

**PROFESSIONAL SERVICES AGREEMENT BETWEEN
FISHBECK, THOMPSON, CARR & HUBER, INC.
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 48103 ("City"), and Fishbeck, Thompson, Carr & Huber, Inc.

("Contractor") a(n) Michigan Corporation
(State where organized) (Partnership, Sole Proprietorship, or Corporation)

with its address at 1515 Arboretum Drive SE, Grand Rapids, MI 49546
agree as follows on this 1st day of April, 2015.

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

I. DEFINITIONS

Administering Service Area/Unit means Public Services Area.

Contract Administrator means Water Treatment Services Manager, 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 and delivered to City by Contractor under this Agreement

Project means Water Treatment Plant West High Service Elevated Storage Tank Project.
Project name

II. DURATION

This Agreement shall become effective on April 1, 2015, and shall remain in effect until satisfactory completion of the Services specified below unless terminated as provided for in Article XI.

III. SERVICES

- A. The Contractor agrees to provide Professional Consulting Engineering Services
type of service
("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 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 quality performed by persons regularly rendering this type of service. Determination of acceptable quality shall be made solely by the Contract Administrator.
- C. The Contractor 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 Contractor may rely upon the accuracy of reports and surveys provided to it by the City (if any) 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. INDEPENDENT CONTRACTOR

The Parties agree that at all times and for all purposes under the terms of this Agreement each Party's relationship to any other Party shall be that of an independent contractor. Each Party will be solely responsible for the acts of its own employees, agents, and servants. No liability, right, or benefit arising out of any employer/employee relationship, either express or implied, shall arise or accrue to any Party as a result of this Agreement.

V. COMPENSATION OF CONTRACTOR

- A. The Contractor shall be paid in the manner set forth in Exhibit B. Payment shall be made monthly, unless another payment term is specified in Exhibit B, following receipt of invoices submitted by the Contractor, and approved by the Contract Administrator.
- B. The Contractor will be compensated for Services performed in addition to the Services described in Section III, only when the scope of and compensation for those additional Services have received prior written approval of the Contract Administrator.
- C. The Contractor shall keep complete records of work performed (e.g. tasks performed/hours allocated) so that the City may verify invoices submitted by the Contractor. Such records shall be made available to the City upon request and submitted in summary form with each invoice.

VI. INSURANCE/INDEMNIFICATION

- A. The Contractor 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 act(s) or omission(s) giving rise to the claim were made by the Contractor, 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 satisfactory to the City demonstrating it has obtained the policies and endorsements required by Exhibit C.

- B. Any insurance provider of Contractor 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, Contractor 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 Contractor or its employees and agents occurring in the performance of or breach in this Agreement, except to the extent that any suit, claim, judgment or expense are finally judicially determined to have resulted from the City's negligence or willful misconduct or its failure to comply with any of its material obligations set forth in this Agreement.

VII. COMPLIANCE REQUIREMENTS

- A. Nondiscrimination. The Contractor agrees to comply, and to require its subcontractor(s) to comply, with the nondiscrimination provisions of MCL 37.2209. The Contractor further agrees to comply with the provisions of Section 9:158 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. If the Contractor is a "covered employer" as defined in Chapter 23 of the Ann Arbor City Code, the Contractor agrees to comply with the living wage provisions of Chapter 23 of the Ann Arbor City Code. The Contractor 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.

VIII. WARRANTIES BY THE CONTRACTOR

- A. The Contractor warrants that the quality of its Services under this Agreement shall conform to the level of quality performed by persons regularly rendering this type of service.

- B. The Contractor warrants that it has all the skills, experience, and professional licenses necessary to perform the Services specified in this Agreement.
- C. The Contractor 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 Contractor 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.
- E. The Contractor warrants that its proposal for services was made in good faith, it arrived at the costs of its proposal independently, without consultation, communication or agreement, for the purpose of restricting completion as to any matter relating to such fees with any competitor for these Services; and no attempt has been made or shall be made by the Contractor to induce any other perform or firm to submit or not to submit a proposal for the purpose of restricting competition.

IX. OBLIGATIONS OF THE CITY

- A. The City agrees to give the Contractor 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 Contractor of any defects in the Services of which the Contract Administrator has actual notice.

X. ASSIGNMENT

- A. The Contractor 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, Contractor 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 Contractor shall retain the right to pledge payment(s) due and payable under this Agreement to third parties.

XI. 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. The waiver of any breach by any party to this Agreement shall not waive any subsequent breach by any party.

- 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 Contractor, except the obligation to pay for Services actually performed under the Agreement before the termination date.
- C. Contractor 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 Contractor. The Contract Administrator shall give Contractor written notice of such non-appropriation within thirty (30) days after it receives notice of such non-appropriation.
- D. The provisions of Articles VI and VIII shall survive the expiration or earlier termination of this Agreement for any reason. The expiration or termination of this Agreement, for any reason, shall not release either party from any obligation or liability to the other party, including any payment obligation that has already accrued and Contractor's obligation to deliver all Deliverables due as of the date of termination of the Agreement.

XII. REMEDIES

- A. This Agreement does not, and is not intended to, impair, divest, delegate or contravene any constitutional, statutory and/or other legal right, privilege, power, obligation, duty or immunity of the Parties.
- B. All rights and remedies provided in this Agreement are cumulative and not exclusive, and the exercise by either party of any right or remedy does not preclude the exercise of any other rights or remedies that may now or subsequently be available at law, in equity, by statute, in any agreement between the parties or otherwise.
- C. Absent a written waiver, no act, failure, or delay by a Party to pursue or enforce any rights or remedies under this Agreement shall constitute a waiver of those rights with regard to any existing or subsequent breach of this Agreement. No waiver of any term, condition, or provision of this Agreement, whether by conduct or otherwise, in one or more instances, shall be deemed or construed as a continuing waiver of any term, condition, or provision of this Agreement. No waiver by either Party shall subsequently effect its right to require strict performance of this Agreement.

XIII. 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 CONTRACTOR, it shall be addressed and sent to:

Fishbeck, Thompson, Carr & Huber, Inc.
Attn: John Willemin, PE
1515 Arboretum Drive, SE
Grand Rapids, MI 49546

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

City of Ann Arbor
Attn: Brian Steglitz, PE
(insert name of Administering Service Area Administrator)
301 E. Huron St.
Ann Arbor, Michigan 48103

XIV. CHOICE OF LAW AND FORUM

This Agreement will be governed and controlled in all respects by the laws of the State of Michigan, including interpretation, enforceability, validity and construction, excepting the principles of conflicts of law. 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.

