



**Exhibit A  
Scope of Services**

**City of Tontitown  
Project No. W01-2501820  
2026 Wastewater Master Plan**

**General**

The scope of services includes a wastewater master plan (WWMP) for the City of Tontitown (City). The WWMP will include development of flow projections, a wastewater collection system hydraulic model, and a capital improvement plan (CIP). The WWMP will be developed for a 25-year planning horizon, extending through the year 2050.

This proposal's scope of services includes the following tasks:

1. Project Management
2. Historical Data Analysis and Wastewater Projections
3. Flow Monitoring and Analysis
4. Hydraulic Model Development and Calibration
5. Wastewater System Assessment
6. Capital Improvements Plan and Master Plan Report

**Assumptions**

In developing the scope of work, schedule, and associated level of effort discussed in this proposal, Garver has made the assumptions outlined below:

1. The City represents that any information provided to Garver has been reviewed and verified for accuracy of both data and recommendations.
2. The data request will be provided to the city within seven (7) days of the kickoff meeting. The City will complete the request within twenty-one (21) days of the request submission.
3. The City of Tontitown will take twenty-one (21) days to review and provide feedback on the Tontitown WWMP rough draft report.
4. A condition assessment of lift stations, force mains, manholes (MHs), and sewer mains are not included.
5. Garver will develop a model of the wastewater collection system in Bentley SewerGEMS software. It is assumed that the collection system model will be an "all pipes" model that includes all wastewater MHs, gravity sewer lines, lift stations, and force mains. It is assumed that the collection system model will end at the end of the collection system at the WWTP. Gravity mains with diameter 8-inch and smaller will not be included in the model if there is not sufficient elevation information available to define pipe and MH inverts.



## **Task 1 - Project Management and Administration**

Garver will provide project management services to successfully execute the project. These services include:

- 1.1. Scheduling: Provide project planning and scheduling including meeting with the City as required to coordinate the planning and scheduling tasks of the project.
- 1.2. Progress Reporting: Provide the City with monthly project status reports including progress on work tasks and schedule throughout the project.
- 1.3. Invoicing: Provide invoice processing to provide the City with detailed monthly invoices.
- 1.4. Kick-off Meeting: Garver will attend one (1) kick-off meeting to discuss project objectives, internal and external team, lines of communication, and schedule. Garver will also prepare and present a request for information to the City prior to the project kickoff meeting.
- 1.5. Project Progress Meetings: Garver will facilitate up to a maximum of eight (8) progress meetings with the City to review the project status, discuss interim findings, discuss technical aspects, obtain deliverable review comments, review upcoming activities, and provide schedule updates. The meetings will be a hybrid of in-person and online attendees. Garver will prepare meeting minutes to document the meetings.
- 1.6. Project Management and Quality Control Plans: Garver will prepare an overall project management plan (PMP) and quality control/assurance plan (QCP) to be used for all tasks.

## **Task 2 - Historical Data Analysis and Wastewater Projections**

- 2.1. Initial Request for Information: Garver will prepare a data request document related to wastewater system information for the Project. The initial request for information will include but not be limited to:
  - Existing Wastewater Collection System GIS
  - Lift station, force main, and gravity main record drawings, as needed where GIS data is limited.
  - Lift station supervisory control and data acquisition (SCADA) data.
  - Last three years of Wastewater Treatment Plant influent data.
  - Electronic water and wastewater customer billing data with associated addresses for the last five years.
  - Manufacturer pump curves and the most recent pump testing information (if available) for pumps at lift stations.
  - Operational set points for wastewater system operations, such as on/off levels for different pumps at system lift stations.
  - Records of historical sanitary sewer overflows (SSOs) and complaint/problem areas.
  - Previous reports and studies related to planning and wastewater infrastructure.
  - Recently completed projects or ongoing projects within the collection system.
  - Elevation information for the service area (topographic contour shapefiles, LIDAR data, etc.).
  - Current land usage data and any past land usage data that was used in previous Master Plans.



