BILL NO. S-19-03-13

SPECIAL ORDINANCE NO. S-_____

AN ORDINANCE approving PROFESSIONAL SERVICES AGREEMENT - SEWER SYSTEM-WIDE HYDRAULIC MODEL UPDATE & RECALIBRATION - ($512,313.00) between TETRA TECH, INC. and the City of Fort Wayne, Indiana, in connection with the Board of Public Works.

NOW, THEREFORE, BE IT ORDAINED BY THE COMMON COUNCIL OF THE CITY OF FORT WAYNE, INDIANA:

SECTION 1. That the PROFESSIONAL SERVICES AGREEMENT - SEWER SYSTEM-WIDE HYDRAULIC MODEL UPDATE & RECALIBRATION - ($512,313.00) by and between TETRA TACH, INC. and the City of Fort Wayne, Indiana, in connection with the Board of Public Works, is hereby ratified, and affirmed and approved in all respects, respectfully for:

> All labor, insurance, material, equipment, tools, power, transportation, miscellaneous equipment, etc., necessary for: Engineer shall provide the City Professional Engineering Services to include serving as City's professional representative for the Project, providing professional engineering consultation and advice, furnishing civil engineering services and other customary services incidental thereto/ (See Professional Service Agreement attached hereto and made a part hereof).

involving a total cost of FINE HUNDRED TWELVE THOUSAND THREE HUNDRED THIRTEEN AND 00/100 DOLLARS - ($512,313.00). A copy of said Contract is on file with the Office of the City Clerk and made available for public inspection, according to law.

SECTION 2. That this Ordinance shall be in full force and effect from and after its passage and any and all necessary approval by the Mayor.

_____
Council Member

APPROVED AS TO FORM AND LEGALITY

_____
Carol Helton, City Attorney

PROFESSIONAL SERVICES AGREEMENT

("SEWER SYSTEM-WIDE HYDRAULIC MODEL UPDATE & RECALIBRATION")

This Agreement is by and between

CITY OF FORT WAYNE ("City")

by and through its

Board of Public Works
City of Fort Wayne
200 E. Berry Street, Suite 240
Fort Wayne, IN 46802

and

TETRA TECH, Inc. ("Engineer")
710 Avis Drive
Ann Arbor, MI 48108

Who agree as follows:

City hereby engages Engineer to perform the services set forth in Part I - Services ("Services") and Engineer agrees to perform the Services for the compensation set forth in Part III - Compensation ("Compensation"). Engineer shall be authorized to commence the Services upon execution of this Agreement and written authorization to proceed from City. City and Engineer agree that these signature pages, together with Parts I-IV and attachments referred to therein, constitute the entire Agreement ("Agreement") between them relating to the Project.

APPROVALS

APPROVED FOR CITY

BOARD OF PUBLIC WORKS

BY: _____
Shan Gunawardena, Chair

BY: _____
Kumar Menon, Member

BY: _____
Mike Avila, Member

ATTEST: _____
Michelle Fulk, Clerk

DATE: _____

APPROVED FOR ENGINEER

BY: Vic Cooperwasser
Vic Cooperwasser, Senior Project Manager

DATE: March 6, 2019

PART I

SCOPE OF BASIC ENGINEERING SERVICES

A. GENERAL

Engineer shall provide the City professional engineering services in all phases of the project to which this scope of services applies. These services will include serving as City's professional representative for the Project, providing professional engineering consultation and advice, furnishing civil engineering services and other customary services incidental thereto.

B. PROJECT DESCRIPTION

This project will update and refine the calibration of the City's system-wide hydraulic model and conduct various hydraulic evaluations with the updated model. The City's current PCSWMM system-wide model contains approximately 3,800 nodes, 1,245,000 linear feet of interceptor and trunk sewers and 670 subcatchment areas. The existing hydraulic model was last holistically calibrated in 2010.

The Engineer will be responsible for all aspects of the model update, summarized as follows: reviewing the existing model to identify areas requiring improvement, developing the approach to implement the improvements, explaining the recommended improvements to the City to gain concurrence, updating the model configuration and refining the model calibration as warranted, and documenting all changes for presentation to the City (both throughout the project and in the final report).

Once updated and refined, the system-wide hydraulic model will be used to conduct selected hydraulic evaluations in coordination with the City.

C. SCOPE OF WORK

In summary, the Engineer is responsible for developing and implementing a collection system model update process to meet, at minimum, key City requirements as follows:

- Improve representation of local Rainfall-Dependent Infiltration and Inflow (RDII) in the separate sanitary system. While the net effect of RDII is generally well represented based on interceptor flow metering data comparisons, the City would like to improve representation of the local distribution of RDII to guide rehabilitation efforts.
- Improve representation of seasonal variation in system response. In general, the City's model tends to under predict flows in the late winter/early spring season, as compared to other seasons of the year.
- Improve representation of river intrusion. The City has a working version of a river intrusion model, which runs outside of SWMM and provides input hydrographs for subsequent SWMM simulations. This river intrusion model was developed in 2015, as a temporary tool for use until the next (current) system-wide model update.
- Review the impact of sewer separation projects completed in the combined sewer system since the last model update. Some of these areas have already been incorporated in the model; others will need to be incorporated as part of the model update. Across all these areas, the selected consultant will implement a consistent methodology to incorporate sewer separation in the model (which may require refinement of already-incorporated areas) and test the performance of the model using local meter data as appropriate.
- Add approximately 70,000 linear feet of recently constructed sewer and another 30,000 linear feet of existing sewers to update the model. This will allow the model to represent all sanitary sewers over 15-inch and all the City's combined sewer overflow points.
- Review current model representations of contract customer inflows and revise as appropriate using flow data from the City's flow meter monitoring system (typically mag meters on contract customer force mains).

