	2,500 gpm*	3,000 gpm	2,500 gpm*	3,000 gpm	2,500 gpm*	3,000 gpm
Average Fill Rate Required (7 hours overnight)	NA****	NA****	2,600 gpm	2,400 gpm	2,600 gpm	2,400 gpm	2,600 gpm	2,400 gpm	2,600 gpm	2,400 gpm
WHS Impacts*	NA****	NA****	Pumps Supply 5,400 gpm @ 1120'		Pumps Supply 5,400 gpm @ 1120'		Pumps Supply 5,400 gpm @ 1120'		Pumps Supply 5,400 gpm @ 1120'	
Tank Water Age at 7 Days	NA****	NA****	63.76 Hrs	72.58 Hrs	65.81 Hrs	91.78 Hrs	67.85 Hrs (Winter, factor on demands, 86.5 Hrs)	91.78 Hrs	104.66 Hrs (Winter, factor on demands, 167.89 Hrs)	
Reserve Storage	NA****	NA****	1.9 MG	0 MG	1.9 MG	0.5 MG	1.9 MG	0.5 MG	1.9 MG	1.0 MG
* WTP supplies maximum day average demands with peak hour supplied from storage										
** Obtained from existing SCADA data										
*** It is not feasible to utilize an elevated tank for electrical shaving due to inability to control flows over a specific time period without a pump.										
**** It is not feasible to utilize ground storage for combined peak shaving due to inability fill and operate system without detailed controls.										

6.2.8 Tank Size Discussion

Upon review of the various alternatives, several issues became apparent through the modeling that removed some alternatives from the final recommendation. These are as follows:

- Utilizing or expanding the existing ground storage reservoir does not allow for both electrical peak shaving and peak hour demand shaving. The reason is due to the required fill rates during the night, maintaining system pressures during nighttime filling periods, and difficult operational controls. Additional issues for the expansion alternative included cost and winter time water quality.
- A 1 MG elevated tank is not large enough to meet the fire flow demands; however Liberty Pump Station could be utilized for this. Additionally, the full depth of the elevated tank would be utilized during maximum day demands with no buffer volume.
- A 2 MG elevated tank will have water quality issues during winter time operations.
- With an elevated tank alternative, a pressure relief device is required in the south end of the system when the tank is full. The city accomplishes similar operations with the Eisenhower valve, however the existing butterfly valve will likely not provide sufficiently accurate control for the proposed conditions. The pressure relief device should also maintain a minimum pressure so that the District can be operated off of Liberty Pump Station during low flows and electrical peak shaving without WHS Pumps. Due to the elevated tank proximity to the Liberty Pump Station, the station will fill the elevated tank during electrical peak shaving.
- It should be noted that the existing pumps at Liberty Pump Station are designed to provide an HGL of 1,105 feet at approximately 2,100 gpm. Therefore, the existing pumps are capable of filling the elevated tank.

6.2.9 Tank Size Alternative Recommendation

In review of the various alternatives, Stantec recommends a 1.5 MG elevated tank based on a combination of cost, pressure stabilization, and maintaining water quality. A typical tank of this size has an approximate bowl height of 46 feet. The tank full elevation is assumed to be at 1,105 feet with the overflow slightly above that. Based on ground elevations at the Liberty Pump Station of approximately 972 feet, the base-to-top of bowl tank height is expected to be approximately 133 feet.

6.3 WHS PUMP IMPROVEMENTS

6.3.1 System Head Curve

In order to design a pumping system properly, it is necessary to know the total dynamic head (TDH) a pump must overcome. TDH is the combination of static head (elevation) and friction losses the pump must overcome. In this case, the worst TDH the WHS pumps must overcome is when the Finished Water Reservoir is at elevation 980 feet while trying to maintain a discharge pressure at the WTP of 58 psi (HGL 1,120 feet) at a design demand of 12,100 gpm.

A system head curve for these improvements is developed by varying the system demands and adjusting the horsepower of a single pump in the model until the required discharge is met. The system head curve for the WHS District is provided in **Graph 6-1**. A second curve is provided based on the Finished Water Reservoir being full (less static head) which reduces the TDH requirements across the pump. The discharge pressure is still held at 58 psi. **Figure 6-2** is provided to demonstrate how the system HGL will react due to increasing flows.

