# ANN ARBOR STORMWATER GIS DATA COLLECTION AND COMPREHENSIVE HYDRAULIC MODEL DEVELOPMENT

# Presentation

- Overall Stormwater GIS/Model (SGM) Project Elements
- SGM Project Background
- SGM Timeline
- SGM Project Status
- SGM Phase I & II Goals & Objectives
- SGM Scope: Phase I & II
- SGM Phase I & II Budget
- Questions

# Overall Project Elements

- Improve operations & maintenance (O&M) capabilities
- Produce an asset management foundation
- Maximize GIS data management
- Integrate GIS and hydraulic model data
- Develop comprehensive creekshed hydrology and hydraulic models
- Engage creekshed groups in planning improvements and evaluating development proposals

# SGM Project Background

- The infrastructure maintenance management system (GIS/Cityworks) has not been implemented for stormwater O&M
- The asset management inventory is not completed
- Current citywide storm models include only large pipes and channels and do not model system to the "neighborhood" level

# SGM Project Background (Cont)

- Current creekshed models were created independently and use multiple software platforms
- The hydrology and hydraulic models are based on limited monitoring data for calibration
- Overland flow impacts were not consistently used in previous models

# SGM Timeline

SGM is a five phase/five year project

- Phase I: Collect GIS data (Year 1)
- Phase II: Integrate the GIS with the model information and gather general monitoring data (Year 1)

# SGM Timeline (Cont)

- Phase III: Engage the public and perform preliminary calibration (Year 2)
- Phase IV: Gather comprehensive monitoring data and finalize calibration (Years 3 and 4)
- Phase V: Analyze modeling results and engage creekshed groups/neighborhoods (Year 5+)

# SGM Project Status

- The RFP committee evaluated 8 prospective consultant teams
- Of the 8 teams, 3 were selected for a comprehensive interview
- CDM was selected based on the overall quality and completeness of their proposed work and proposed budget

# SGM Project Status (Cont)

- SGM budget for Phase I and II has been endorsed by Public Services
- Resolution to approve a professional services contract with CDM is to be presented to Council on February 20th
  - Resolution will authorize Phase I and II work only
  - Contract will include provisions for CDM to begin Phases III – V only upon approval by City Council

# SGM Phase I and II Goals

- Construct an accurate stormwater GIS coverage
- Create a foundation for stormwater asset management
- Improve inventory and data management for increased operations and maintenance efficiency
- Create an initial stormwater model that links to the GIS data

# SGM Phase I and II Objectives

- Complete the stormwater GIS
  - GPS stormwater nodes (inlets and manholes)
  - Develop accurate storm system GIS layers
  - Attribute GIS features and link design drawings to GIS
- Develop a complete hydraulic model for the stormwater system
  - Link GIS data to hydraulic model
  - Gather general monitoring information citywide

# SGM Scope: Phase I and II

- Develop As-built Management System
- Create provisional GIS
- Collect storm and sanitary feature information in field
- Assemble and QA/QC GIS information
- Update city GIS Server
- Collect preliminary monitoring and model data
- Integrate GIS with hydraulic model
- Perform initial analysis on monitoring data

# SGM Phase I Budget

| Phase I Tasks | Cost |
|---|---|
| As-built Management System | $ 115,280.00 |
| Create Provisional GIS | $ 228,356.00 |
| Collect Storm and Sanitary Feature Information in Field | $ 643,613.00 |
| Assemble and QA/QC Information | $ 100,791.00 |
| Update City ArcSDE (GIS) Server | $ 22,415.00 |
| **Total Phase I Cost** | **$1,110,455.00** |

# SGM Phase II Budget

| Phase II Tasks | Cost |
|---|---|
| Compile Existing Stormwater Information | $5,668.00 |
| Develop Base Hydrologic Model | $25,037.00 |
| Develop Base Hydraulic Model | $105,512.00 |
| Collect and Analyze Monitoring Data | $137,031.00 |
| **Total Phase II Cost** | **$273,248.00** |

# SGM Professional Services Agreement (PSA) Budget

| PSA Budget | Cost |
|---|---|
| Phase I: GIS Development | $1,110,455.00 |
| Phase II: Model Development | $273,248.00 |
| Contingency Funds | $65,000.00 |
| Staff and Miscellaneous Costs | $51,297.00 |
| **Total PSA Budget** | **$1,500,000.00** |

# Questions?

Systems Planning, Public Services
City of Ann Arbor