



## MEMORANDUM

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301 W. MAIN ▪ OWOSSO, MICHIGAN 48867-2958 ▪ WWW.CI.OWOSSO.MI.US

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**DATE:** July 11, 2019

**TO:** City Council

**FROM:** Glenn M. Chinavare, Director of Public Services & Utilities

**SUBJECT:** Water Treatment Plant Design Services - OHM Advisors Addendum No. 12

**RECOMMENDATION:**

Approval to amend the professional service agreement with Orchard, Hiltz, and McClement (OHM) Advisors of Livonia, Michigan as Addendum No. 12, for design engineering services to replace an aged filter backwash pumping system and 16-inch high service piping in the amount not to exceed \$143,400.00.

**BACKGROUND:**

The existing filter backwash pump is of 1940 vintage and beyond its expected useful life. This aged single pump system will be replaced with an upgraded dual pump configuration and new operating controls.

The 70 feet of 16-inch high service piping is severely rusted and in need of replacement. High service means under plant pressure, as this piping delivers finished water to the distribution system.

These two projects are the most urgent needs at the water Treatment Plant, and are DWRP Funding eligible for 2020 replacement.

**FISCAL IMPACTS:**

These services are budgeted for in the FY2019-2020 Water Fund Account 591-901-972.000.

**Document originated by:**

Glenn M. Chinavare, Director of Public Services & Utilities

Attachments: (1) Resolution  
(2) OHM Proposal

**RESOLUTION NO.**

**AUTHORIZING THE EXECUTION OF ADDENDUM NO. 12 TO  
AN AGREEMENT FOR PROFESSIONAL ENGINEERING SERVICES  
WITH ORCHARD, HILTZ & MCCLIMENT, INC. D/B/A OHM ADVISORS**

WHEREAS, the city of Owosso, Shiawassee County, Michigan, entered into an agreement with Orchard, Hiltz & McCliment, Inc. d/b/a OHM Advisors by the adoption of Resolution 26-2015 on April 6, 2015; and

WHEREAS, the city and Director of Public Services & Utilities desires to expand the contract to include additional engineering design services for replacing an aged filter backwash pumping system and a severely corroded 16-inch high service piping at the Water Treatment Plant.

NOW THEREFORE BE IT RESOLVED by the city council of the city of Owosso, Shiawassee County, Michigan that:

- FIRST: The city of Owosso has heretofore determined that it is advisable, necessary and in the public interest to expand the contract approved by Resolution 26-2015 on April 6, 2015 with Orchard, Hiltz & McCliment, Inc. d/b/a OHM Advisors to include additional services in the amount of \$143,400.00 for design and inspection services for replacement and upgrade of Water Treatment Plant filter backwash pump system and 16-inch high service piping.
- SECOND: The accounts payable department is authorized to submit payment to OHM Advisors, in the amount not to exceed \$143,400.00 for engineering services.
- THIRD: The above expenses shall be paid from FY2019-2020 Water Funds Account 591-901-972.000.

July 9, 2019

Mr. Glenn M. Chinavare  
Director of Public Services  
City of Owosso  
301 West Main  
Owosso, MI 48867

RE: Design Services – Water Treatment Plant Improvements

Dear Mr. Chinavare,

OHM Advisors (OHM) is pleased to submit this proposal for engineering design services for improvements to the water treatment plant (WTP). We have prepared our project understanding and scope of services based on information received from the City of Owosso (City) during the preparation of the Project Plan for the Drinking Water Revolving Fund (DWRf) program. This proposal addresses the following two improvement areas:

1. Filter backwash pump
2. High-service pump discharge piping

## PROJECT UNDERSTANDING

The City is seeking funds through the Michigan Department of Environment, Great Lakes, and Energy (EGLE) DWRf program. The primary project site is located at the City's WTP at 1111 Allendale Road with remote sites at the Gute Hill Standpipe, Delaney Road Elevated Tank, Palmer Street wells, Local Well 13, and Hintz well. The work to be performed under this project includes engineering services associated with the improvements as follows:

- Replacement of the failing rapid filter backwash pump with a duplex, variable speed pumping system at the WTP
- Replacement of approximately 70-foot section of corroded high service discharge piping at the WTP

Additional details for both subprojects are found in the DWRf Project Plan under the Selected Alternative labeled "WTP Failing Backwash Pump, Failing Process Piping, Obsolete Controls and Communications Equipment." All three subprojects identified in the Project Plan could be combined together under a single design to take advantage of resource sharing. For example, the SCADA and backwash pump replacement both have control, instrumentation, and electrical components. The backwash pump replacement and the high-service pipe replacement both include mechanical pipefitting.