It should be noted that the only difference in this system head curve versus the improvements due to Scio Township demand head curve is the additional 15 feet of head required at the WHS pump discharge location. The HGL of existing system in the tank location area is reviewed under the following conditions:

- Liberty Pump Station is turned off.
- Liberty Reservoir is not filling.
- WHS Pumps supplying a discharge of 52 psi during peak demand.

With the proposed tank, the HGL that must be supplied to the area is 1,105 feet in order to fill the tank versus 1,090 feet without the tank. The resulting flows between the WHS pump station and the tank location areas are similar under each scenario. This was determined by reviewing the peak hour demand flows with no tank versus maximum day off peak flows when the proposed tank is filling. Since the flows are similar, there is no significant change to the head curve due to system friction losses. It is the required change in static head (+15 feet) that the design of the WHS pumps must take into account.

It should be noted that the system head curve is only impacted by losses within the WHS Pumping system from the Finished Water Reservoir to the point of discharge pressure monitoring. This is due to the fact that a constant discharge pressure of 58 psi provides acceptable system pressures under various demand conditions (with the only exceptions being the high and low points of the system).

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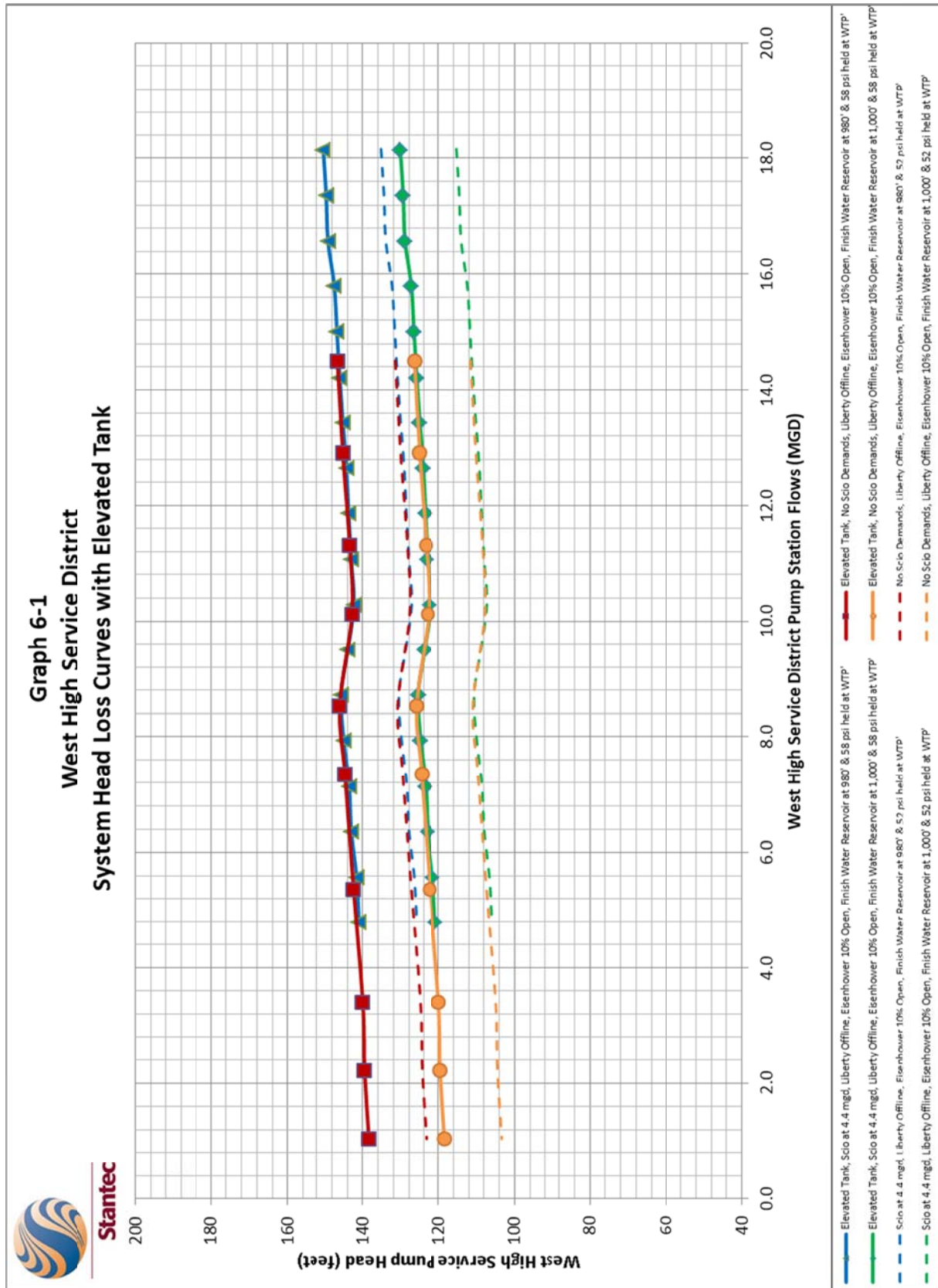
September, 2014