XV. OWNERSHIP OF DOCUMENTS

Upon completion or termination of this Agreement, all documents (i.e., Deliverables) prepared by or obtained by the Contractor 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 Contractor 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 Contractor.

Unless otherwise stated in this Agreement, any intellectual property owned by Contractor prior to the effective date of this Agreement (i.e., Preexisting Information) shall remain the exclusive property of Contractor 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.

XV. CONFLICTS OF INTEREST OR REPRESENTATION

Contractor certifies it has no financial interest in the Services to be provided under this Agreement other than the compensation specified herein. Contractor 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.

Contractor agrees to advise the City if Contractor has been or is retained to handle any matter in which its representation is adverse to the City. The City's prospective consent to the Contractor's representation of a client in matters adverse to the City, as identified above, will not apply in any instance where, as the result of Contractor's representation, the Contractor has obtained sensitive, proprietary or otherwise confidential information of a non-public nature that, if known to another client of the Contractor, could be used in any such other matter by the other client to the material disadvantage of the City. Each matter will be reviewed on a case by case basis.

XVII. 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.

XVIII. EXTENT OF AGREEMENT

This Agreement, together with any affixed exhibits, schedules or other documentation, constitutes the entire understanding between the City and the Contractor 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. No terms or conditions of either party's invoice, purchase order or other administrative document shall modify the terms and conditions of this Agreement, regardless of the other party's failure to object to such form. This Agreement shall be binding on and shall inure to the benefit of the parties to this Agreement and their permitted successors and permitted assigns and nothing in this Agreement, express or implied, is intended to or shall confer on any other person or entity any legal or equitable right, benefit, or remedy of any nature whatsoever under or by reason of this Agreement. This Agreement may only be altered, amended or modified by written amendment signed by the Contractor and the City. This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which together shall be deemed to be one and the same agreement.

FOR CONTRACTOR

By _____
Type Name
Its

FOR THE CITY OF ANN ARBOR

By _____
Christopher Taylor, Mayor
By _____
Jacqueline Beaudry, City Clerk

Approved as to substance

Steven D. Powers, City Administrator

Craig Hupy, Service Area Administrator

Approved as to form and content

Stephen K. Postema, City Attorney

**EXHIBIT A
SCOPE OF SERVICES**

EXHIBIT A

WHS Elevated Storage Tank Project

Scope of Work

Project Understanding

FTCH has reviewed and understands the project requirements and background information in the request for proposal for the Water Treatment Plant West High Service (WHS) Elevated Storage Tank Project, RFP No. 913, issued by the City of Ann Arbor. Our review included the WHS Pump Upgrades study completed by Stantec and included as Appendix C of the RFP. We attended the preproposal meeting held at the water plant and acknowledge receipt of the presentation slides and Addendum 1.

Our proposal is based on the RFP and supporting information provided by the City. We will limit repetition of project background information to that which affects our approach and/or fees.

In the study phase, FTCH will review and investigate options, present them to the City, and recommend the direction to proceed for all major items that affect system performance and project cost. The City and its residents will be involved in these decisions.

We understand the previous modeling effort for the tank should be considered preliminary, and its primary function was as the basis of improvements to the high-service pumps serving the WHS pressure district, not as a final basis of design for the current tank project. The study phase will include a significant modeling component to develop and support the proposed improvements. We understand the analysis of combining the East and WHS districts has not yet been modeled.

The proposed tank will require significant changes in the way the City operates its water system. The study phase will provide a thorough understanding of effects on the system and an opportunity to give input and direction where alternatives exist. At the onset of the project, we will seek guidance from the City on understanding the intricacies of system operation. While many details will be gleaned from the hydraulic model, staff input from those that operate and manage the water system will be invaluable. We look forward to working with City staff on this project.

The proposed tank site in South Maple Park (2675 Liberty Road) will be evaluated as part of the study phase as required, but was assumed as the final tank location for our proposal. Based on our review of City zoning, South Maple Park is zoned PL – public land district. City zoning use regulations allow PL-designated areas to be used for “essential services, buildings containing essential services, and electrical substations.” Our interpretation is that the proposed tank falls under this use category and is similar in use to the existing Liberty Pump Station and Reservoir, which occupy the same site.

The proposed tank site was evaluated using the Federal Aviation Administration (FAA) Notice Criteria Tool, which indicated the project must be filed with the FAA because it may interfere with navigation signal reception at the Ann Arbor Municipal Airport (ARB).

FTCH reviewed the project with Linn Smith at the Michigan Department of Transportation (MDOT). Mr. Smith sent us information regarding ARB and construction limitations for structures within proximity to the airport. Ann Arbor does not have an airport zoning ordinance adopted under the Michigan Airport Zoning Act (Act 23 of 1950). The Michigan Aeronautics Commission (MAC) did approve an Airport Approach Plan for this airport, which includes height restrictions as described in FAA Part 77. Based on the preliminary review, it appears the proposed tank would be permitted at the site, but an instrument approach procedure study should be conducted by the FAA as part of the approval process.

The site was not reviewed in detail for discharge of tank overflow or drain water. Provisions for detention or discharge of overflow/drain water commonly include discharge to the storm sewer. Some level of onsite detention is desirable for discharge equalization. Tank design features will be incorporated to avoid overflowing the tank. Nevertheless, provisions to handle overflow will be included in the study phase.

The proposed tank will have a noticeable effect on the Ann Arbor community. The tank will improve the reliability of the water system, and some residents will notice improvements in pressures at their homes. The tank will also be a major change in the City's skyline and affect the public property and nearby private property owners. Experience with similar projects has shown that opposition can be intense, and concerns must be heard and addressed. We appreciate the City's approach of involving the public early on, to explain the project and listen to public concerns. Offering the tank space for public art is another great concept to improve public acceptance. We understand the focus on art and culture in Ann Arbor may bring about great debate and present challenges in selecting art for the tank and achieving acceptance of the project. We are comfortable with these challenges.

FTCH will team with three subconsultants. HART will be our public engagement subconsultant; Materials Testing Consultants, Inc. will be our geotechnical subconsultant; and Dixon Engineering will be our tank welding and painting subconsultant. All other professional services will be completed by FTCH staff out of our Grand Rapids and Novi offices.

Scope of Services

Study

We propose the following work plan for the study phase of the WHS Elevated Storage Tank project.