Other responsibilities of the Engineer will include:

- Review and concurrence with the City-developed flow monitoring program to support model calibration.
- Development of planning documents for all steps in the modeling process, specifically data review and management, model updating, model calibration, and model maintenance. These documents will be

submitted at interim milestones as appropriate, and bundled with additional documentation for a final report at the conclusion of the project.

Engineer shall perform the following detailed scope of work.

Task 1 – Information Review and Meetings

Engineer will obtain all available information relevant to the system-wide model from the City. Engineer will catalog and review the data provided to gain a full understanding of information to be used for the project, identify any information gaps that could impact project completion, and recommend methods to fill those information gaps. Available information includes, but is not limited to the following:

- The City's proposed 2019 Flow Monitoring Program.
- Historical flow monitoring data from the City's current (permanent) and historical (short-term) programs.
- City GIS data.
- The current system-wide model, including relevant documentation from completed projects.

1.1 Engineer will review the proposed 2019 Flow Monitoring Program. The program is expected to start in early 2019. Engineer understands the importance of initiating this program on schedule to collect accurate data for model calibration. At the time of Notice of Selection, Engineer will receive data from the City and begin reviewing the proposed Flow Monitoring Program. Engineer will schedule a conference call to review the proposed program with the City to understand the intent and scope of program. Engineer will attend a workshop with the City within two weeks of the conference call to review the 2019 Flow Monitoring Program.

1.2 Engineer will review data collected as part of the 2019 Flow Monitoring Program. Engineer will review the collected data for completeness and applicability as it is obtained and, if needed, provide guidance on protocols and procedures to improve data quality during implementation of the program. Data will be reviewed directly from the City's Telog website and comments provided to the City on a regular basis. An Optional Service for complete QA/QC of flow monitoring data has been included in the Section E of this PSA.

1.3 Engineer will develop a Data Review and Management Plan. The plan will document the status of available information on the existing collection system assets and provide a gap analysis of data needed to complete the model updates (Task 2) and model recalibration (Task 3). The plan will document how datasets will be applied in the project and recommend methods to fill data gaps identified.

1.4 Engineer will develop a Model Update Plan to serve as a work plan for Task 2 of this contract. The plan will build on efforts from the Data review and Management Plan to outline the work efforts to update the model network and revisions to hydrologic approaches applied in the model. The Plan will define the limits of new model network to be included to serve separate sanitary sewers 15-inch and larger and connect two combined sewer outfalls within the model. The plan will include a refined approach to address RDII in the separate sanitary sewer system. At this time, it is expected that the groundwater routine within EPA-SWMM will be the method applied for RDII in the model. For combined sewer areas, the SWMM runoff approach will be used for wet weather flows. If the runoff approach alone does not provide an accurate calibration (e.g. under-predicts the tail of the hydrograph), an underlying RTK or groundwater routine may be applied in addition to catchment runoff.

1.5 Engineer will develop a Model Calibration Plan to serve as a workplan for Task 3. The plan will document all aspects of the model calibration process, including data management, data processing and analysis, hydrologic methods to be applied in the model, model calibration standards, and documentation requirements. The plan will include workflow diagrams presenting the model calibration process and decision support flow chart.

1.6 Conduct monthly project progress meetings, prepare meeting minutes, update the project schedule and the budget. Project progress meeting will be in-person meetings held monthly at City offices. Impromptu conference calls with online screen sharing will be held as needed to communicate project status, information, and results.

1.7 Conduct workshops at key stages of the project. It is expected that the following workshops will be held:

1. Present recommendations for 2019 Flow Monitoring Program
2. Present the Draft Model Update Plan and the Draft Model Calibration Plan
3. Present Draft Model Calibration Results

Task 2 – Model Updates

2.1 Develop a detailed approach to refine the system-wide RDII component in the model. The sanitary RDII response must match historical system responses to both growing (summer/fall) and dormant (winter/ spring) season conditions. The RDII approach will allow the City to evaluate sewer rehabilitation efforts within the separate sanitary sewer system. Updates to the model will allow for efficient simulation of single events as well as extended continuous simulation of 5-year periods. The model will be updated to be predictive and streamlined to limit external data sources to perform design storm and/or long-term simulations.

The EPA-SWMM groundwater routine will be utilized to represent the sanitary RDII in the model. The groundwater routine will be applied to the areas contributing to RDII in the system (foundation drains, laterals, and sewers/manholes). A GIS evaluation will be performed to quantify the RDII contributing areas within the separate sanitary sewer system. The model is an interceptor level model and the level of detail within the contributing areas must be balanced to maintain model performance. A sensitivity analysis will be performed using historical flow meter data to reduce the quantity of RDII catchments and maintain the ability to accurately predict the seasonality of flow responses in the system.

2.2 Develop a final river intrusion model, integrated into the system-wide model. The current spreadsheet approach provides accurate results based on comparisons to permanent flow metering data. An evaluation will be performed to identify the recommended approach for implementing a river intrusion component directly within the SWMM model. The river intrusion component will be predictive based on rainfall and/or river levels. If possible, the river intrusion component will be based on rainfall patterns within the City. However, the large contributing area far upstream of the City limits may require the river intrusion component to be based on a river level boundary condition in the model.

2.3 Update the hydraulic model for sewer separation projects completed since 2010. Engineer will review drainage areas for these project areas and adjust model catchment delineations. Runoff parameters for the combined sewer system will be adjusted to maintain a consistent flow response as compared to pre-separation conditions (e.g. maintain the percent impervious, slope and flow length).