- 2.2. Population and Land Use Projections: Garver will review available historical and future population, development, and land use information to project development for existing (2025), 5-year (2030), 10-year (2040), and 25-year (2050). Garver will develop up to three (3) service population and development projections for the service area (e.g., low growth, medium growth, and high growth) capturing a range of potential growth for consideration by the City. These projections will be based on historical trends, available planning documents, future land use projections, and known development information provided by the City.
- 2.3. Wastewater Flow Projections: Garver will calculate and spatially distribute projected wastewater flows for 5-year, 10-year, and 25-year based on selected design criteria, land use, and/or customer billing data assumptions.
- 2.4. Projections Workshop: Garver will facilitate one workshop with the City to present the population and wastewater flow projections, including any assumptions made, estimated existing and future flows, and the estimated system wide wet weather peaking factor.

### **Task 3 - Flow Monitoring and Analysis**

- 3.1. Flow Monitoring: Garver will review the wastewater system layout and develop a recommended flow and rainfall monitoring program. The flow monitoring will be provided by a subconsultant to Garver. It is anticipated that up to six (6) temporary flow monitors will be used. It is anticipated that up to six (6) rainfall gauges will be used. Three months of flow and rain data will be collected.
- 3.2. Basin Delineations: Garver will complete flow monitoring basin delineations based on topographical information, system layout information, and proposed short-term flow monitoring locations and existing long-term flow monitoring locations.
- 3.3. Flow Monitoring Analysis: Garver will complete the following subtasks based on the flow and rainfall monitoring data collection during the flow monitoring period:
  - Develop dry-weather sewer loadings and diurnal flow patterns for each flow monitoring basin in the updated wastewater hydraulic model.
  - Analyze the rainfall-derived infiltration and inflow (RDII) response for each flow monitoring basin for each of the observed wet-weather events that recorded over 0.5 inches of rainfall within a 24-hour period.
  - Determine the infiltration and inflow (I/I) per inch of rainfall for each of the flow monitoring basins over the duration of the flow monitoring and rank the basins based on rate of I/I normalized to basin properties.

### **Task 4 - Hydraulic Model Development and Calibration**

- 4.1. Hydraulic Model Development: Garver will develop a wastewater collection system hydraulic model based on the updated GIS information and drawings provided by the City. The model will generally include all gravity sewers 8-inch and larger, lift stations, and force mains. The model will be updated with any projects completed or near completion within the wastewater system.



- 4.2. Dry-Weather Calibration: Garver will perform a dry-weather analysis for the days defined to be “dry” in the observation period and calibrate the model to those conditions as observed at the flow monitoring locations.
- 4.3. Wet-Weather Calibration: Garver will develop RTK parameters for use in the hydraulic model based on the RDII response and rainfall hyetographs with a goal of calibrating the model’s wet-weather response to the approximate average response to a given rainfall event.
- 4.4. Evaluation and Design Criteria for System Improvements: Garver will confirm and update wastewater system planning criteria, such as design flows, design storm, minimum and maximum pipeline velocities, ADEQ requirements, and surcharging guidelines for project initiation and design of improvements. The criteria will be based on the level of service and will determine acceptable performance under different conditions, including what surcharging, if any, is allowed, and minimum and maximum velocity constraints, etc.
- 4.5. Wastewater System Assessment Hydraulic Evaluation: Garver will perform modeling to identify system deficiencies based on the design and evaluation criteria. Garver will model the following scenarios for the existing system and up to three (3) planning horizons including:
  - A. Average dry-weather conditions.
  - B. Design wet-weather conditions: 2- and 5-year 24-hour design storms based on National Weather Service publications.
- 4.6. Wastewater System Improvements Identification: Garver will develop and size infrastructure improvements to meet established level of service criteria. Garver will develop improvements for gravity mains, lift stations, force mains, and special structures, as necessary.
- 4.7. Phasing of Wastewater System Improvements: Garver will use the interim 5-year and 10-year horizons to determine phasing of wastewater system improvements based on the overall set of improvements identified in the 25-year planning horizon. Garver will use dry- and wet-weather system evaluations to prioritize projects.
- 4.8. Model Development and Results Workshop: Garver will conduct a workshop with the City to review and discuss proposed wastewater system improvements, phasing, and prioritization.