1. Project kickoff meeting/workshop. Assemble the project team from the City, FTCH, and HART to review project goals and expectations, develop a communications protocol, and identify critical success factors and known (or perceived) obstacles. Before the meeting, FTCH will provide a list of the data and information we need from the City, such as the hydraulic model, water demand information, and other background data on the tank project. An open discussion format will provide the opportunity for all team members to provide input on the project.
2. FTCH will review the *2011 WHS Pump Replacement Report* in detail, in conjunction with the hydraulic model. Questions regarding the study or system operations will be presented to the City at the kickoff meeting.
3. FTCH will review the ground and elevated storage capacity within the district and determine what volume of additional storage is needed. The evaluation of the proposed elevated tank will take into consideration the volume of ground storage in the district. The size and elevation of the proposed tank will be evaluated. Fire flow requirements, emergency storage volumes, and equalization volumes will all be considered in the tank sizing recommendations. The sizing recommendations will rely heavily on hydraulic model results. A basis of design document summarizing the recommended tank parameters will be provided for City review and comment, as described in the RFP.
4. FTCH will use the existing model to evaluate tank size, location, and elevation. Both ground and elevated storage will be considered and evaluated. We will evaluate the possibility of adding additional ground storage to reduce the volume of elevated storage that may be required. Alternate sizes, locations, and elevations will be evaluated. We will model multiple demands scenarios, including:
 - Minimum, average, and maximum day
 - Peak hour
 - Maximum day + fire flow

Tank sizing evaluations will also consider future population projections. The rate of future demand growth in the WHS district will impact the volume of storage required. An analysis will be completed to determine what changes in demand would require a different size of tank, either larger or smaller. A sensitivity analysis will be completed to determine district demand trigger points that would change the size of the tank. If a larger tank would require additional transmission main improvements to get water to the tank, this would also be evaluated on a preliminary basis. A table will be developed that describes the system demand that correlates with various tank sizes.

A model analysis that combines the East and WHS districts will be completed. We understand that the East and WHS districts operate at a similar hydraulic grade line, with an approximate 4 pounds per square inch (psi) difference between the two districts during normal operation. We also understand that the two districts are sometimes operated together at certain times of the year with no problems. We will use the hydraulic model

to confirm that the recommended tank size and location is compatible with combining the districts. We will also design any modifications to the Liberty Pump Station design point to be compatible with the combined district. We will obtain information from the City on the details of the interconnections that are used to combine the two districts. We will review the output from the model with the City for consideration.

5. Perform modeling using InfoWater; FTCH uses InfoWater extensively. We will follow the City's modeling standards, so that model output drawings are in the proper format and the model meets City standards. We will obtain the City's modeling standards at the beginning of the project.
6. Develop a matrix comparing alternate tank types. The comparison will include factors such as capital costs, re-coating and maintenance costs, appearance, space available for other uses, security, etc. We expect the City will want to compare composite and spheroid tanks; if there are other types the City would like to compare, we will include them. Our experience is that composite and spheroid style tanks are the most cost-effective in the range of sizes under City consideration from a capital cost and life cycle cost basis. If additional ground storage tank volume is determined to be a feasible alternative, different types of ground storage tanks will also be evaluated.
7. Materials Testing Consultants, Inc. will perform a geotechnical investigation of the site as a subconsultant to FTCH. FTCH and MTC have worked extensively together on numerous tank and water plant projects. Soil borings will be completed and analyzed to confirm that the site is feasible and to determine the requirements for the tank foundation. The geotechnical evaluation will include three borings (80 feet deep) around the perimeter of the proposed tank base and two shallow borings for the access road and onsite water main installation. Two additional shallow borings will be completed at the location of the water main and access road and detention basin. A report summarizing the foundation recommendations will be provided. The recommendations will rely on MTC's geotechnical evaluation, with input from FTCH structural engineers. We recommend the tank location be finalized before completing soil borings to avoid additional costs. This will require input from the planning commission and other stakeholders.
8. FTCH will evaluate the merits of providing a cathodic protection system and present them to the City. We have specified several cathodic protection systems for new tanks and are familiar with the requirements. Sometimes these systems are installed when the tank is new, but do not need to be activated until later, as coatings begin to degrade. At a minimum we recommend the tank specifications include provisions to add cathodic protection in the future. This generally includes the welded support brackets in the wet interior of the tank. These provisions are negligible in cost relative to the total project cost and avoid modifying the tank or damaging the coatings if a system is installed after the tank is constructed. We will present the pros and cons of installing a cathodic protection system.
9. We will contact the applicable telecom companies to coordinate their requirements to accommodate telecom equipment on the tank. Several recent projects have included provisions for mounting antennae and equipment, both on the roof of the tank and on the sidewalls near the bottom of the tank bowl. We also typically provide multiple penetrations through the tank walls or foundations for cable installation. By coordinating with these providers ahead of time, we can be sure we meet their needs and modifications are not needed after the original construction. Dixon Engineering will participate in this task. We request that the City provide us with the names and contact information for the companies they would like to consider.
10. The existing Liberty pumps may require modification. We will use the hydraulic model to determine how the addition of the tank will affect pump station capacity.

We will also determine pump capacity at the increased head condition. Depending where the pumps operate on their curves at the revised condition, it may be feasible to accept the reduced pumping capacity and not modify the pumps. Our scope assumes the pumps will require replacement or modification, such as impeller changeout or motor changeout. If the pump design point changes, we assume larger motors may be required on the modified pumps, and new conductors would also be required. We have also assumed the existing motor control center equipment (or similar) has adequate space and capacity to accommodate the increased electrical loads. Our modeling and evaluation will confirm what improvements, if any, are needed to the Liberty Pump Station pumps.

Supervisory Control and Data Acquisition (SCADA) system improvements must be added to the new storage tank. This may require some modifications to the Liberty Pump Station. FTCH staff, including a process engineer, electrical engineer, and master electrician, will visit the site to investigate the existing condition of the Liberty Pump Station and the suitability of incorporating necessary modifications. We will also visit the tank site and the East and WHS pump stations during this visit.

FTCH will complete design of the Liberty Pump Station to the degree necessary to develop a preliminary cost estimate.