2.4 Incorporate additional and new sewer lines to represent all sanitary sewers over 15- inch and all the City's combined sewer overflow points. Engineer will expand the model to include approaximately 100,000 feet of sewer within the separate santiary system. The existing model is referenced to the NAVD88 veritcal datum and all updates shall be on the same datum. Engineer will incorporate an existing SWMM model of a combined sewer system into the system-wide model, reviewing the model setup for consistency with the overall system-wide model. Engineer will incorporate two additional combined sewer overflow points that are not currently in the system-wide model. Model RDII and runoff delineations will be developed for all newly added sewer and refinements made to the model.

2.5 To refine the representation of contract customer flows, Engineer will apply the RDII modeling approach consistent with the system-wide model to contract customers.

Task 3 – Model Calibration

3.1 Engineer will implement the Model Calibration Plan developed in Task 1. Time-series flow and precipitation data will be analyzed using the US-EPA SSOAP toolbox to breakdown the data into discrete flow components including: base wastewater flow, groundwater infiltration, and wet weather flow. The model will be calibrated discretely to each flow component to minimize errors associated with each type of flow response. Dry weather flows will be calibrated first, followed by seasonal groundwater infiltration, and lastly, wet weather flow (sanitary RDII or combined runoff). The sites will be calibrated in an upstream to downstream manner as allowed by placement of the flow meters. Model calibration will be performed utilizing up to one year of data at each site.

The model will be calibrated at the following locations:

- Permanent flow meters (32)
- Temporary flow meters (38)
- Level-only sensors (10)
- Combined sewer inputs (12 upstream of outfall and 20 in an outfall)

- Pump stations (13 pump stations, of which 7 have flow data and 6 have runtime data, and 5 overflow pump stations with runtime data only. Most or all locations will have wet well level data.)
- Contract customers (5)

Model calibration standards will be developed in the Model Calibration Plan. The plan will include calibration standards for both dry and wet weather flow conditions. In addition, standards will consider peak rate, event volume, and peak level for calibration events. For fee development purposes, it is assumed that the Wastewater User Planning Group (WaPUG) model calibration standards will be applied for this project. We will review the available options with the City during development of the Model Calibration Plan and select the standards most appropriate for the City.

Once model calibration is complete, the model will be tested against a set of data independent from that used for model calibration. The City has a significant set of historical data. The validation dataset will be developed from historical permanent meters or by setting aside some events from the 2019 Flow Monitoring Program.

It is expected that some areas will not have data available to directly calibrate the sanitary RDII and/or combined runoff responses. For these areas, the hydrologic response will be developed for areas directly calibrated to metering data. Model input parameters will be applied from areas that have similar land use, service area, age of development, soil types, and geography within the City's service area. Statistics will be developed for these areas and compared to flow meter tributary areas to select the most appropriate parameters to apply.

3.2 Prepare a Model Calibration Technical Memorandum, presenting the results of the calibration process, for review by the City. The memorandum will document the results from the calibration process including summary tables and figures for each site included in the calibration. There is the potential that some sites will not meet all aspects of the calibration standards. In these situations, discussion and limitations will be presented for each site for consideration and use by the City in future modeling efforts. The memorandum will include recommendations for future investigations to collect additional data to further improve the model accuracy.

Task 4 – Long-Term Control Plan (LTCP) Model Update

4.1 Model updates performed in Tasks 1-3 will be incorporated with the City's LTCP model which incorporates new flows from future growth (2035), new conveyance to serve future growth areas,) and all solutions from the Consent Decree. It is expected that significant changes will be made to the existing conditions model. Therefore, to ensure proper integration of the models without loss of any new model revisions, Engineer will, upon approval by the City, translate the LTCP model projects into the existing conditions model. This task includes the following:

- Review of LTCP projects to confirm implementation of the proposed improvements are consistent with the newly developed model RDII approaches. This will primarily focus on sewer separation and green stormwater infrastructure type projects.
- Review of LTCP projects for potential improvements in the model. For example, providing a sloped floor at storage basins can reduce the dewatering times in the model making it ready for the next event.
- Revise the hydrologic approach for future flows to be consistent with the newly developed approach (e.g. groundwater approach) for RDII. The City will approve of the overall response for future growth (RTK method). This step includes calibrating a groundwater RDII response to match the current flow response.
- Incorporate the LTCP projects into the newly recalibrated model.

Task 5 – Model Application

5.1 In accordance with E. OPTIONAL ADDITIONAL SERVICES, the City has provided an allowance of $40,000 for this optional task. As directed by the City, Engineer will apply the calibrated model to perform evaluations to assist with ongoing planning and design efforts by the City. A list of potential evaluations to perform with the recalibrated model includes:

- Confirm existing and proposed facility sizing per LTCP requirements. Perform operation optimization of facilities that are determined to not meet LTCP requirements.
- Optimize operations at existing and proposed facilities (e.g. pump stations, facility dewatering, hydraulic controls structures). This includes developing revised control rules to minimize overflows and maximize capture at the water pollution control plant (WPCP).
- Optimize flows to the interceptor from both combined and separate sanitary sewer systems. Identify potential locations for dynamic underflow control in the combined system to maximize flow to the WPCP.

- Perform a system-wide capacity analysis of the sanitary and combined sewer systems. Categorize system capacities based on ratio of peak flow to nominal capacity, identify system bottlenecks, and quantify overflows/flooding. Results will be presented on GIS maps and hydraulic profiles.

