

## Exhibit A - Scope of Services

The key tasks are summarized below.

### Alternatives Analysis

The purpose of the Area 5 storm sewer improvements is to mitigate flooding at the intersection of S. Washington Avenue and Lawndale, the Intersection of Lawndale and Hine Avenue, through the back yards of residences down to Hine Avenue, and along Millwood Lane and American Way to the intersection with S. Moreland Blvd. To accomplish this, two main storm sewer alignments will be considered:

1. Alternate 1: New storm sewer on Lawndale Ave. from S Hine Ave. to Millwood Ln., Millwood Ln. from Lawndale Ave. to American Ave., American Ave. from Millwood Ln. to Joellen Dr., and on Joellen Dr. south to the Woodfield Park outfall.
2. Alternate 2: New storm sewer on Lawndale Ave. from S Hine Ave. to Millwood Ln., Millwood Ln. from Lawndale Ave. to American Ave., American Ave. from Millwood Ln. to S Moreland Blvd., S. Moreland Blvd. from American Ave. to Dopp St., and on Dopp St. west to the Woodfield Park outfall.

These alternatives will be analyzed to determine which is most feasible and cost-effective. Both alternatives overlap the proposed route of the Greenmeadow Interceptor project. Coordination with the Greenmeadow project will be a consideration in selecting the storm sewer alignment.

For either alternative, the existing storm sewer between Lawndale Ave. and American Ave. will likely remain, as there are connections to this sewer. The project may include rehabilitation of this storm sewer using cured-in-place lining.

The hydraulic model of the storm sewer collection system will be refined by dividing the large drainage basins along S. Moreland Blvd. and W. St. Paul into smaller drainage sub-basins in order to better represent actual conditions in the study area. The revised model will be used to depict existing areas of flooding and mitigation effects of the planned storm sewer improvements for the 3.8-inch and 6-inch rainfall events. We will also analyze if there are sufficient existing inlets at the flooded Lawndale intersections to convey the surface runoff into the storm sewer system. Additional inlets will be added to the project, if required.

Conceptual alignment plans and cost estimates will be included in a Technical Memorandum (TM) along with model results.

#### Deliverables

- *Alternatives Analysis TM*
- *Summary of modeling results*
- *Alternatives Analysis Workshop*

### Storm Sewer Design

Design development will include detailed construction plans, specifications, and cost estimates. A portion of the project from S. Moreland Blvd to Woodfield park is located within the Greenmeadow Interceptor project area. This segment will be incorporated into the Greenmeadow Interceptor Bidding Documents. The new storm sewer from the Lawndale Avenue/S. Hine Avenue intersection to S. Moreland Blvd. and the new storm sewer south of Dopp Street (downstream of the Greenmeadow area) will be bid together, with the south of Dopp section as an alternate bid that can be selected depending on bid costs.

Plans will be submitted for review at the 60% and 90% design stages. Specific tasks include:

- Prepare technical specifications for the project.
- Prepare drawings. The plan set will include:
  - Title page and General Notes
  - Standard details and special details
  - Benchmarks and alignment location
  - Traffic control/staging
  - Erosion control plan
  - Storm sewer plan and profile
  - Side street sewers connections and inlet leads will be described using plan notes to provide inverts and pipe lengths. Profile views of these pipes are not included.
  - Road construction plans for pavement replacement (flange to flange) and spot curb repairs.
  - Storm sewer rehabilitation, if required, will be shown on existing record drawings or an aerial photograph
  - In road reconstruction areas, update curb ramps to meet ADA standards
  - Water service reconnection and water main crossing modification, as needed, to accommodate proposed storm sewer. Relocation of water mains, other than at a crossing, is not anticipated at this time and is not included in the scope of the project.
  - Pavement marking
- The plan and profile sections will be aligned vertically, with the profile at the bottom of the drawing. The drawings will show existing utilities and the proposed storm sewer.
- Donohue will use AutoCAD Civil 3D to design the project and will enter existing GIS information to create systems of existing utilities that will allow for 3D modeling. This will be used to show existing utilities in the interceptor profile and to check for conflicts.
- Donohue will submit plans to utility owners and coordinate with them to identify conflicts, potential utility relocations, and existing utility support or protection locations.
- Donohue will coordinate with Waukesha Water Utility to resolve water main or water service conflicts.
- Develop an Opinion of Probable Construction Costs.
- Prepare for and conduct 60% Design Review Workshop. Meeting notes will be prepared following the meeting and distributed for review and approval.
- Prepare exhibits and attend public information meeting.
- Upon City review of the preliminary design, refine the design as necessary to produce 90% design drawings and technical specifications.
- Prepare for and conduct 90% Design Review Workshop. Meeting notes will be prepared following the meeting and distributed for review and approval.

