Stormwater Capital Improvements Program
Greenwich, Connecticut

CDM Smith used a number of computer programs to develop hydrologic and hydraulic models, including AutoCAD, ArcReader, ArcMap, GIS, Microsoft Excel, HEC-HMS, HEC-GeoHMS, HEC-RAS, HEC GeoRAS and XPSWMM5. The models were run for both existing and future conditions. Existing conditions model results were compared to actual flooding accounts for the April 2007 storm event. Based on statistical rainfall data, this event correlated to a 25-year storm and was used to calibrate flooding limits produced by the model with actual accounts from residents. The future conditions were based on information gathered from the Town of Greenwich Planning and Zoning Department.

The models were then used to develop a series of alternate improvements to alleviate flooding within each watershed. Improvements considered included dredging and channel resizing, increasing capacity within floodplains, new culverts and dams, flood storage facilities, replacements within pipe networks and diversion structures. We evaluated each alternative and made recommendations based on the modeling results, public comments and discussions with the Town. Cost estimates were then developed for all recommended alternatives and included in the reports. All recommended improvements were then summarized and compared using the capital improvements ranking criteria developed for the project to compare and rank 65 stormwater improvements within the various watersheds.

Under a separate project, CDM Smith is currently overseeing construction of two of the recommended improvements, providing shop drawing review, construction administration and resident engineering services.

During the study, the Town realized that updates were needed on their GIS stormwater mapping. CDM Smith is currently working with the Town to research, field inspect, global positioning system (GPS) locate and GIS update the Town’s drainage information. The Town has identified priority areas for drainage mapping updates and developed a multi-year plan for updating the Town’s GIS system. CDM Smith completed the first priority area and is currently working on the field work for the second priority area.
MS4 Compliance Assistance and GIS Development
New Britain, Connecticut

Project Information

Project Dates:
2016 – Ongoing

Delivery of Services
All contracted services to date have been completed on schedule with information provided to EPA and CT DEEP by dates as requested by the regulatory agencies in their Request for Additional Information letter to the City.

Contract Cost
$148,000

Unique Problems/Solutions:
CDM Smith encountered a problem on the recent screening and dry weather sampling of all outfalls in the City. Approximately 10% of the City’s nearly 300 stormwater outfalls were unable to be located (i.e., buried, overgrown, inaccessible). CDM Smith worked with the City to prioritize the outfalls and develop a three year plan to locate them. The plan was submitted to CT DEEP and EPA.

CDM Smith is assisting the City of New Britain with services associated with complying with EPA’s Phase II Stormwater Rule for municipal separate storm sewer systems (MS4s). Services are integrated with developing and implementing a capacity, management, operation and maintenance (CMOM) program and include significant use/updating of the City’s sewer/stormwater geographic information system (GIS).

Dry Weather Outfall Screening and Sampling—CDM Smith organized and reviewed available outfall and drainage mapping from the City, along previous outfall inspection information. Next CDM Smith led two crews that located, screened, and sampled stormwater outfalls in the City on a fast-tracked program to meet an EPA deadline. The inspections were completed during dry weather with a standardized electronic form using an iPad. Pictures of each outfall were taken with the iPad, and the information was linked to the GIS. Field staff used field meters to test dry weather discharges for temperature, conductivity, and salinity; and field kits to test for the presence of chlorine, ammonia, and surfactants. Samples were collected and taken for laboratory testing for e. coli, mercury, nitrogen, and phosphorus.

Development of Stormwater Management Plan—We are currently assisting the City with the development of a Stormwater Management Plan in accordance with the new MS4 permit issued by Connecticut Department of Energy & Environmental Protection agency (CT DEEP). Development of the Stormwater Management Plan includes an assessment of the City’s staffing levels, management structure and equipment, as well as collection and review of existing data which will be used in developing the City’s plan to meet the new MS4 requirements.

Construction Stormwater Program Assistance—CDM Smith is currently assisting the City with the development of a Post-Construction Site Stormwater Run-off Program. To complete this task, CDM Smith is evaluating the City’s existing related ordinances, regulations, and post-construction site procedures and updating them with information required to meet MS4 requirements.

Total Maximum Daily Load (TMDL) Allocations—We are currently assisting the City with review of which waterbodies that the City outfalls discharge to have approved TMDLs. This task includes reviewing the list of TMDLs and the City’s impervious area to identify the location and the pollutant causing the impairment. It also includes mapping of outfalls that discharge to the receiving body, and reviewing the TMDLs requirements for control measures. The information will be used in the recommendations for prioritized outfalls.

Develop Illicit Discharge and Elimination (IDDE) Plan—CDM Smith is currently assisting the City with updating their IDDE Plan. The Plan will outline goals and milestones that the City will follow over the 5-year term of the new MS4 permit.

Best Management Practices (BMP) and Catch Basin Cleaning Plans—We are assisting the City with reviewing, and developing if necessary, a plan for the long-term operation and maintenance of stormwater BMPs and a catch basin inspection and cleaning program that complies with requirements of the new MS4 permit.