Task 6 – Model Transfer

6.1 Develop and implement a model transfer program for City staff. Engineer will transfer requisite electronic files and knowledge on model development, calibration, and application. Detailed training of City staff on the use of PCSWMM or hydraulic modeling will not be provided. As part of the Model Transfer Program the Engineer will:

- Copy/install model files on City servers, simulate models using approved version of PCSWMM and confirm results are consistent with those produced in the final report.
- Copy/install all GIS files showing sanitary sewer delineations including breakdown of RDII contributing areas (e.g. sewers/manholes, laterals, foundation drains).
- Review with City staff how the updated "River Intrusion" approaches are implemented, and any necessary actions needed to implement that feature in future evaluations. For example, incorporate new river level time series data.
- Review Model Maintenance Plan with City staff. This includes a detailed review of the revised modeling standards, SOPs for incorporating new model components and calibration activities.
- Provide training for software tools that can be used by City staff including US-EPA SSOAP Toolbox and/or Tetra Tech's iPOP (optional at additional cost).
- Provide detailed training on the approach to calibrate sanitary areas using the groundwater routine within SWMM (optional at additional cost).

Task 7 – Final Report

7.1 Engineer will prepare a final report presenting all efforts and results from Tasks 1 through 6, including all Plans and Technical Memoranda from previous tasks, along with any additional narrative necessary to fully document the project effort. The final report will include summary tables and figures of the model calibration results including any recommendations for future data collection and/or investigation to further improve the model.

7.2 Engineer will develop a Model Maintenance Plan which will include recommendations for ongoing City efforts to maintain the system-wide model as an everyday tool. The Model Maintenance Plan will be a stand-alone document and include necessary updates to the City's existing modeling standards document for consistency with the updates implemented by this project. The plan will include SOPs and workflow diagrams to guide future model development and calibration efforts.

D. SCHEDULE

The Project will be completed per the following schedule. This schedule is based on receiving a Notice to Proceed by April 15, 2019 and receiving prompt review and approvals from City..

SCHEDULE	DATE
Task 1 – Information Review and Meetings	
• Review 2019 Flow Monitoring Program	Begin immediately upon Notice of Selection
• Information Review	April 15, 2019 – July 31, 2019
• Review Flow Monitoring Program Data	April 2019 – March 2020
• Meetings	April 2019 – January 2021
Task 2: Model Updates	June 1, 2019 – December 31, 2019
Task 3: Model Calibration	February 1, 2020 – August 31, 2020
Task 4: LTCP Model Update	June 1, 2020 – August 31, 2020

Task 5: Model Application	August 1, 2020 – December 31, 2020
Task 6: Model Transfer	December 1, 2020 - February 2021
Task 7: Final Report	December 1, 2020 – March 31, 2021

E. OPTIONAL ADDITIONAL SERVICES

Upon separate written authorization by City and negotiated fees, Engineer shall provide the following additional services:

- **Temporary Rain Gauge Installation.** Engineer will install any number of tipping-bucket style rain gauges, purchased by the City, for the duration of the 2019 Flow Monitoring Program. Rain gauges will continually record data at 5-minute intervals. Data will be downloaded via cellular equipment to a Telog site maintained by Engineer.
- **Radar Rainfall Data.** Engineer will develop a gauge-adjusted radar rainfall data set for the duration of the 2019 Flow Monitoring Program. Engineer will download raw NEXRAD radar data from the National Oceanic and Atmospheric Administration (NOAA) and use software tools to calibrate the radar data to point rain gauge data. The product will be a time series set of gauge-adjusted rainfall data that encompasses the City's WWTP service area for the duration of the 2019 Flow Monitoring Program.
- **Flow Metering Data QA/QC.** Engineer can provide full QA/QC of the flow metering data to provide a dataset ready for model calibration processes. Engineer will perform a detailed review of the complete dataset for each of the 102 depth-velocity meters, tracking depth and velocity over time, evaluating depth vs velocity data point against Manning curves, and performing mass balance of meters in series. Where possible, missing data and/or bad data points will be rated using field measurements and valid data points to produce a QA/QC'd dataset that can be readily applied to the project. We assume the City will provide check measurements for each meter when performing a confined-space entry maintenance or at least every two months.

Model Application

The calibrated model will be used for a to-be-determined set of applications, developed in coordination with the City. An allowance of $40,000 is established for completing these model applications. Task 5 of the detailed Scope of Work includes a list of potential engineering evaluations to perform under the allowance.

Contingency Tasks

Contingency tasks are authorized by the City and shall have prior approval of fees prior to commencement of services.

- Attend additional meetings as needed to review and discuss the Project.

PART II

CITY'S RESPONSIBILITIES

City shall, at its expense, do the following in a timely manner so as not to delay the services:

A. INFORMATION REPORTS/CITY UTILITY MAPS/AERIAL MAPS/CONTOUR MAPS

Make available to Engineer reports, studies, regulatory decisions and similar information relating to the Services that Engineer may rely upon without independent verification unless specifically identified as requiring such verification. The City will provide data to Engineer in a consolidated manner to limit the frequency and duration of data received.

Provide Engineer with electronic copies of the following GIS and base mapping information:

- Ortho aerial photography,
- Right-of-way, parcel/lot information and building footprints,
- Topographic contour data,
- 2017 LIDAR data
- Existing water and sewer lines,
- Impervious areas,
- Service areas for the contract customer inputs.

Provide Engineer with electronic copies of available flow, level, and precipitation data. The data collection QA/QC efforts will be performed by the City and provided to the Engineer ready for use on the project. City will provide available records of meter maintenance activities for the period of record provided.

- Historical flow meters and rain gauges.
- Temporary flow meters and rain gauges included in the 2019 Flow Monitoring Program.
- Pump station flow meter and/or run time data.
- Contract customer flow data.
- Groundwater table data (as available).

Provide Engineer with drawdown testing data for pump stations to be calibrated through this project. Testing data will include results for pumps run individually and in combination to quantify the range of pumping capacities.