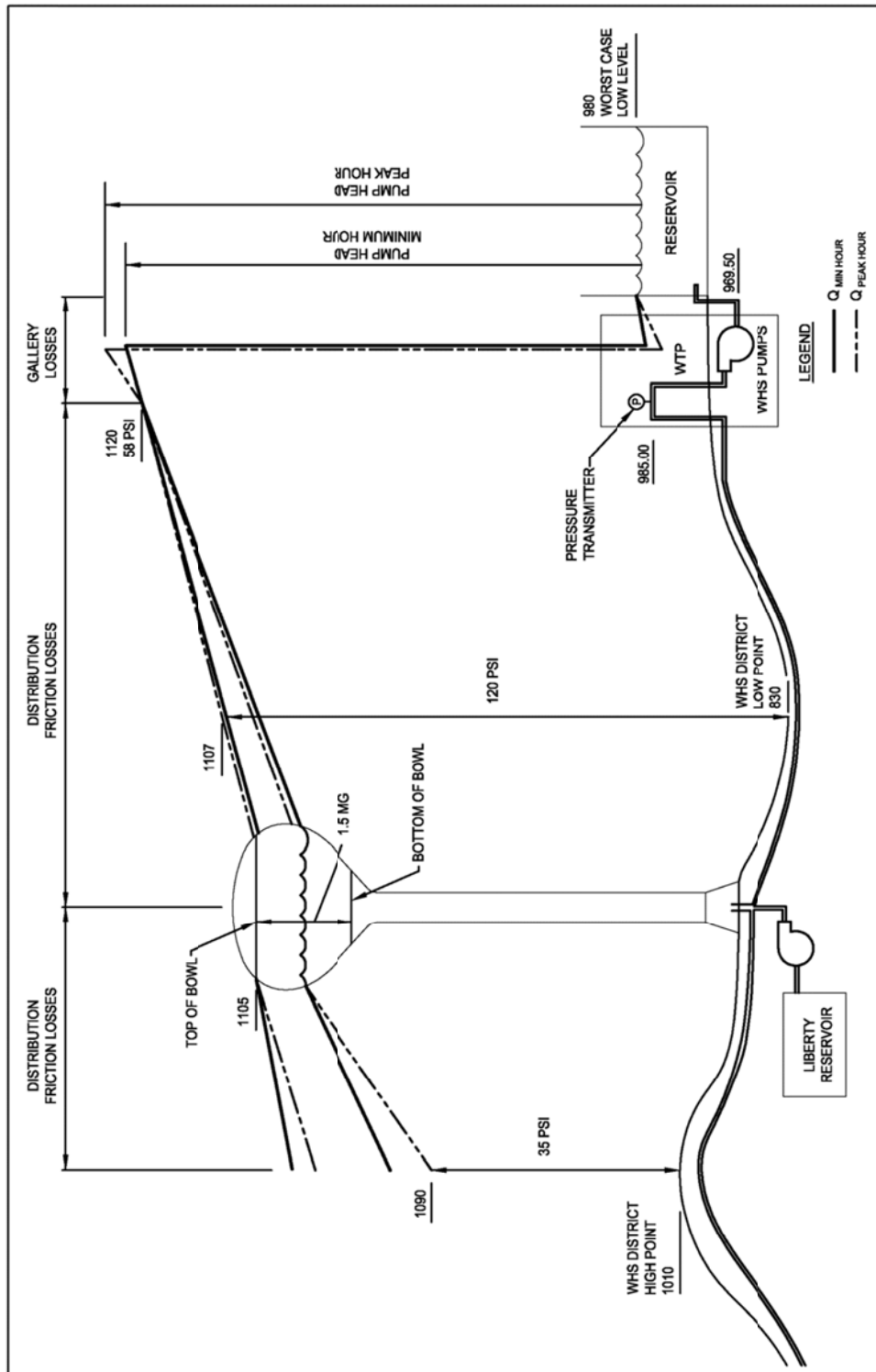
The dip in the head curve between 9 and 10 MGD is due to the pump station transitioning from a one pump operation to a two pump operation. The friction losses decrease slightly during this transition due to the total flow being split between each pump and its appurtenant piping. This only occurs in the pump station piping between the main suction header and the main discharge header.