11. FTCH will evaluate the performance of Liberty's underground reservoir in conjunction with the new tank. The model will be used to evaluate water flow and short circuiting between the tanks. Extended period simulations will be required to develop a proposed operating scenario for the tank and reservoir. In the proposed elevated tank, mixing systems will be evaluated to improve water quality
12. FTCH will use the hydraulic model to evaluate the performance of the WHS pumps with the new tank. We understand that the proposed tank was taken into consideration during the recent modifications of the WHS pumps, and we do not expect that any changes to the pumps will be required. Modeling will confirm this assumption.
13. FTCH will use the hydraulic model to evaluate the performance of the EHS pumps to pump to the WHS district. Similar to the WHS pump evaluation, we will determine the reduced capacity of the pumps and what modifications may be needed. FTCH assumes no modifications to the EHS pumps will be designed, and the existing pumps will be able to pump to the combined district at a reduced capacity under this alternate operating scenario. We understand that the EHS pumps can currently pump to the WHS district, and do not anticipate any significant change in pumping capacity with the new tank in place.
14. Tank sequence of operations:
 - a. Evaluate using the hydraulic model.
 - b. Develop new sequence with the tank in operation. Recommend pump on and off levels.
 - c. Develop a modified sequence for winter operations, likely with lower operating depths in the tank to reduce the potential for ice formation.
 - d. Review operational settings at the Eisenhower Boundary Valve and recommend alternate settings. FTCH assumes the existing Eisenhower Valve will remain in service (no new valve).
 - e. Evaluate electrical peak shaving scenarios. Pumping at night to fill the tank will reduce the amount of electricity consumed during peak billing hours, and may reduce the City's energy costs.
 - f. Consider minimum volumes that must be maintained for equalization, emergency storage, and fire flow under all operating scenarios.
 - g. Some areas of the system have pressures exceeding 100 psi under current operations. This project will further increase pressures in some of these areas. The areas of the distribution system that may have problematic pressure increases will be identified as part of the study. A list of potential solutions to relieve the low pressure problems will be provided. The addition of pressure reducing valves (PRVs) in some of these areas may be beneficial, as a separate, future solution to high pressures.
15. FTCH will develop and execute a public engagement plan.

Effective public engagement requires timely and clear dissemination of information, confidence in the technical work, and trust in the people presenting it. The exchange of information and ideas between various stakeholders, including City and Township leadership, local residents, neighborhood associations, the Art Commission, and local media will be key to a project that is ultimately embraced by the community. Hart will facilitate this effort via a series of public/art council meetings designed to foster a dialogue between these stakeholder groups, gather input on the proposed project, and address any concerns. FTCH staff will be in attendance to present and answer questions on technical information as applicable.

As the agendas and concerns of the neighbors/general public and the art council are not necessarily in line with one another, we recommend breaking these two interested parties into separate meeting groups. A

tentative public engagement plan is proposed below. Hart will participate in the project kickoff meeting with City staff, and based on feedback at the meeting, adjustments to the public engagement plan may be proposed. The tentative agendas presented for this proposal may also be changed to achieve project goals or address specific issues that may arise.

Public engagement will begin during the study phase and continue at a rate dependent on the volume of relevant information worthy of sharing. We anticipate that up to five public meetings will be required to adequately cover the entire initiative. One of the public meetings will be specifically target fulfilling the requirements of the Citizen's Meeting necessary as part of the site plan review process.

Invitees of the public meetings will include all residents within 1,000 feet of the site boundary, residents and businesses who are anticipated to be affected by construction activities, the City's primary point of contact, and other relevant stakeholders/interested parties.

The number and content of the public engagement meetings may need to be adjusted, based on how the project is received by the public. Our scope has been based on five meetings described below. However, if the initial meetings go well, the later meetings may not be required. If there are significant challenges or opposition expressed in initial meetings, it may be necessary to have additional meetings during the study phase to address concerns. This can be accomplished by moving Meetings 4 and 5 to earlier in the project timeline.

Project Kickoff Meeting: Hart will participate in the kickoff meeting/workshop with plant staff and FTCH to develop an understanding of the technical aspects of the project, plant staff's perspectives, and plant staff's experience with previous public engagement initiatives.

Public Meeting #1: The meeting will be conducted during the study phase after the recommended tank site location is verified by the modeling work. The meeting will include an overall description of the water system, description of the project, and an explanation of project need. The reasons for the project and the benefit to water system users will be explained. Presentation materials will include photo images depicting the various tank styles under consideration. Project logistics and tentative scheduling will be discussed. After presentation of the project information, focused time will be allotted for open discussion and to field questions and concerns from the attendees.

Public Meeting #2 will be conducted approximately 3 to 4 weeks after Public Meeting #1. The meeting will include an update on the project as it relates to schedule; budget; disruption and restoration of the site; design and aesthetics of the above-grade structures; traffic maintenance; staging; control of noise, dust, and vibration; key construction activities and milestones; and other topics of specific interest. Concerns from the first public meeting will be addressed. Open discussion and questions will again be encouraged.

Public Meeting #3 will be conducted at the conclusion of the study phase to present findings of the study and provide an update on the project schedule. An update on art selection will be provided, if available. A portion of the discussion will focus on construction-related concerns and measures to be included in the specifications to address those concerns.

Public Meeting #4 will be conducted after the award of the contract and before the start of onsite construction activity, after the submittal of the construction schedule by the successful contractor. The construction schedule will be presented. Representatives of the contractor will be in attendance to introduce themselves and give a brief summary of their company. Attendees will be given the opportunity to ask questions and air issues regarding construction.

Public Meeting #5 will be conducted mid-point in the construction. If a composite tank is selected, the meeting will coincide with the completion of concrete base construction and the start of steel erection, which will involve different crews for the contractor. Contractor staff will be in attendance for introduction and to hear attendee concerns.

To aid in the visual presentation, engineering drawings will be presented along with conceptual renderings of the site. A drive-by perspective rendering will be provided. All interested parties will be given an opportunity to provide input and feedback at each meeting.

As part of this community engagement initiative, Hart will provide general counsel, event coordination (including invites and publicity), media/press relations, logistical support, materials preparation, and definition of meeting goals and objectives. Hart will also guide the discussion toward achievement of these goals, recap meetings, and communicate next steps.

Hart will communicate directly with relevant stakeholders, residents, and organizations throughout the course of this initiative through a letter-writing campaign. Letters will provide general updates, key details, and an invitation to participate in upcoming public/art council meetings. The letter writing campaign will commence during the project-planning phase, with letters being mailed before each event. Use of the City's website was assumed for posting applicable meeting presentation material online.

The City's primary point of contact for all construction-related activities should plan to be present for all public meetings. We anticipate the time involved for meeting preparation and participation will be three hours for each meeting, or a total of 15 hours over the duration of the project.

16. Integrate Public Artwork on Elevated Tank.

Some portion of the tank exterior is anticipated to be painted with public artwork. The artwork will be selected by the community, including the Public Art Coordinator, the Art Commission, and other community art stakeholders. The City is currently engaging in a similar process for another facility, and is gaining an understanding of what will be required for the integration of public artwork. The City has requested that our team budget a total allowance of up to 40 hours of time for assistance with the artwork selection.