B. REPRESENTATIVE

Designate a representative for the Project who shall have the authority to transmit instructions, receive information, interpret and define City's requirements and make decisions with respect to the Services. The City representative for this Agreement will be Wendy Reust, P.E.

C. DECISIONS

Provide all criteria and full information as to City's requirements for the Services and make timely decisions on matters relating to the Services.

D. FIELD SURVEY

Provide field survey services required to collect data to fill gaps in existing data, confirm critical hydraulic elevations, and confirm reference datum of existing data in the GIS and as-builts provided to Engineer.

PART III

COMPENSATION

A. COMPENSATION

Compensation for Services performed in accordance with Part I – Scope of Basic Engineering Services of this Agreement will be based on hours actually spent and expenses actually incurred with a not-to-exceed engineering fee of **$512,313** as summarized in Attachment 1.

Engineer's costs will be based on the hours incurred to complete the Project times the hourly rates of the various personnel, per Attachment 2 – Hourly Rate Schedule. All reimbursable costs incurred for the Project will be invoiced at cost.

B. BILLING AND PAYMENT

1. Timing/Format

   a. Engineer shall invoice City monthly for Services completed at the time of billing. Such invoices shall be prepared in a form and supported by documentation as City may reasonably require and shall include the employee name and title of all staff billing to project.

   b. City shall pay Engineer within 30 days of receipt of approved invoice.

2. Billing Records

   Engineer shall maintain accounting records of its costs in accordance with generally accepted accounting practices. Access to such records will be provided during normal business hours with reasonable notice during the term of this Agreement and for 3 years after completion.

PART IV
STANDARD TERMS AND CONDITIONS

1. STANDARD OF CARE. Services shall be performed in accordance with the standard of professional practice ordinarily exercised by the applicable profession at the time and within the locality where the services are performed. No warranty or guarantee, express or implied, are provided, including warranties or guarantees contained in any uniform commercial code.

2. CHANGE OF SCOPE. The scope of Services set forth in this Agreement is based on facts known at the time of execution of this Agreement, including, if applicable, information supplied by Engineer and City. Engineer will promptly notify City of any perceived changes of scope in writing and the parties shall negotiate modifications to this Agreement.

3. SAFETY. Engineer shall establish and maintain programs and procedures for the safety of its employees. Engineer specifically disclaims any authority or responsibility for general job site safety and safety of persons other than Engineer employees.

4. DELAYS. If events beyond the control of Engineer, including, but not limited to, fire, flood, explosion, riot, strike, war, process shutdown, act of God or the public enemy, and act or regulation of any government agency, result in delay to any schedule established in this Agreement, such schedule shall be extended for a period equal to the delay. In the event such delay exceeds 90 days, Engineer will be entitled to an equitable adjustment in compensation.

5. TERMINATION/SUSPENSION. Either party may terminate this Agreement upon 30 days written notice to the other party in the event of substantial failure by the other party to perform in accordance with its obligations under this Agreement through no fault of the terminating party. City shall pay Engineer for all Services, including profit relating thereto, rendered prior to termination, plus any expenses of termination.

Engineer or City, for purposes of convenience, may at any time by written notice terminate the services under this Agreement. In the event of such termination, Engineer shall be paid for all authorized services rendered prior to termination including reasonable profit and expenses relating thereto.

6.REUSE OF PROJECT DELIVERABLES. Reuse of any documents or other deliverables, including electronic media, pertaining to the Project by City for any purpose other than that for which such documents or deliverables were originally prepared, or alternation of such documents or deliverables without written verification or adaptation by Engineer for the specific purpose intended, shall be at City's sole risk.

7.OPINIONS OF CONSTRUCTION COST. Any opinion of construction costs prepared by Engineer is supplied for the general guidance of the City only. Since Engineer has no control over competitive bidding or market conditions, Engineer cannot guarantee the accuracy of such opinions as compared to contract bids or actual costs to City.

8.RELATIONSHIP WITH CONTRACTORS. Engineer shall serve as City's professional representative for the Services, and may make recommendations to City concerning actions relating to City's contractors, but Engineer specifically disclaims any authority to direct or supervise the means, methods, techniques, sequences or procedures of construction selected by City's contractors.

9. MODIFICATION. This Agreement, upon execution by both parties hereto, can be modified only by a written instrument signed by both parties.

10. PROPRIETARY INFORMATION. Information relating to the Project, unless in the public domain, shall be kept confidential by Engineer and shall not be made available to third parties without written consent of City.

11. INSURANCE. Engineer shall maintain in full force and effect during the performance of the Services the following insurance coverage; provided, however, that if a High Risk Insurance Attachment is attached hereto, the requirements of the High Risk Insurance Attachment shall be substituted in lieu of the following requirements;

a) Worker's Compensation per statutory requirements
b)General Liability $1,000,000 minimum per occurrence/ $1,000,000 aggregate (if the value of the projects exceeds $10,000,000 then this shall be $5,000,000 aggregate).
c) Automobile Liability $1,000,000 per occurrence
d) Products Liability $1,000,000 per occurrence
e) Completed Operations Liability $1,000,000 minimum per occurrence

The Certificate of Insurance must show the City of Fort Wayne, its Divisions and Subsidiaries as an Additional Insured and a Certificate Holder, with 30 days notification of cancellation or non-renewal. All Certificates of Insurance should be sent to the following address:
City of Fort Wayne Purchasing Department
200 East Berry St., Suite #480
Fort Wayne, IN 46802

12. INDEMNITIES. To the fullest extent permitted by law, Engineer shall indemnify and save harmless the City from and against loss, liability, and damages sustained by City, its agents, employees, and representatives by reason of injury or death to persons or damage to tangible property to the extent caused directly by the negligent errors or omissions of Engineer, its agents or employees.

