

CASE STUDY / ISABELLA COMBINED RELIEF SEWER

FLOOD MITIGATION STRATEGY CREATES PEACE OF MIND

When a 500-year storm event devastated the Village of Mount Prospect with widespread flooding and significant property damage, the Chicago suburb — with a history of flooding and other sewer challenges — needed a solution to address and mitigate future complications.



STUDY, DESIGN AND CONSTRUCTION SERVICES EXCEED EXPECTATIONS

Services for the Isabella combined relief sewer program more than doubled system capacity and prevented any further reports of excessive flooding or basement backups.

PROJECT STATS

CLIENT

Village of Mount Prospect

LOCATION

Mount Prospect, Illinois

COMPLETION DATE

December 2015

500

YEAR STORM EVENT

84

INCH COMBINED SEWER

25

YEAR LEVEL OF PROTECTION

\$9.5

MILLION CONSTRUCTION COST

CHALLENGE

In the early morning hours of July 23, 2011, an intense round of storms brought historic rainfall to the Village of Mount Prospect. Located 22 miles northwest of downtown Chicago, the Village experienced a record 7 inches of rain in a short three-hour period, later receiving over 8 inches within 24 hours. Classified as a 500-year storm event, the Village received widespread flooding and significant property damage.

During previous heavy rainfall, the area already had been prone to frequent flooding and basement surcharges and backups. To mitigate future flooding challenges, the Village required combined relief sewer improvements that would increase the capacity of the system from a 2-year level of service to a 25-year level.

SOLUTION

The first step in addressing improvements involved a comprehensive study utilizing data from residents of the Village to gather information and better assess local flooding and combined sewer complications. The team used findings to define the project's scope.

The Isabella combined relief sewer improvements project required over 17,000 linear feet of sewer ranging from 12 to 84 inches in diameter. In addition, approximately 15,000 linear feet of asphalt roadway, curb and gutter, driveway aprons and sidewalk needed to be removed and replaced. Due to the size and depth of the new sewer, there were numerous locations where the existing water main had to be relocated.

The team provided design and construction services for the Isabella combined relief sewer. Project design scope and deliverables included final plans, specifications, cost estimates, permitting, utility conflict resolution, soil testing and analysis, Clean Construction Demolition Debris certification (CCDD), and bidding assistance. Our team met with each resident who reported being affected by the flooding in 2011, and we conducted multiple public meetings to keep all residents informed.

Construction was performed in an area that was mixed residential and commercial/business. The project had impacts to existing restaurants, a bank, automotive maintenance businesses, a home improvement store and a business condo complex. Coordination with residents and

ON COVER: *Installation of 10-foot diameter manhole along Isabella Street.*



Installation of 84-inch combined sewer along Isabella Street.

commercial property owners was a top priority throughout the design phase and continued throughout the construction phase.

Construction phase services included full-time resident engineering as the liaison between the Village and the contractor, coordination with residents and production schedules, observation for compliance with contract documents, review of materials testing reports and shop drawings, and maintenance of a daily field book that documented crew counts, equipment, individuals on-site and daily quantities of work completed. Services also included

the review, recommendation and processing of pay requests and change orders.

During construction, we assisted the Village with maintenance of the project website, monthly newsletters to all property owners in the Isabella drainage basin and a weekly email blast with updates to subscribers in the Village.

RESULTS

The Isabella combined relief sewer project successfully improved the capacity of the system from a 2-year level of service to a 25-year level of service.

“After several years of performance monitoring and heavy rainfall events, we are thrilled to share we haven’t received any reports of excessive street flooding or basement backups,” says Sean Dorsey, the Village’s director of public works. “Working with the Burns & McDonnell team was a seamless experience and they exceeded our expectations.”



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