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September, 2014





Client/Project
 CITY OF ANN ARBOR
 WEST HIGH
 SERVICE PUMPS
 Figure No. 6-2
 Title DEMAND IMPACTS ON HGL
 WITH ELEVATED TANK

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Stantec

6.3.2 WHS Pump Upgrades

With an elevated tank, the required discharge head from the WHS pump station increases by approximately 15 feet with the elevated tank at a full elevation. Although the actual tank level will fluctuate, it is necessary for design purposes to determine the impact of this 15-foot head increase on the required pump horsepower in the WHS station.

For pump selection purposes with an elevated tank, it is assumed that the peak hour design flow remains unchanged at 12,100 gpm while the TDH increases from 135 feet to 150 feet. As described earlier in this report, the approximate horsepower for a pump at a given design point can be determined by the following relationship:

$$\text{HP} = \text{GPM} \times \text{TDH} \times \text{Specific Gravity} / (3,960 \times \text{Pump eff.} \times \text{Motor eff.})$$

Therefore, the non-overloading HP requirements for three and four pump configurations with the higher design TDH of 150 feet are approximately:

- 3 Pump Configuration: $\text{HP} = 6,000 \times 150 \times 1.0 / (3,960 \times 0.87 \times 0.95) = 275$ hp each
- 4 Pump Configuration: $\text{HP} = 4,000 \times 150 \times 1.0 / (3,960 \times 0.87 \times 0.95) = 184$ hp each

For the three pump configuration, this indicates that the motor size would need to be increased from 250 hp to 300 hp to maintain a non-overloading rating for the entire pump curve. For the four pump configuration, the motor size of 200 hp would remain the same.

Review of the pump curve families for the preliminary pump selections described in Section 3.4.1 indicates that the same pumps with slightly larger impellers could be used to meet the higher TDH requirements.

6.3.3 Proposed Pressures

Proposed pressures due to the addition of an elevated tank at the Liberty site change the maximum and minimum pressure conditions depending on location in relation to the proposed tank. Some additional parcels exceed 110 psi in the Crest area and along the Gravity District boundary. This is due to the need to increase the discharge pressure from the WHS pump station and that these areas are within the influenced area between the station and proposed elevated tank. No additional parcels are added to the low pressure area around the high point. All other areas have pressures that are within acceptable values based on the Basis of Design requirements. High and low pressures are provided on **Figure 6-3 and 6-4**, respectively.

6.3.4 Proposed Velocities

The majority of the district contains acceptable velocities. The 12-inch water main along Jackson Road has the same velocity issues listed in Section 2.0. However, the 24-inch discharge water main from the WHS pumps to the twin trunk line water mains in Sunset Drive

has a velocity of less than 5 ft/s due to the pumps not needing to transport peak hour demands. This flow in the water main is reduced to approximately 8,000 gpm since peak hour demands are supplied by the elevated tank. Peak hour velocities are provided on **Figure 6-5**.