We anticipate that at least one public meeting may be needed as part of the artwork selection. The meeting will be conducted to discuss the project, present the differences in the various tank styles, and present the approach for selecting the tank style. Discussion will also be focused on gathering information from the Art Commission on its goals for the project, concerns, and obstacles. The goal of the first meeting is to share introductory information and establish clear goals for the protocol and timeline for selecting the artwork. Additional meetings would be at the discretion of the City.

17. Coordinate with Planning Commissions requirements.

FTCH will prepare preliminary site plan drawings and renderings to submit to the Planning Commission and other City departments for City approval/concurrence with the design concepts. We will attend meetings and prepare submittals for the Planning Commission as described on the City website. We will incorporate review comments as applicable. The \$1,315 site plan review fee has been included in our scope, and will be paid by FTCH.

18. Conduct Study Phase progress meetings.

- a. Three progress meetings are planned during the study phase. The timing of one of the meetings is assumed to be on the same day as the site visits to the Liberty and WHS Pump Stations.
 - One meeting focusing on review of the modeling progress.
 - One meeting focusing on the site layout and design development.
 - One meeting focusing on review comments received on the study report and finalization of it. All meetings will provide a general update on the status of work in progress, budget, and schedule.
- b. It is assumed that the project manager will attend all meetings, and the design engineer and hydraulic modeling engineer will each attend at least one meeting.

19. Provide report. Summary write-ups or technical memos for the majority of the tasks listed in prior tasks will be completed with those tasks. The final report will combine the previous write-ups into a single report, including the following sections:

- | | |
|--|--|
| • Design recommendations | included in final design |
| • Summary of hydraulic modeling | • Sequence of operations |
| • Public engagement plan and outcome | • Tank type comparison matrix |
| • Planning Commission submittal | • Cathodic protection evaluation |
| • Geotechnical report | • Preliminary probable opinion of project cost |
| • Narrative description of details to be | • Proposed schedule |

20. Preliminary Cost Estimate. FTCH will develop an opinion of probable construction cost at various phases of the project. Cost estimating will be led by a full-time certified professional estimator in the FTCH Construction Department. Estimates are developed with input from the design engineers and under the direction of the project manager. Cost estimates are developed using ASTM Unifomat II Classification with Timberline software. We utilize subscription cost databases from RS Means and Turner. Estimates for the tank and other major equipment will utilize budgetary level quotations solicited from manufacturers/suppliers. The study phase estimate will be completed at the (AACE) +50%, -30% level, as described in the RFP.
21. A site topographical survey will be required, unless otherwise available in sufficient detail to complete the work. Our scope and fee include survey of an area sufficient to cover the proposed site improvements within South Maple Park. The survey should be completed early in the project, so it can be used as a basis for the conceptual site plan and site layout drawings. Soil borings must be located based on a proposed site plan and staked based on the survey.
22. Although not specifically requested in the RFP, evaluation of tank mixing systems to improve turnover of the stored water is included in our proposal. Static and mechanical mixing systems will be covered. Alternatives and costs, and pros and cons will be provided for City consideration.
23. Project Management. The majority of the project manager's efforts are included in the tasks listed above. Other tasks include:
- Budget tracking, reporting, and schedule updates
 - Internal coordination and progress meetings
 - Owner correspondence and project updates
 - Invoicing
24. Quality Assurance/Quality Control (QA/QC). FTCH utilizes a rigorous multi-step QA/QC program consisting of the following components.
- a. Brainstorming: Before work is started on a design project, an internal brainstorming session will be held with senior-level staff from various disciplines to review the project components, identify potential obstacles, and discuss any lessons learned on previous, similar projects. This brainstorming component is required of all design projects and is the first step in our QA/QC procedure.
 - b. Study Phase and Preliminary Design Reviews: At 30% and 50% completion, before submitting documents to clients or project stakeholders, projects undergo a review by the project manager, lead discipline engineer, lead graphics coordinator, and a senior level staff member in the lead discipline department.
 - c. 95% Coordination Printing: At 95% completion, a coordination set of drawings and specifications is compiled for internal review. This set is checked by the designers for final coordination of space and interrelated work.
 - d. Level 1: After updates are made to the coordination set, the Level 1 QA/QC review is conducted. This review is completed by each discipline involved in the project, performed by the most senior level designer actively involved in that discipline's portion of design.
 - e. Level 2: This review is conducted after Level 1 comments have been coordinated into the project documents. It is conducted by each discipline involved in the project, performed by department heads or technical team leaders. Level 2 for bidding documents includes a constructability review performed by an individual from our Construction Department. It also includes an independent review by one or more individuals, designated by the project manager, who are completely independent from the project design. The independent review is focused on looking at the documents from a multi-disciplinary perspective.
 - f. Level 3: Level 3 constitutes external reviews, which may be necessary before a project is finalized, such as reviews by the client, permitting agency, etc. After comments are received, the project manager ensures the team incorporates them into the document. The project manager obtains clarification from the client if necessary.

Design

We propose the following work plan for the design phase of the WHS Elevated Storage Tank Project.

1. Final design kickoff meeting. Assemble the project team from the City and FTCH to review comments from the preliminary design report and discuss project goals and schedule. The goal of the meeting will be to resolve any outstanding issues from preliminary design and finalize features to be included in the design. Impacts to scope or schedule resulting from preliminary design will be explored, if applicable.
2. Perform detailed design. Complete detailed design for civil, architectural, structural, process, mechanical, electrical, and instrumentation systems.
 - a. Prepare final design criteria for the tank in accordance with American Water Works Association standards. Include appurtenances, as selected by the City. Incorporate obstruction lighting if required by the FAA.
 - b. Tank foundation design. Geotechnical recommendations will be reviewed in detail, and the design requirements for the foundation system will be evaluated. For the purposes of the proposal, FTCH assumes a shallow foundation will be adequate for the tank.
 - c. Design tank inlet and drain piping. The design will include provisions for freeze protection to include insulation and heat tracing.
 - d. Design cathodic protection and tank mixing systems if selected by the City. Design systems for monitoring of tank level, entry/intrusion, security, and telemetry. A discrete cost for this item has been provided, which can be deleted from the project scope if desired.
 - e. Design provisions for tank antennae and penetrations to support approved telecom equipment.
 - f. Design provisions for pump station modifications necessary to achieve the new hydraulic conditions. Design includes the assumptions described in the Study phase for the Liberty and WHS Pump Stations.
 - g. Determine the electrical requirements for the tank and project site (lighting, power, etc.) Coordinate power requirements with the electric utility provider. Complete electrical design and utility coordination. Design provisions for tank grounding and lightning protection.
 - h. Design a 10 kilowatt (kW) natural gas generator to serve the tank, to provide standby power for essential loads at the tank, such as lighting and level instrumentation.
 - i. Design provisions for controls, instrumentation, and telemetry. We anticipate the elevated tank level will be controlled based on the operation of high-service pumps at the water plant. Tank level information will be conveyed to the water plant SCADA system via a new telemetry system compatible with City standards. We understand the current radios used by the City are being phased out. Use of fiber optic will be considered, along with options to combine tank telemetry with the existing system at the Liberty Pump Station.
 - j. Detention basin design. Drainage calculations completed during the study phase will be reviewed and the volume of the detention basin adjusted during final design, based on final site configuration. The basin outlet pipe size and outlet structure will be designed.
 - k. Final design of other site features will be completed, including roadways, parking area, fencing, grading, etc.
 - l. Tank coatings system design. The paint system for the tank wet interior, dry interior, and exterior will be developed. Recent developments in manufacturers' coating systems will be reviewed, and product and application requirements will be developed. Recommendations for the paint system will be reviewed with Dixon Engineering and select tank manufacturers.
 - m. Complete internal QA/QC procedures, which will include City and Michigan Department of Environmental Quality MDEQ review. Incorporate applicable review comments into the design documents.