13. LIMITATIONS OF LIABILITY. Each party's liability to the other for any loss, cost, claim, liability, damage, or expense (including attorneys' fees) relating to or arising out of any negligent act or omission in its performance of obligations arising out of this Agreement, shall be limited to the amount of direct damage actually incurred. Absent gross negligence or knowing and willful misconduct which causes a loss, neither party shall be liable to the other for any indirect, special or consequential damage of any kind whatsoever.

14. ASSIGNMENT. The rights and obligations of this Agreement cannot be assigned by either party without written permission of the other party. This Agreement shall be binding upon and insure to the benefit of any permitted assigns.

15. ACCESS. City shall provide Engineer safe access to any premises necessary for Engineer to provide the Services.

16. PREVAILING PARTY LITIGATION COSTS. In the event any actions are brought to enforce this Agreement, the prevailing party shall be entitled to collect its litigation costs from the other party.

17. NO WAIVER. No waiver by either party of any default by the other party in the performance of any particular section of this Agreement shall invalidate another section of this Agreement or operate as a waiver of any future default, whether like or different in character.

18. SEVERABILITY. The various term, provisions and covenants herein contained shall be deemed to be separate and severable, and the invalidity or unenforceability of any of them shall not affect or impair the validity or enforceability of the remainder.

19. AUTHORITY. The persons signing this Agreement warrant that they have the authority to sign as, or on behalf of, the part for whom they are signing.

20. STATUTE OF LIMITATION. To the fullest extent permitted by law, parties agree that, except for claims for indemnification, the time period for bringing claims regarding Engineer's performance under this Agreement shall expire one year after Project Completion.

21. CONSENT DECREE NOTIFICATION. Engineer shall perform, or cause others to perform, all services undertaken in connection with this Agreement in a good and workman-like manner and in conformance with the terms of the Consent Decree entered in the U.S District Court on April 1, 2008 by the United States and State of Indiana. Engineer acknowledges that it has been provided a complete copy of the Consent Decree which can be viewed at: http://www.cityoffortwayne.org/utilities/images/stories/docs/consent_decree/Consent_Decree.pdf

22. DOCUMENT RETENTION. Notwithstanding any other provision of this Agreement, Engineer agrees to preserve all non-identical copies of all documents, records and other information (whether in physical or electronic form) within Engineer's possession or control and which relate, in any manner, to the performance of the services undertaken in connection with this Agreement for a period of 1 year after the completion contemplated by the Agreement (the "Retention Period"). Prior to the end of the Retention Period, or at any earlier time if requested by the City, Engineer shall provide the City with complete copies of such documents, records and other information at no cost to the City. The copies shall be provided to the City on CD or DVD media, and individual files shall be in Adobe PDF format. The individual files shall be contained in a ZIP formatted file, and the filename of the ZIP shall include the name of the project and the Engineer. No part of any file shall be encrypted or protected from copying. Such copies shall be accompanied by a verified written statement from the Engineer attesting that it has provided the City with complete copies of all documents, records and other information which relates to the services contemplated by the Agreement.

ATTACHMENT #1

SUMMARY SHEET

SCOPE OF BASIC ENGINEERING SERVICES FEE PROPOSAL

Task 1: Information Review and Meetings For Services outlined in Task 1 a not to exceed fee of:	$132,229
Task 2: Model Updates For Services outlined in Task 2, a not to exceed fee of:	$90,939
Task 3: Model Calibration For Services outlined in Task 3, a not to exceed fee of:	$198,992
Task 4: LTCP Model Update For Services outlined in Task 4, a not to exceed fee of:	$9,698
Task 5: Model Application For Services outlined in Task 5, a not to exceed fee of:	$0
Task 6: Model Transfer For Services outlined in Task 6, a not to exceed fee of:	$9,161
Task 7: Final Report For Services outlined in Task 7, a not to exceed fee of:	$31,294
TOTAL NOT TO EXCEED FEE *:	**$472,313**

The individual task fees (with the exception of Task 5) are estimates and may be higher or lower at the completion of the project. However, the Total Not to Exceed Fee will not be exceeded without written authorization from the City. The City has allocated $40,000 as an allowance toward the completion of this optional service (Task 5).

Optional Services - As authorized by City

Model Application For Services outlined in Optional Additional Services, a not to exceed fee of:	$ 40,000

Contingency Tasks - As authorized by City

For additional Services and tasks required during the performance of the Project, but not specifically described herein, a not to exceed fee of:	$ 0.00
TOTAL NOT TO EXCEED FEE:	**$512,313**

ATTACHMENT #2

EMPLOYEE HOURLY RATE SCHEDULE

Payment of actual hourly rates for services rendered by Tetra Tech employees working directly on this Sewer System-Wide Hydraulic Model Update & Recalibration project will be in accordance with the following schedule. These hourly rates are effective as of January 11, 2019. They will be adjusted annually thereafter. Payment for reimbursable costs, as authorized by the City, will be invoiced at cost. These items may include, but not be limited to: shipping charges, printing services, special supplies not furnished by the City, or traveling and lodging expenses, as required, to perform management duties. Mileage for travel will be billed at the IRS business rate per mile automobile.