6.3.5 Available Fire Flow

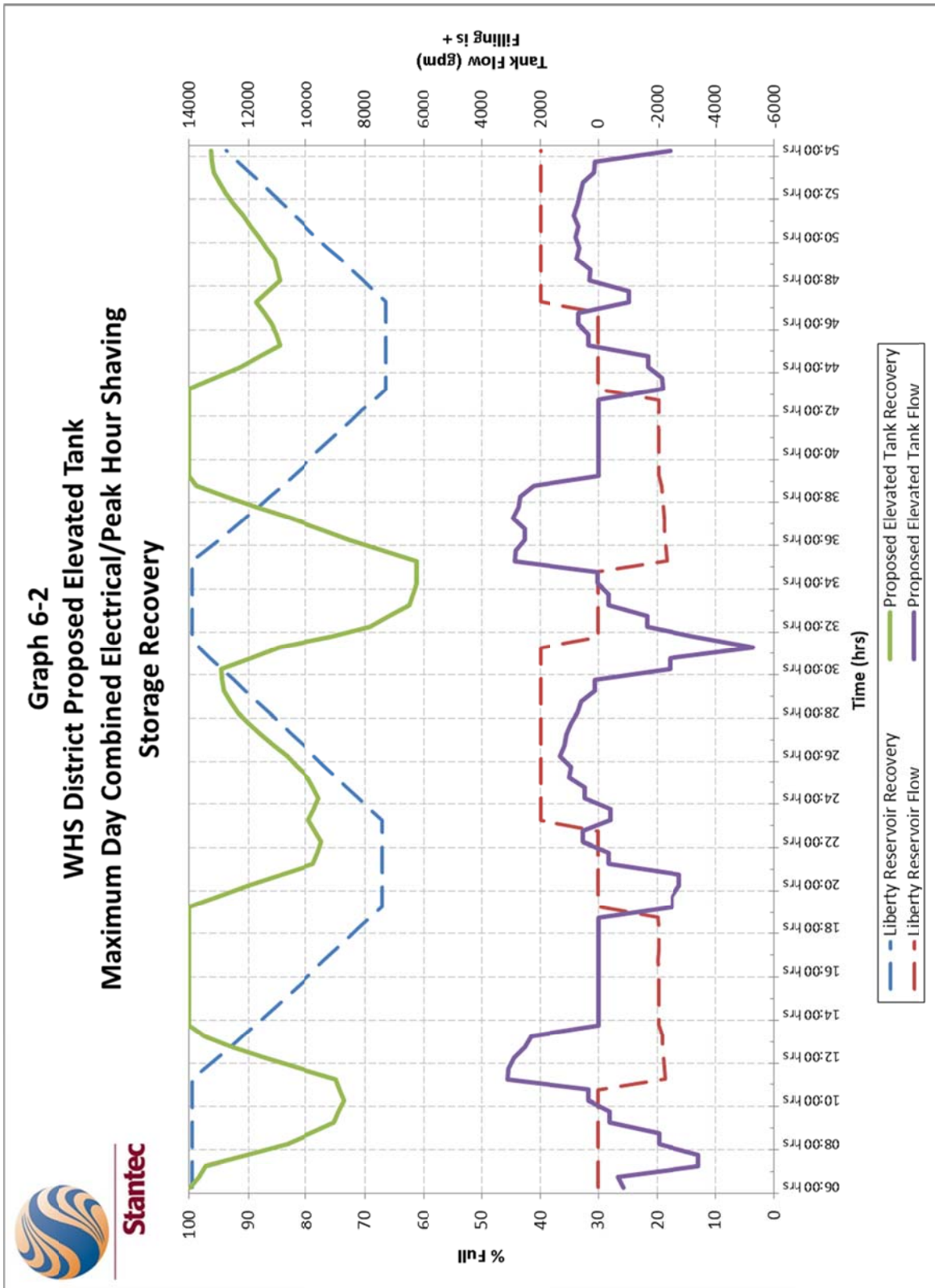
Available fire flows are similar to those presented in Section 2.0. This is due to the fact that the elevated tank supports a similar HGL supply as the Liberty Pump Station. Fire flows north of the elevated tank increase due to the higher supply HGL from the WHS Pumps of 1,120 feet. Available fire flow due to WHS Pump improvements is provided on **Figure 6-6**.