This proposal includes electrical and controls for the backwash pumps but does not include any SCADA work or connections to the existing SCADA system or remote sites.



## SCOPE OF SERVICES

### Task 1 – Preliminary Design Engineering

This task includes the basis of design and preliminary design of the backwash pump replacement and the high service discharge line replacement.

Detailed work items that are part of the Preliminary Design task are listed below:

- Conduct a project kickoff meeting at the WTP to review the scope and schedule and obtain comments from the WTP operations personnel.
- Review lower level pipe galleries and compare to existing drawings. Project drawings will be developed based on historical as-built drawings supplied by the City.
- Verify permit requirements needed for construction.
- Prepare a preliminary basis of design.
- Prepare and submit a preliminary design package, including preliminary design drawings, project manual table of contents, and preliminary opinion of probable cost. Perform QAQC prior to delivering documents to the City.
- Review the materials with Owosso for concurrence to proceed.
- Submit and review preliminary engineering documents with EGLE to verify compliance with the intent of regulations.
- Revise the basis of design as required by comments from the City and EGLE and submit the final basis of design report.

### Task 2- Final Design Engineering

Following the completion of the preliminary design documents review by the City, the Final Design effort will begin. During this phase of the work detailed drawings are prepared for construction bidding, construction sequencing will be evaluated with the City to minimize system impacts, technical specifications are prepared and submitted to EGLE for the construction permit application.

Work items that are part of the Final Design task are listed below:

- Develop a proposed “sequence of construction” to facilitate the minimal interruption of the WTP operations during construction.
- Prepare a Project Manual for the proposed work, consisting of Project Advertisement, Bidding Requirements and Forms, Contract Forms, Bid Sheet, General Conditions (EJCDC templates), Supplementary General Conditions, and Technical Specifications.
- Prepare construction drawings for improvements to the backwash system and piping replacement, including demolition, mechanical, electrical, instrumentation, and relevant notes, details, and sequencing.
- Perform QAQC prior to delivering documents to the City.
- Meet with the City at the 50% design point to review the general design including drawings and equipment selections.
- At the 90% completion point of the contract documents, attend a ‘Plans-in-Hand’ review meeting with City staff to review details of the design for final feedback and modifications.
- Update engineer’s opinion of construction sequence and of probable construction cost to City.



### **Task 3 – Permit and Bidding Phase**

This task includes preparation of applications for permits and assistance to the City during the permitting and bidding processes.

Detailed work items that are part of the Permit and Bidding task are listed below:

- Provide final bidding documents to City necessary for bidding and final DWRP application submittals
- OHM will provide one (1) digital plan set and two (2) full plan sets of bidding documents to the City once complete
- Prepare pre-permit applications for review and feedback from local or state authorities having jurisdiction of the proposed construction. Permit applications are anticipated to be limited to local building/electrical permits and a Part 399 construction permit with the EGLE. The selected contractor will be responsible for submitting and securing permits for building, mechanical and electrical work.
- OHM will assist the City with the advertisement for bid, and responses to bidder questions as requested.
- Attend one (1) pre-bid meeting, one (1) additional meeting.
- OHM will support the City during the bidding process and provide Owosso with a recommendation of award letter.

### **Task 4 - Construction Phase Engineering Services**

This task includes general engineering services performed during the construction phase of the project, not including construction observation.

Detailed work items that are part of the Construction Phase Engineering Services task are listed below:

- OHM will assist the City with the execution of the contract documents to the selected bidder.
- Conduct a pre-construction meeting with the awarded Contractor and assist in the execution of the contract documents.
- Review and approve Contractor's shop drawing submittals.
- Receive, review, and respond to contractors' Requests for Interpretations (RFI's).
- Contract administration consisting of the timely review of construction pay estimates, review of contractor's construction progress for compliance with the approved project schedule, claim resolution, and the final project punch-list.
- Conduct progress meetings with the Contractor, subcontractors, and City representatives, as necessary, throughout the construction process. It is anticipated that these meetings will be held on a monthly basis. We currently anticipate up to 3 progress meetings (one per month). OHM will prepare and distribute a summary after each meeting.
- Review and process any change order requests initiated by the Contractor or by the City and provide the City with a response recommendation.
- System Operational Testing and Startup – OHM will provide part-time technical assistance following substantial completion to evaluate system functions and help identify necessary control refinements.
- Compile record drawings for the project per field observations and Contractor-supplied information into the final Record Drawings upon completion of the construction improvements. OHM will submit two (2) paper copies and two (2) digital flash drives with PDFs of the record drawings to the City for their records.