Engineers	
Engineer 1	$89.44
Engineer 2	$116.96
Engineer 3	$133.52
Project Engineer 1	$143.87
Project Engineer 2	$175.95
Sr Engineer 1	$228.74
Sr Engineer 2	$234.95
Sr Engineer 3	$240.12
Technicians	
Technician 1	$59.00
Technician 2	$79.70
Technician 3	$93.00
Sr Technician 1	$133.52
Sr Technician 2	$138.69
Sr Technician 3	$149.04
Information Technology	
Sys Analyst / Programmer 1	$79.70
Sys Analyst / Programmer 2	$128.34
Sr Sys Analyst / Programmer 1	$154.22
Sr Sys Analyst / Programmer 2	$208.04
Scientists	
Scientist 1	$84.87
Scientist 2	$101.43
Scientist 3	$106.61
Sr Scientist 1	$143.87
Sr Scientist 2	$175.95
Project Management	
Project Manager 1	$170.78
Project Manager 2	$185.81
Sr Project Manager	$200.45
Program Manager	$285.20

Computer Aided Design (CAD)	
CAD Technician 1	$69.35
CAD Technician 2	$74.52
CAD Technician 3	$79.70
CAD Designer	$96.26
Sr CAD Designer 1	$116.96
Sr CAD Designer 2	$128.34
Geographic Information Systems (GIS)	
GIS Analyst 1	$69.35
GIS Analyst 2	$84.87
Sr GIS Analyst	$114.11
GIS Application Developer	$138.69
Project Administration	
Project Assistant 1	$69.35
Project Assistant 2	$74.52
Project Administrator	$96.26
Sr Project Administrator	$106.61

CITY OF FORT WAYNE, INDIANA

Tetra Tech, Inc.

(Vendor Name)

VENDOR DISCLOSURE STATEMENT RELATING TO:

1. **FINANCIAL INTERESTS;**
2. **POTENTIAL CONFLICTS OF INTEREST;**
3. **CURRENT AND PENDING CONTRACTS OR PROCUREMENTS**

Vendors desiring to enter into certain contracts with the City of Fort Wayne, Indiana (the "City") shall disclose their financial interests, potential conflicts of interest and current and pending contract or procurement information as set forth below.

The following disclosures by Vendors are required for all contracts with annual payments by the City in the amount of $50,000 or more. Vendors shall disclose their financial interests, potential conflicts of interest and other contract and procurement information identified in Sections 1, 2 and 3 below as a prerequisite for consideration for a contract awarded by the City. This Disclosure Statement must be completed and submitted together with the Vendor's contract, bid, proposal or offer.

A publicly traded entity may submit its current 10K disclosure filing in satisfaction of the disclosure requirements set forth in Sections 1 and 2 below.

Section 1: Disclosure of Financial Interest in Vendor See 10K.

a. If any individuals have either of the following financial interests in Vendor (or its parent), please check all that apply and provide their names and addresses (attach additional pages as necessary):

(i) Equity ownership exceeding 5% (___)

(ii) Distributable income share exceeding 5% (___)

(iii) Not Applicable (If N/A, go to Section 2) (___)

Name: _____ Name: _____

Address: _____ Address: _____

b. For each individual listed in Section 1a. show his/her type of equity ownership:

sole proprietorship (___) stock (___)
partnership interest (___) units (LLC) (___)
other (explain)_____

c. For each individual listed in Section 1a. show the percentage of ownership interest in Vendor (or its parent): ownership interest:

Name: _____ _____%

Name: _____ _____%

See 10K

Section 2: Disclosure of Potential Conflicts of Interest (not applicable for vendors who file a 10K)

For each individual listed in Section 1a. check "Yes" or "No" to indicate which, if any, of the following potential conflict of interest relationships apply. If "Yes", please describe using space under applicable subsection (attach additional pages as necessary):

a. City employment, currently or in the previous 3 years, including contractual employment for services:
Yes _____ No _____

_____

_____

b. City employment of "Member of Immediate Family" (defined herein as: *Spouse, Child, Step Child, Parent or Step Parent, Father-in-law or Mother-in-law, Brother or Sister, Step Brother or Step Sister, Half Brother or Half Sister, Brother-in-law or Sister-in-law, Son-in-law or Daughter-in-law, Grandparent or Step Grandparent, Grandparent or Step Grandparent of Spouse, Grandchild)*
Including contractual employment for services in the previous 3 years:
Yes _____ No _____

_____

_____

c. Relationship to Member of Immediate Family holding <u>elective</u> City office currently or in the previous 3 years: Yes _____ No _____

_____

_____

_____

Section 3: DISCLOSURE OF OTHER CONTRACT AND PROCUREMENT RELATED INFORMATION

a. Does Vendor have **<u>current</u>** contracts (including leases) with the City? Yes _____ No X

If "Yes", identify each current contract with descriptive information including purchase order or contract reference number, contract date and City contact below (attach additional pages as necessary).

_____

_____

_____

b. Does Vendor have **<u>pending</u>** contracts (including leases), bids, proposals, or other pending procurement relationship with the City? Yes _____ No X

If "Yes", identify each pending matter with descriptive information including bid or project number, contract date and City contact using space below (attach additional pages as necessary).

_____

_____

c. Does vendor have any existing employees that are also employed by the City of Fort Wayne?

Yes _____ No X

If "Yes", provide the employee's name, current position held at vendor, and employment payment terms (hourly, salaried, commissioned, etc.).