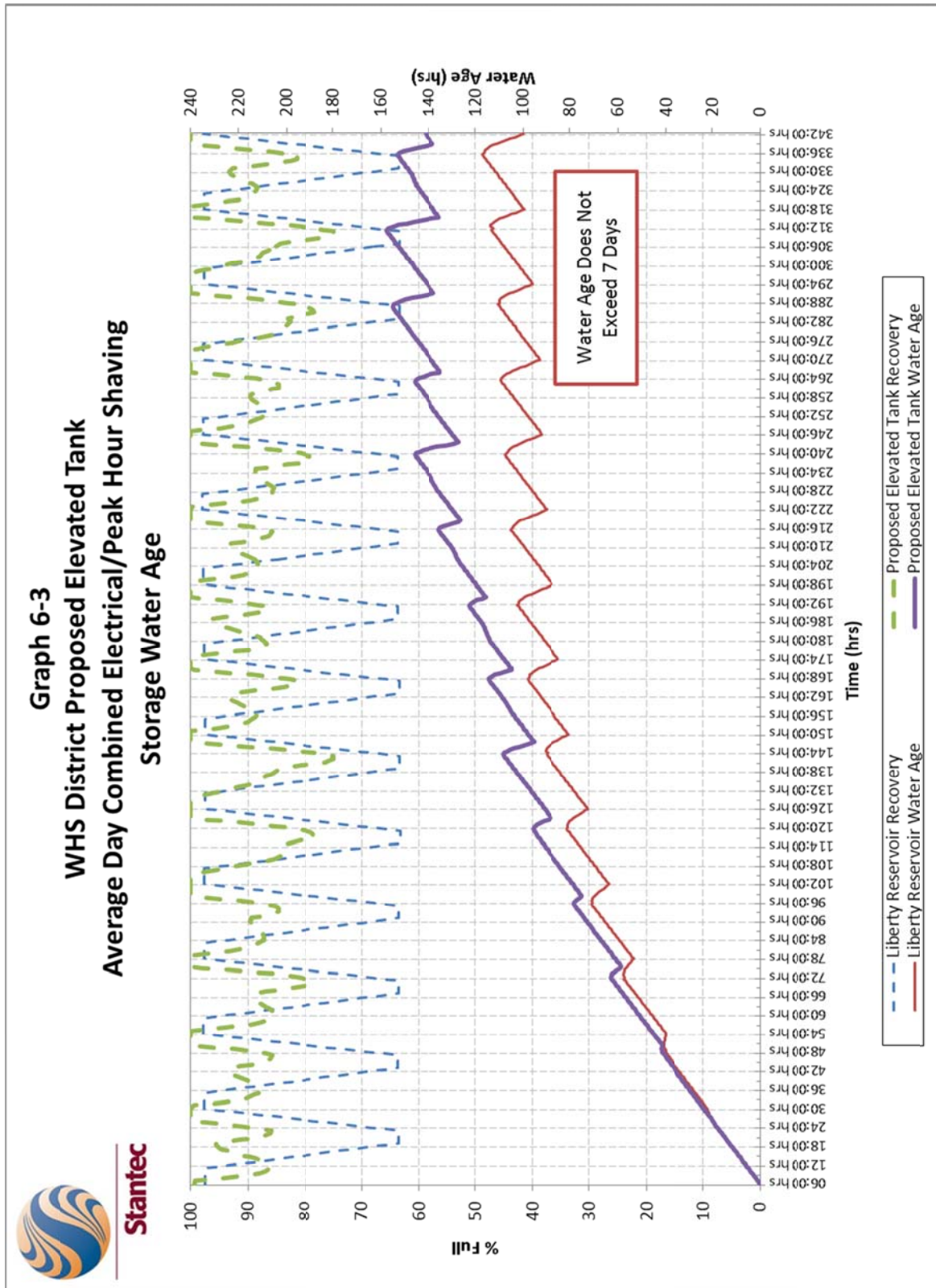
6.3.6 Storage Recovery

Storage recovery of the elevated tank is interconnected with the ground storage reservoir. The elevated tank will finish filling the ground storage reservoir in the early morning hours as system demands begin to exceed the WHS Pump capacities when they are set to the maximum day average flows. The Liberty Pump Station will then assist with recovery of the elevated tank during electrical peak shaving periods. Tank recovery is provided in **Graph 6-2**. Water age was reviewed as a check to determine if enough water was being replaced in each storage facility to maintain water quality. The water age in the Liberty Reservoir and elevated tank is approximately 100 hours old with the WHS pump improvements with the Liberty Reservoir water age increasing to approximately 160 hours during winter time operations. The water age is provided in **Graphs 6-3**.

6.3.7 Electrical Upgrades

As described above in Section 7.3.2, the WHS motors would need to be upsized from 250 hp to 300 hp in a three pump configuration. In a four pump configuration, there would be no change to the motor horsepower. In either scenario, there would be no change required to the proposed size of the transformer (2000kVA) or switchgear/switchboard (3000A).