### **Deliverables**

- *Utility Coordination – Plans to Utility owners*
- *Workshop No. 2 and No 3 - Agenda and Notes*
- *Subsurface Investigation Report*
- *60% Design Plans and Technical Specifications*
- *90% Design Plans and Technical Specifications*
- *Public information meeting – Prepare Exhibits and attend*
- *Engineer's Opinion of Probable Construction Costs*

## Survey

A topographic survey will be performed by TerraTec for the storm sewer in Woodfield Park, along the existing storm sewer from Dopp Street south to the outfall. The survey will cover an area approximately 50 feet wide, centered on the storm sewer. If the storm sewer alignment alternative on American Avenue between S. Moreland Blvd. and Joellen Drive is selected, a topographic survey of American Avenue from Joellen Drive to S. Moreland Blvd, back of curb to back of curb will be performed. Survey activities will include:

- Contact and coordinate field marking of existing utilities by “Digger’s Hotline”.
- Perform a field survey to collect surface topography and prepare maps showing 1-foot contour intervals. Streets, sidewalks, property lines, buildings, structures, curb cuts, railroads, plantings and other surface features relevant for construction will be shown. Buried utilities marked by Diggers Hotline will be shown.
- Provide sewer and water utility information including sewer inverts, water valve measure-downs, and pipe sizes.
- Trees, if any, will also be included. Wooded areas will be outlined.
- Road right-of-way, existing easements and property lines will be obtained from the on-line Waukesha County GIS.
- Provide a description, location and elevation of bench marks used in the survey along with survey traverse points.
- City datum (0=780.558) will be used for vertical data point collection. The Wisconsin State Plane Coordinate System, South Zone will be used for horizontal data point collection.
- Perform a control traverse through the City control point(s) to combine the existing city mapping and the former Green Meadow survey.
- Perform rotation or coordinate adjustment as needed to align the two City surveys (Green Meadow and Area 5).

### Deliverables

- *Supplemental survey base map of Woodfield Park.*
- *Supplemental survey base map of American Avenue from Joellen to S. Moreland (optional)*
- *Combine survey with City-provided mapping*

## Geotechnical Investigation

We have included a geotechnical investigation consisting of four soil borings to a depth of 10 feet and a written report documenting the results of the field and laboratory test programs. Included in the report will be boring logs documenting the encountered soil and groundwater conditions, the general suitability of the soils within the project area for the planned construction, anticipated construction conditions that may be encountered, dewatering recommendations, and site preparation information relative to the subsurface conditions.

### Deliverables

- *Geotechnical Investigation Report*

## Permits

We will prepare a WRAPP for the construction activities. A wetland permit for activities associated with the outfall in Woodfield Park is not included in this scope of services. If required, it may be prepared as part of the park improvements project. If it is needed, and cannot be combined with the park project, we have provided an estimated fee in the “optional” section of the fee schedule for preparing a general wetland permit for disturbing wetlands at the outfall location.

### Bidding Phase

- Incorporate feedback from the 90% design review meeting and any subsequent City of Waukesha comments into drawings and specifications.
- Provide an opinion of probable construction cost. Furnish electronic copies of the final schedule to the City in Microsoft Excel and Adobe Acrobat formats.
- Provide an electronic copy of the final sealed design plans in Adobe Acrobat “PDF” format (11x17 size). Electronic copies of all plans shall also be supplied in the latest version of AutoCAD.
- Distribution of the plans and project bidding will be conducted directly by the City.

## Project Timing

We propose the following schedule based on receiving Notice to Proceed on or around December 8, 2017.

<u>Task</u>	<u>Date</u>
Survey and geotechnical investigation	December 29, 2017
Alternatives Analysis Technical Memorandum Report	January 8, 2018
Preliminary Design Documents	January 31, 2018
Final Contract Documents	March 2, 2018
Project Bidding Services	March 2018