Name / Position / Payment Terms:

_____

Name / Position / Payment Terms:

_____

Name / Position / Payment Terms:

_____

d. Does vendor's representative, agent, broker, dealer or distributor (if applicable) have any existing employees that are also employed by the City of Fort Wayne? For each instance, please provide the name of the representative, agent, broker, dealer or distributor; the name of the City employee, and the payment terms (hourly, salaried, commissioned, etc.). NO

Company / Name / Payment Terms: _____

Company / Name / Payment Terms: _____

Section 4: CERTIFICATION OF DISCLOSURES

In connection with the disclosures contained in Sections 1, 2 and 3 Vendor hereby certifies that, except as described in attached Schedule A:

a. Vendor (or its parent) has not, within the five (5) year period preceding the date of this Disclosure Statement, been debarred, suspended, proposed for debarment declared ineligible or voluntarily excluded from any transactions by any federal, state or local unit of government;

b. No officer or director of Vendor (or its parent) or individual listed in Section 1a. is presently indicted for or otherwise criminally or civilly charged by a governmental entity (federal, state or local) with commission of any offense;

c. Vendor (or its parent) has not, within the five (5) year period preceding the date of this Disclosure Statement, had one or more public transactions (federal, state or local) terminated for cause or default;

d. No officer or director of Vendor (or its parent) or individual listed in Section 1a. has, within the five (5) year period preceding the date of this Disclosure Statement, been convicted, adjudged guilty, or found liable in any criminal or civil action instituted by the City, the federal or state government or any other unit of local government; and

e. Neither Vendor, nor its parent, nor any affiliated entity of Vendor, or any of their respective officers, directors, or individuals listed in Section 1a. is barred from contracting with any unit of any federal, state or local government as a result of engaging in or being convicted of: (i) bid-rigging; (ii) bid-rotating; or (iii) any similar federal or state offense that contains the same

elements as the offense of bid-rigging or bid-rotating

f. Pursuant to IC 5-22-16.5, Vendor hereby certifies they do NOT provide $20 million dollars or more in goods or services to the energy sector of Iran. Vendor also certifies it is not a financial institution that extends $20 million dollars or more in credit that will provide goods or services to the energy sector of Iran or extends $20 million dollars or more in credit to a person identified on the list as a person engaging in investment activities in Iran.

The disclosures contained Sections 1, 2 and 3 and the foregoing Certifications are submitted by

Tetra Tech, Inc.
(Name of Vendor)

710 Avis Drive, Ann Arbor, MI 48108
Address

( )734-213-4063
Telephone

victor.cooperwasser@tetratech.com
E-Mail Address

The individual authorized to sign on behalf of Vendor represents that he/she: (a) is fully informed regarding the matters pertaining to Vendor and its business; (b) has adequate knowledge to make the above representations and disclosures concerning Vendor; and (c) certifies that the foregoing representations and disclosures are true and accurate to the best of his/her knowledge and belief.

Name (Printed) Victor Cooperwasser Title Senior Project Manager

Signature Vic Cooperwasser Date March 5, 2019

NOTE: FAILURE TO COMPLETE AND RETURN THIS FORM WITH YOUR DOCUMENTATION MAY RESULT IN YOUR CONTRACT, OFFER, BID OR PROPOSAL BEING DISQUALIFIED FROM CONSIDERATION.

CONTRIBUTION STATEMENT BY A BUSINESS ENTITY

I, Victor Cooperwasrer, under the penalties of perjury, affirm and state as follows:

1. I am over the age of eighteen (18) years old.

2. I am an officer or party of the below named company/firm, a business entity within the meaning of Section 37.28 of the Fort Wayne Municipal Code of Ordinances (the "City Code").

3. As an officer or party of the below named company/firm, I am authorized to execute this *Contribution Statement by a Business Entity* on behalf of said business entity.

4. Since January 1, 2018, neither the below named company/firm, nor any of its covered principals, partners, officers, subsidiaries, or other individuals as defined in Section 37.28 has made a contribution to any City of Fort Wayne candidate or holder of public office, whether directly or indirectly by contribution to such candidate's or holder of public office's campaign committee, a City or Allen County party committee or a political action committee that regularly engages in the support of municipal elections and/or municipal parties in the City of Fort Wayne, which would prohibit the City of Fort Wayne from negotiating or entering into a contract with the below named company/firm under Section 37.28 of the City Code.

5. This *Contribution Statement by a Business Entity* is made pursuant to Section 37.28 of the City Code to support approval of a contract between the City of Fort Wayne, Indiana and the below named company/firm.

Tetra Tech, Inc.
Company/Firm

March 5, 2019
Date

By: Vic Cooperwasrer

Printed: Victor Cooperwasrer

Title: Senior Project Manager

City Utilities
Engineering

Interoffice Memo

Date: March 18, 2019

To: Common Council Members

From: Wendy Reust, Program Manager, City Utilities Engineering

Re: System Wide Interceptor Hydraulic Model Recalibration

Council District – City Wide

This project includes updating and recalibrating the Cities interceptor sewer model. The model is a computer program that estimates flows in different parts of the system so that Utility Engineering can have an idea on how much capacity we have in the existing sewer system. We also know where we have capacity issues and we use the model to help us decide what size the new facilities should be to fix the capacity issues. We can also use the model to predict what size rainfall event it takes before the system begins to overflow. The City uses this tool as a planning tool, a design tool and we will use it as a post construction monitoring tool. Phase II of this project includes field data analysis, refine and recalibrate hydraulic model, apply the recalibrated model for baseline hydraulic assessment, and develop the project report.

Implications of not being approved: The city's sewer system hydraulic model that was last recalibrated in 2010 provides the basis for the City's planning and designing of sewer system improvement projects. The reliability and accuracy of a hydraulic model to support design projects and perform capacity assurance has limitations when the hydraulic model is outdated and does not accurately reflect the sewer system. It is a critical to update the City's hydraulic model and recalibrate it and to have continued confidence on the model reliability and its intended applications. The model provides the preliminary basis for sizing all CSO control projects and will also be important in demonstrating the performance of them after implementation. In addition, the model can support the capacity assessment and assurance efforts in the sanitary sewer interceptors.

If Prior Approval is being Requested, Justify:

The cost of the said project is funded by State Revolving Fund Bond

Council Introduction Date: March 26, 2019

CC: BOW
Matthew Wirtz
Diane Brown
File