6.3.8 District Operational Strategy

During typical operations, the WHS Pumps would be set to maintain a discharge pressure of +/- 58 psi and supply average daily demands based on seasonal conditions. The Liberty Pump Station will continue to be utilized for electrical peak shaving during the hours of 11:00 AM to 7:00 PM. There are two low flow conditions that can occur in the district that could cause the WHS Pumps to operate in a flow range below the manufacturers recommended minimum value.

This low flow can occur during the following scenarios:

- Average day electrical peak shaving
- Nighttime demand periods

Low Flow during Average Day Electrical Peak Shaving

Modeling indicates that the Liberty Pump Station can discharge at an HGL of approximately 1,105 feet, and has the ability to fill the elevated tank. Modeling indicates that during electrical peak shaving, the Liberty Pump Station provides approximately 2,100 to 2,500 gpm (tank level dependent) to the district and elevated tank with one pump in operation. This value can meet and even exceed the district demands during portions of the electrical peak shaving period. With an elevated tank within the system, the Liberty Pump Station will not overpressurize the district when demands are less than available pumping capacity, since excess flow is pushed to the elevated tank and pressures are controlled by the HGL of the elevated tank.

Further modeling indicates that when WHS Pump flows are less than 1,500 gpm during electrical peak shaving hours, the WHS pumps could be set to turn off. When district demands begin to exceed the capacity of the Liberty Pump Station pumps, the elevated tank will supply the additional required demands. However, should pressures at the WTP decrease too much, the WHS Pumps can turn back on when pressures at the WTP are less than 47 psi or just before the electrical peak shaving period ends. The key to this operation is the Eisenhower Valve.

The Eisenhower Valve is utilized as a pressure relief when the Scio Valve is closed and for water quality purposes, if necessary. It is a butterfly valve that is opened 10% to achieve this purpose and typically passes 400 to 500 gpm when opened. Under the low flow scenario discussed above, this valve releases too much pressure at this setting and district pressures operate in the 40 psi range rather than 50 to 60 psi. It is assumed that lower settings to better control the pressure relief are inefficient and difficult to control due to the type of valve. Closing the valve in this scenario over pressurizes the district, if the elevated tank is full, when demands are less than the Liberty Pump Station Capacity.

Modeling has indicated that the elevated tank can be refilled during electrical peak shaving due to its proximity to Liberty Pump Station. In order to better control district pressures, the Eisenhower Valve should be converted to a pressure breaker valve and set at approximately

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110 psi. This would allow for better control of south end district pressures and could be adjusted to still pass flow to the Southeast District for water quality purposes, when necessary. However, it should be noted that utilizing the Eisenhower valve to feed the Southeast High Pressure District could possibly lead to water quality (water age) concerns in the district. The WTP area pressures then operate in the 50 psi range during minimum hour electrical peak shaving conditions.

Another option would be to change the butterfly valve with a plug valve that has a more linear flow control curve. This could provide similar pressure relief without providing as much flow to the Southeast Pressure District.

Low Flow during Nighttime Demand Periods

Nighttime periods of low flow are resolved due to the usage of Liberty Pump Station as an electrical peak shaver and needing to recover the reservoir and elevated tank. Reservoir and elevated tank recovery should occur during the nighttime period. It has already been established that electrical peak shaving utilizes approximately 1 MGD that needs to be recovered between the hours of 11:00 PM and 6:00 AM. This requires a minimum fill rate of approximately 2,400 gpm, which is well above the manufacturer recommended pump minimum flows and does not yet include the minimum hour district demands or flows required to recover the elevated tank.

There is inherent risk with the options described above. While the model indicates that the system operations listed above are feasible, City staff would consider those operations to be risky due to the possible modes of failure that could impact these WHS District supply pumps by turning them on and off on a regular basis. Excessive start/stop of the WHS pumps is not only avoided as part of standard operating procedures at the WTP, but is also hard on the equipment itself. In order to reduce this risk, it is preferred to have at least one pump in operation at the WHS Pump Station at all times and utilize Liberty Pump Station for electrical peak shaving.