3. Incorporate City input on the design and selection of components. This will occur at the various review stages of design, which are proposed to include submittal of preliminary drawings at 30% and 50% complete, and submittal of drawings and specifications at 95% complete for City review and comment. We suggest the review sets be provided to MDEQ for their concurrent review as the design develops.
4. Design instrumentation and telemetry according to City standards. The City's existing systems will be reviewed, including acceptable manufacturers for equipment and programming protocol. We recommend the specifications limit instrumentation and SCADA integration work to prequalified contractors. A list of prequalified contractors will be developed concurrently by FTCH and the City based on the existing system and past experience.
5. Conduct four progress meetings during design. Progress meetings will be conducted throughout the design phase as required to get input and direction from the City on all aspects of the project, and to keep the project on track. We will also review the project with MDEQ and obtain their comments.. Three progress meetings are proposed to coincide with the 30%, 50%, and 95% percent design submittals. One additional meeting will be held as needed during the design phase. These meetings will be at the Water Plant, with FTCH present. FTCH can also facilitate conference calls, video conferencing at our offices, or internet-based meetings as needed. For some onsite meetings, we may include some of our FTCH staff with a minor role on the project by phone or video-conference.
6. Provide interim deliverables. Interim deliverables are proposed to include submittal of preliminary drawings at 30% and 50% completion, and submittal of drawings and specifications at 95% completion as described previously. Technical memorandum may be issued in addition to the design submittals at various stages of the design to present alternatives that require specific City input or direction. We assume five hard copies and one electronic copy of the interim deliverables will be provided as described in the RFP. An opinion of probable construction cost will be provided to the City with each interim submittal.
7. Provide meeting agendas, minutes, and facilitation. FTCH will conduct and attend all design meetings, and provide written agendas and meeting minutes. We assume meetings will be held at the Water Plant.
8. Provide design package. Prepare Division 01 front-end specifications and incorporate the Division 00 specifications to be provided by the City. Prepare Division 2 – 46 technical specifications for bidding purposes. The specifications will follow the current Construction Specification Institute (CSI) numbering format. Prepare final drawings for bidding purposes in major subdivisions to include civil, structural, process, electrical, and instrumentation/control. The final design submittal will include five hard copies and one electronic copy of drawings and specifications as described in the RFP. The documents will be the "bid ready" documents that will be issued to prospective bidders. A final basis of design and opinion of probable construction cost (+15/-5) will be provided.
9. Provide preliminary plans for City Department review. We propose that copies of interim deliverables would be suitable for submittal purposes for City Departments and will be provided out of the five copies of documents to be provided to the City.
10. Prepare and submit MDEQ and FAA permits. Prepare Part 399 Water System Construction Permit application and submit along with three signed and sealed sets of drawings and specifications to MDEQ for approval. Coordinate review with the MDEQ and respond to MDEQ comments as applicable. Attend a review meeting with MDEQ (if needed) to address permit review comments. Coordinate requirements for a Tall Structures permit with Michigan Department of Transportation (MDOT) and the FAA and submit the permit application as required.
11. Coordinate Site Plan approval by the Planning Commission. FTCH will coordinate the site plan approval process and attend meetings and provide documentation as needed to demonstrate compliance with City standards as needed.
12. Design documents will comply with the most recent City Code of Ordinances. A code review will be completed by FTCH as part of preliminary design to ensure compliance with City requirements.
13. Hard and electronic copies of the bid documents (drawings and specifications) will be provided.

14. Project management. The majority of the project manager's efforts are included in the tasks above. Other tasks include:

- Budget tracking, reporting, and schedule updates
- Internal coordination and progress meetings
- Owner correspondence and project updates
- Invoicing

Construction Management

The construction management phase will include bidding, construction administration, construction observation, and startup support services. We propose the following work plan for the WHS Elevated Storage Tank Construction Management Phase.

1. Provide technical assistance to the City in the bid and award of the project.
 - a. Provide electronic documents to the City for distribution through their on-line system.
 - b. Conduct a pre-bid meeting at the City's location.
 - c. Help the City evaluate the bids and identify qualified contractor bids for City award.
 - d. Help the City award the bids by providing the necessary forms and documents.
 - e. Help the City review the contractor's bond and insurance information and assist the City in the execution of the contract documents by providing the necessary forms and documents.
2. Respond to bidders' questions during the bidding period and prepare addenda for changes to the bid documents, if required.
3. Conduct pre-bid, pre-construction, monthly progress, special, and project closeout meetings.
 - a. Generally, monthly project meetings will be conducted onsite or at a site in the City during the construction phase, when construction activity was occurring onsite. During periods of inactivity onsite, such as during the winter, conference calls will be conducted with the contractor, if needed. Attendance at meetings is assumed based on the anticipated construction schedule, and is described in the Level of Effort (LOE) table in this proposal. We assume the City will attend progress meetings.
 - b. Special meetings will be specified for the following:
 - Preconstruction survey.
 - Mass concreting procedures.
 - Pre-installation meeting for painting.
 - Pre-installation meeting for programming for SCADA system.
 - Factory test meeting for SCADA system components.

The City is welcome, but not required, to attend these meetings with the contractors.
 - c. Closeout meetings:
 - Substantial completion inspection.
 - Final completion inspection.