### **Task 5 – Construction Observation Services**

This task includes on site construction observation services performed during the construction phase of the project.

Detailed work items that are part of the Construction Observation Services task are listed below:

- A project engineer will oversee and manage the onsite resident engineer's work. The project engineer will lead efforts related to resolving issues that may arise during the construction process. Budget outlined may be modified in the future depending on the level of service requested.
- A Resident Engineer will provide full-time daily construction observation during periods of significant construction work or testing and provide part-time observation during periods of "non-critical" construction activity. Inspection of completed work for compliance with the contract documents will also be a part of the construction observer's regular responsibilities. Observation services may be reduced to part-time during some construction activities or as requested by the City.

### **FURTHER CLARIFICATIONS AND ASSUMPTIONS**

The fee schedule is based on the following assumptions:

- Owosso to provide as-builts drawings for the WTP in CAD (preferred) or PDF format.
- We assume that the City of Owosso will complete and submit the Part I, II and III DWRF applications, and OHM will provide required materials relevant to costs and design plans as required in the applications.
- We assume the existing motor control centers and main electrical disconnects meet all local, state, and national codes and can be utilized for new backwash pump equipment.

### **SERVICES NOT INCLUDED**

The following are services that are not included with this proposal:

- Development or updates to City's Operations and Maintenance Manuals.
- Boundary or topographical surveying.
- Fees associated with the agency permit application and review process.
- Advertisement fees.
- Attendance at public meetings other than those noted within the above scope of services.

### **DELIVERABLES**

OHM will provide bidding documents (project manual and drawings) and a final engineer's opinion of probable construction cost. Documents will be provided in both electronic and paper versions.



## SCHEDULE

OHM intends to start within two weeks of approval of this proposal. Final plans should be complete and delivered within 6 months. If this proposal is approved before July of 2019, design engineering can be completed in fall of 2019 for construction starting second quarter of 2020.

<b>Design Schedule or 2<sup>nd</sup> Quarter DWRP Funding</b>	
Task 1 Preliminary Engineering	7/2019-9/2019
Task 2 Final Engineering	9/2019- 11/2019
Draft Documents Submittal to EGLE	9/2019
Part I and Part II DWRP Application	11/15/2019
Final Documents Submittal to EGLE	11/2019
Plans & Specs Approved by EGLE	12/7/2019
Task 2; Bid Ad Published No Later Than	12/7/2019
Part III of Application; Bid Data Submittal	1/15/2020
DEQ Order of Approval Issued	2/15/2020
Borrower's Pre-Closing with the MFA	3/1/2020
MFA CLOSING	3/20/2020
Notice to Proceed Issued	5/1/2020
Water Treatment Plant Improvements	5/20-10/20

## FEE SCHEDULE

OHM proposes to provide the above outlined professional services in accordance with the following fee schedule. Services for Tasks 1, 2, 3 and 4 will be performed on a lump sum basis. Services for Task 5 will be prepared on a cost-reimbursement basis based on the actual hours for construction observation. The following budgets are presented for your consideration:

Task 1	Preliminary Engineering Design	\$ 21,700
Task 2	Final Design Engineering	\$ 46,800
Task 3	Permitting and Bidding Phase	\$ 9,200
	<b>Total Design Services</b>	<b>\$ 77,700</b>
Task 4	Construction Phase Engineering Services	\$ 40,300
Task 5	Construction Observation (estimated 160 hours of observations)	\$ 25,400
	Construction Engineering Services	\$ 65,700
	<b>Total Design and Construction Services</b>	<b>\$ 143,400</b>

Mr. Glenn M. Chinavare  
Director of Public Services, City of Owosso  
Water Treatment Plant Improvements  
July 9, 2019  
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**ADDITIONAL SERVICES**

Should the client require services beyond the scope of work outlined above such as additional presentations at city council meetings, additional fees may apply and will be addressed on an as-needed basis. Major portions of work associated with additional services may require a separate future agreement.

**ACCEPTANCE**

If this proposal is acceptable to you, a signature on the enclosed copy of this letter will serve as our authorization to proceed under previously agreed upon terms and conditions. Thank you for giving us the opportunity to be of service. We look forward to working with you on this project. This proposal is valid for 60 days from the date of this letter.

Sincerely,  
OHM Advisors

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Jennifer Drinan, P.E.

\_\_\_\_\_  
Matt Kennedy, P.E.

**Orchard, Hiltz, & McCliment, Inc.**  
CONSULTANT

**City of Owosso**  
CLIENT

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(Signature)  
(Name)  
(Title)  
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