This scenario may result in WHS District pumping demands falling below recommended minimum pumping values for short periods of time. The low flow periods would be based on actual daily system demand patterns, the filling status of Scio and WHS storage, and whether the Southeast High Pressure District can take flow through the Eisenhower Valve to fill the Manchester Tank. Due these variable factors, determining an accurate amount of time that the low flows would be less than recommended values is not possible. In order to provide a method in which the WHS Pump Station could be kept operating above the recommended minimum flow for one pump, a control valve could be added between the WHS District and the Gravity District which is connected to the Finished Water Reservoir. This control valve should be a plug valve in order to provide the best control of the amount of flow between the districts.

6.4 EMERGENCY EHS/WHS OPERATIONS

The City desired to evaluate the performance of the WHS pumps supplying EHS District or the EHS pumps supplying the WHS District.

6.4.1 Hydraulics

The proposed pumps for the WHS District will have a firm capacity of 17.4 MGD and a total capacity of approximately 20 MGD. The EHS District is considered to have a firm capacity of 15.5 MGD and a total capacity of 25 MGD. These capacities exceed the Year 2035 total system average day demand of 15.5 MGD for the combined districts.

It is assumed that during emergency operations due to either the EHS or WHS bank of pumps being out of operation, the City has an emergency plan that notifies the public and major customers to reduce water usage and that total system demands can be reduced to average day demands. Only under this assumption, both the WHS and EHS bank of pumps have the capacity to meet emergency demands.

The issue then is whether the pumps can supply demand with enough head to maintain both districts. Review of the model indicates that the EHS Pumps provide flows at a discharge HGL of approximately 1,100 feet to the EHS District. This is very similar to the required operating discharge HGL without the proposed elevated tank of 1,105 feet. It is therefore feasible for the EHS pumps to supply enough HGL to the WHS District to maintain system pressures.

With the elevated tank, the proposed WHS Pumps are designed to provide a discharge HGL of approximately 1,120 feet. If the proposed pumps have VFDs, they are adjustable to provide a lesser discharge HGL. Based on preliminary pump curve reviews, the proposed WHS Pumps should be able to operate under these emergency conditions.

A model scenario of each emergency condition was developed and it was determined that either bank of pumps could supply the entire system if average day demands or less can be maintained.

6.4.2 Existing Piping

The existing interconnection between the EHS and WHS is in a concrete below grade vault located north of the transfer pumps. The EHS and WHS piping is separated by a flanged 30-inch butterfly valve normally closed. Downstream of the valve are individual magnetic flow meters which separately meter the two district's flow.

6.4.3 Proposed Improvements

Alternatives involving reuse of the existing space (i.e. Alternatives 1, 2, and 3) would utilize the same interconnection. However, a new pump station (i.e. Alternatives 4, 5 and 6) would require that a new interconnection be constructed.

As shown in the Alternative 4 – New Pump Station east of Lab proposed site plan, it is proposed that the new interconnection between EHS and WHS be located with the yard piping north of the Administration Building. The WHS would tee off of the new 30-inch discharge watermain and connect to the 30-inch EHS with an isolation butterfly valve. The valve would be constructed in a manhole. The yard piping is tight and the area is somewhat congested. However, advantageously, the piping runs fairly shallow. Care will need to be taken when designing pipe restraint as thrust blocks cannot bear on adjacent piping.

6.5 RECOMMENDATIONS

Based on the hydraulic analysis, the following recommendations should be considered for distribution system improvements to add an elevated tank to the WHS District:

- Provide a 1.5 MG elevated tank at the Liberty Pump Station site with a top of bowl elevation of 1,105 feet MSL and an overflow just above that.
- Pumps should be designed to supply a demand of 12,100 gpm at an HGL of 1,120 feet MSL at the WTP. This equates to a WHS Pump discharge pressure of 58 psi at the WTP relative to the existing discharge measurement location.
- WHS Pumps should be designed based on the system head curve provided in **Graph 6-1**.
- Increase the WHS motor hp from 250 to 300 hp in a three pump configuration. In a four pump configuration, the WHS motor hp would remain unchanged with 200 hp.
- Operate WHS Pumps based on providing maximum day demands and allowing peak hour demands to be provided by the elevated tank. Flow rate from the WHS pumps should be regulated to approximately 8,000 gpm.
- Consider a pump control valve between the WHS and Gravity District to allow for operating pumps at better efficiencies during low demand conditions.
- Continue to utilize Liberty Pump Station as an electrical peak shaving facility.
- Revise converted Eisenhower Valve pressure settings based on elevated tank impacts.