We assume the City will attend project closeout meetings.
4. Interpret the drawings and specifications and progress of the work for conformity of construction with the contract documents, inspect the work to observe general quality and notify the contractor and the City of any work not in conformance. Site visits will be conducted by the project manager, the lead engineer, specific discipline engineers, or other qualified personnel dependent on the progress of the work. Provide

clarifications and interpretations during the construction. Issue bulletins, change orders, and work change directives, as appropriate.

5. Review and track all project submittals, review change order requests, address requests for information (RFIs), and generate the punch list at project completion.
 - a. Respond in writing to contractor's RFIs and issue clarifications and interpretations to the contract documents, as applicable.
 - b. Review detailed construction drawings, shop drawings, erection drawings, samples, schedule information, and other data the contractor is required to submit for compliance with design concepts.
 - c. Receive items required by the contract documents to be designed by the contractor for informational purposes to determine that the contractor has understood these responsibilities and obtained the required professional design assistance.
 - d. Consult and advise the City as to the acceptability of substitute materials and equipment that may be proposed by the contractor.
 - e. Punch List Inspection. FTCH staff will inspect the project to evaluate completion, and will issue a punch list describing remaining work items or deficient work to the contractor.
6. Provide start-up assistance and commissioning. FTCH will lead the start-up and training and will schedule and coordinate the training that will be provided by the equipment suppliers. This includes equipment start-up, coordination with suppliers and contractors to resolve operational or controls-related problems, and verification of control system operation. Startup assistance will include refinement on the sequence of operations developed in the study phase, and communication and explanation of this to City staff.
7. Provide the services of a part time Resident Project Representative (RPR) at the site to observe the work.
 - a. The proposal assumes an RPR will generally be onsite for construction of work that will be concealed when the contractor is performing work onsite, up to the substantial completion date.
 - b. The role of the RPR will be observation of the work performed by the contractor and to act as the liaison between the field and the FTCH engineers and designers.
 - c. For issues involving a deviation from the contract documents, the role of the RPR is to communicate with the appropriate FTCH staff who will provide direction to the contractor on how to proceed.
 - d. The RPR will maintain daily reports documenting the work completed, the contractor's presence onsite, weather conditions, and issues and resolutions that may arise. The RPR will facilitate communications between the contractor, FTCH office staff, and the City regarding onsite activities.
 - e. The project manager will maintain the role as the primary liaison to the contractor and the City.
 - f. Site visits will also be conducted by the project manager, the lead engineer, specific discipline engineers, or other qualified personnel dependent on the progress of the work. This will include visits by our licensed Master Electrician and Controls Engineer from our Electrical Department.
 - g. The proposal is based on the anticipated project schedule. Assumed hours for the RPR and other FTCH staff are presented in the LOE table in this proposal.
8. Dixon Engineering will provide inspection and testing services as a subconsultant to FTCH. Dixon shall conduct services including but not limited to, welding, surface preparation acceptance, environmental conditions monitoring, dry film thickness, and holiday testing to ensure the final product is compliant with applicable AWWA standards and the contract documents. The proposal is based on the following services.
 - a. Weld Inspection
 - i. Inspect steel delivered to site for thickness, conformance to specifications, and quantity. Review initial erection procedures and qualifications of all welders.

- ii. Provide inspection of completed welding and locating of sites on completed welding for radiographic inspection of steel at ground level. Inspect welding procedures and practices.
 - iii. Provide inspection of completed welding and locating of sites on completed aerial construction for radiographic inspection of erected steel. Inspect welding procedures and practices.
 - iv. One scheduled visit for review of construction for completeness, review installation of tank appurtenances, and final inspection of all welding prior to removal of the erection crew and equipment.
- b. Critical Phase Inspection
- i. Wet Interior – Painting
 - a. Inspect interior abrasive blast cleaning and prime coat for thoroughness, surface profile, and compliance with specifications, prior to application of the primer coat.
 - b. Inspect the interior intermediate coating uniformity, coverage, dry film thickness, and holiday detection, prior to application of the topcoat.
 - c. Inspect the interior topcoat for uniformity, coverage, performance, and dry film thickness for compliance with specifications. Examine the overall project for possible damage caused by equipment removal. Review all contract items to ensure they have been completed according to contract requirements.
 - ii. Exterior and Dry Interior – Painting
 - a. Inspect exterior abrasive blast cleaning and prime coat for thoroughness, surface profile, and compliance with specifications. The exterior binder coat will be inspected for uniformity, coverage, and dry film thickness prior to application of the intermediate coat.
 - b. Inspect the exterior intermediate coating for uniformity, coverage, and dry film thickness prior to application of the topcoat.
 - c. Inspect the exterior topcoat for uniformity, coverage, performance, and dry film thickness for compliance with specifications. Examine the overall project for possible damage caused by equipment removal. Review all contract items to assure they have been completed according to contract requirements.
 - d. Visit to finalize the project to assure all items in the contract specifications have been completed, and the quality of workmanship meets contract requirements.
 - e. Inspect dry interior abrasive blast cleaning, prime coat and topcoat application for compliance with specifications.
- c. Shop Inspection – Steel Panels and Appurtenances
- i. Shop inspection by Dixon Engineering will be included as part of the general contract for construction, rather than under FTCH’s scope. This is how we typically procure these services on a tank project. Unit rates for inspection are included in the inspection portion of the tank specifications. The actual cost for shop inspection services can vary depending on the location of the tank manufacturer. Inspection services to be required typically include:
 - a. Inspect abrasive blast cleaning and shop priming of all steel roof plates, roof beams, appurtenances, etc. Inspect all primed panels to verify cure before stacking and loading.
 - b. Approximately two weeks of inspection are estimated at the fabrication facility.

9. Provide project closeout assistance to the City.
 - a. Coordinate the final bacteriological testing to ensure tank meets applicable AWWA standards for placing the tank into service. The contractor will be required to conduct disinfection procedures and provide access to the City for sampling. FTCH assumes the City will obtain and analyze the samples. We assume the City will actually perform the action of placing the tank into service.
 - b. Collect and review operation and maintenance manual documentation from the equipment suppliers and Contractors.
 - c. Collect and review contractor project closeout documents, including waivers of lien, consent of surety, and warranties
 - d. Collect and review contractor as-built documentation.
10. Provide project record drawings to the City based on the contractor's as-built documentation. Record drawings will be provided in the format prescribed in the RFP.
11. Project management. The majority of the project manager's efforts are included in the tasks above. Other tasks include:
 - Budget tracking, reporting, and schedule updates
 - Internal coordination and progress meetings
 - Owner correspondence and project updates
 - Invoicing
12. Testing of concrete, compaction, etc during construction will be completed by our subconsultant, MTC.