#### **Task 5 - Capital Improvements Plan and Master Plan Report**

- 5.1. Draft Capital Improvement Plan (CIP) Costs: Garver will develop a comprehensive Wastewater Capital Improvements Plan based on capacity needs for the existing, 5-year, 10-year, and 25-year planning horizons. Conceptual cost estimates for each proposed project will be developed in the Year 2025 dollars including engineering and contingencies. Each of these conceptual cost estimates will be a Class 4 estimate as defined by the Association for the Advancement of Cost Engineering (AACE), which is consistent with cost estimates developed for studies and feasibility. The expected accuracy range for the estimates is -30% to +50% of the estimated values.
- 5.2. CIP Phasing: Garver will identify triggers for each project. Triggers will be based on specific developments (e.g., collection system infrastructure needed to supply a newly developed area) and capacity-related information, such as the number of connections, system flows, etc., as applicable.



- 5.3. CIP Mapping: One (1) large scale map will be produced showing proposed projects and phasing through the buildout scenario. Garver will also prepare one-page quick reference guides for the recommended capital projects, including an exhibit, detailed description, project trigger, and justification for each project.
- 5.4. Draft WWMP Report: Garver will prepare a WWMP Report summarizing wastewater flow projections, model updates and calibration, existing and future system analysis, and CIP development.
- 5.5. Draft WWMP Workshop: Garver will facilitate one workshop with the City and up to three (3) Garver team members City to review the draft WWMP.
- 5.6. Final WWMP Report: Garver will revise the WWMP Report based on comments from the City and prepare a Final WWMP Report in electronic format (PDF). This draft will include an Executive Summary summarizing the sections of the report and the Capital Improvement Plan.

### **Summary of Deliverables**

The following will be submitted to the City, or others as indicated, by Garver:

- A. Electronic files including progress reports, schedules, meeting minutes, and other files as requested.
- B. Project Kickoff Presentation in PDF format
- C. Progress Meeting Presentation and Minutes in PDF format
- D. Historical Data Analysis and Wastewater Projections Presentation in PDF format
- E. Hydraulic Model Update and Calibration Presentation in PDF format
- F. Wastewater System Assessment Presentation in PDF format
- G. Draft WWMP in PDF format
- H. Final WWMP in PDF format

### **Extra Work**

For work not described or included in EXHIBIT A – Scope of Work, Special Services will be as directed by the City in writing for an additional fee as agreed upon by the City and GARVER.

The following services are not included as part of the basic services and will be performed at the request of the City and with additional compensation:

- A. Design, bidding, and construction administration services.
- B. Litigation assistance.
- C. Meetings or coordination with ADEQ.
- D. Any condition assessment, including CCTV inspection and/or manhole inspection.
- E. Field survey.
- F. Lift station drawdown tests.
- G. Delays in the Project schedule at no fault to Garver, which may have impacts on analyses performed, and which would affect the budget for the scope of services reflected herein.



## Schedule

Garver shall begin work under this Agreement within ten (10) days of a Notice to Proceed and shall endeavor to complete the work in accordance with the estimated schedule below:

Task Description	Estimated Calendar Days
Task 1. Assumptions	Concurrent with other tasks
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Project

Task 2. Historical Data Analysis and Wastewater Projections	90 days from Notice to Proceed
Task 3. Flow Monitoring and Analysis	120 days from flow monitor deployment
Task 4. Hydraulic Model Update and Calibration	60 days from completion of Task 3.
Task 5. Wastewater System Assessment	30 days from completion of Task 4.
Task 6. Capital Improvements Plan and Master Plan Report	60 days from completion of Task 5.