Operations and Maintenance Guidelines Training

1. Prepare written operational and maintenance guidelines (including standard operating procedures) for all system modifications.
2. Assemble the written guidelines and the contractor provided operation and maintenance (O&M) manuals and provide copies to the City. The copies will include four tabbed hard copies of the manual in three-ring binders and 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. The format for the O&M manual will be consistent with web-based standard developed by the water treatment plant.
3. Conduct three operational training sessions for City staff. The sessions will be scheduled for multiple times on non-contiguous days to accommodate shift work schedules for applicable staff. FTCH will conduct the sessions with support from equipment suppliers and contractors.

Assumptions

Assumptions used in the development of this proposal are presented here for the City's review and consideration. Our intent was to identify items that could affect the scope of the project and the related fees known at the time of proposal submittal. There may be additional items that arise over the course of the project that could affect scope and fees. FTCH will review issues as they arise with the City and, where changes are warranted, negotiate in good faith with the City. The proposal is based on the following assumptions.

1. The existing hydraulic model is up to date, calibrated, and suitable for use to complete study without flow testing or field work.
2. The tank will be located at the South Maple Park/Liberty Pump Station site.
3. It is recommended that the deep soil borings be conducted in the exact location where the tank will be constructed to avoid unforeseen conditions or claims during the construction phase. It was therefore assumed that the soil borings would not be conducted until the location of the tank on the selected site is finalized. If the tank location changes after the borings are complete, additional borings may be required.
4. A shallow tank foundation was assumed for the tank. The need for a deep pile foundation would impact construction cost, and construction inspection fees and could impact design fees as well.

5. Existing storm sewer infrastructure within the South Maple Park area, or onsite detention/infiltration was assumed to be adequate for handling tank overflow/drain water. The proposal does not include infrastructure analysis or design of storm sewer improvements beyond the limits of the park.
6. The existing SCADA system will be maintained, with added screens and other modifications as required to integrate the new tank, and VFD additions.
7. We assumed the City would provide details on the desired components for security cameras, card readers, auto dialers, etc. Many of our clients use a third party company to handle security equipment for all facilities within the municipality. Generally, these providers are hired separately to provide and install security components.
8. An evaluation of tank styles is included in the study phase. Our experience has shown that the composite style tank is expected to a cost advantage over steel spheroid or fluted style tanks in tank sizes of 1 million gallons (MG) or above if bid "head-to-head." The construction services portion of the proposal is therefore based on the construction of a composite style tank.
9. We assumed the space in the base of the tank will be unfinished and unheated. An overhead door can be specified for a composite style tank, if so desired. This provides convenient access to the base area for storage and will not affect engineering fees.
10. Tank inlet/outlet piping from the yard to the base of the tank was assumed to be buried under the base of the tank. Control valves, if required, will be installed in the base of the tank above grade with insulation and heat tracing. Isolation valves will be installed in the yard and buried. A valve vault could be incorporated into the design, if so desired. Additional fees may be required for structural, electrical, and mechanical systems to include a vault.
11. The tank and appurtenances will be specified as a performance-based design to be executed by the tank manufacturer. A list of recommended qualified tank manufacturers will be provided to the City. The list of manufacturers may be different depending on the style of tank selected by the City. FTCH assumes bidding will be limited to the recommended manufacturers.
12. FTCH assumes the City can provide us with existing drawings, shop drawings, specifications, and wiring diagrams for the affected pump stations.
13. The Liberty and WHS Pumps can be modified or replaced in their current location, with minor modifications to piping and no modification to buildings. We assume motors and conductors between MCC equipment and the pumps will likely need replacement, but that the MCC and Electrical system has adequate capacity to accommodate motor size increases. FTCH assumes no modifications to the pump station buildings will be required.
14. Our scope includes the \$1,315 fee for site plan review. FTCH assumes that other permit fees will be paid for by the City for design-related permit submittals as applicable. We assume permit costs required for construction, such as building permit and soil erosion control permit, and related code or permit required inspections will be specified to be paid by the contractor, or otherwise paid for directly by the City.
15. We assumed the contractor will be responsible to provide the services of a registered land surveyor to lay out the new facilities.
16. FTCH assumes all project improvements will be bid as a single bid package. The general contractor will be responsible for coordination between the subcontractors.
17. Bid set distribution will be completed by the City through their electronic distribution system.
18. Shop inspection of tank steel by Dixon Engineering will be specified under the general contract.

**EXHIBIT B
COMPENSATION**

General

Contractor shall be paid for those Services performed pursuant to this Agreement inclusive of all reimbursable expenses (if applicable), in accordance with the terms and conditions herein. The Compensation Schedule below/attached states nature and amount of compensation the Contractor may charge the City:

EXHIBIT B		
WHS Elevated Storage Tank Project		
FTCH Fee Schedule		
A. Study		
1. Modeling		\$25,166
2. Preliminary Design		\$30,520
3. Public Engagement - Allowance		\$28,261
4. Art Engagement - Allowance		\$4,378
5. Meetings, Write Report, Permitting, and PM		\$34,488
6. Study Phase Subtotal		\$122,812
B. Design		
1. Final Design of Pump Station Modifications at WHS and Liberty - Allowance		\$14,708
2. Design Cathodic Protection, Tank Mixing - Allowance		\$2,791
3. Final Design - all Other		\$47,023
4. Permitting and Approvals		\$7,614
5. Review Meetings, Project Management		\$20,910
6. Design Phase Subtotal		\$93,046
C. Construction		
1. Bidding		\$6,392
2. RPR Inspection		\$77,020
3. Dixon and MTC Inspection and Testing		\$40,492
4. Construction Phase - Engineering, Meetings, PM		\$95,419
5. Construction Phase - Engineers and PM Site Visits		\$20,869
6. Startup and Commissioning		\$5,862
7. Project Closeout, Record Drawings		\$5,506
		\$251,560
D. O&M Guidelines and Training		\$9,146
E. Project Grand Total		\$476,563

**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). The certificates of insurance shall meet the following minimum requirements.

- A. The Contractor shall have insurance that meets the following minimum requirements:
1. Professional Liability Insurance or Errors and Omissions Insurance protecting the Contractor and its employees in an amount not less than \$1,000,000.
 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 which diminish the City's protections as an additional insured under the policy. 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. The City of Ann Arbor shall be an additional insured. There shall be no added exclusions or limiting endorsements which diminish the City's protections as an additional insured under the policy. 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 A.3 and A.4 above 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. Insurance companies and policy forms are subject to approval of the City Attorney, which approval shall not be unreasonably withheld. 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. Contractor shall furnish the City with satisfactory certificates of insurance and endorsements prior to commencement of any work. 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.