

CASE STUDY



PROJECT DETAILS

Project Name:

Waukesha Flood Mitigation

Location:

City of Waukesha

Project Owner:

City of Waukesha

General Contractor:

Mid City Corporation,
Wolf Paving Inc.

Product Manufacturer:

County Materials Corporation

Date:

2020

Key Products:

Precast Box Culverts,
Precast End Sections,
Reinforced Concrete Pipe

Precast Box Culverts Reduce Construction Schedules and Minimize Road Closures

Solutions: Ready-to-install precast box culverts reduce construction schedules and road closures, allow greatest flow capacity.

The City of Waukesha, Wisconsin faced severe cyclical flooding during rain events that caused costly damage to the city and its residents as standing water covered intersections, low-lying areas, and basements. To mitigate flood risk, city leaders met and reevaluated how storm water was managed in several areas of the city. It was determined that flood areas 1 and 2 required additional storm water management systems, and a plan was devised to install precast box culverts in the areas of greatest concern.

County Materials manufactured and supplied over 800 lineal feet of precast box culverts in sizes of 4'x6', 4'x8', and 4'x10', along with 16 precast end sections and reinforced concrete pipe in diameters ranging from 12" to 15". The project specified precast components for their time advantages over cast-in-place alternatives, while box culverts were indicated for their ability to provide greater flow capacity than round and elliptical pipe in this application. With the construction site being located on a main road that did not offer an ideal alternative route, traffic flow management was a critical consideration. To avoid extended full road closure, delivery of the ready-to-install precast concrete components was optimized. Coordination between County Materials and project leaders proved successful when the roadway was able to open to one lane traffic the next day, rather than remaining closed for the duration of construction.

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Prior to installation, the sites were assessed by the Wisconsin Department of Natural Resources and determined as stream drainage areas. This discovery altered the installation process by requiring the box culverts to be installed in a dry area with stream water pumped to their designated position, a method not possible with cast-in-place systems. Additional environmental protections were implemented with the use of vegetated riprap that protects the shore and the organisms that inhabit it both during installation and after.



By supplying readily available, ready-to-install precast components, County Materials supported project demands and helped project crews maintain schedule. Within two weeks, the new storm water management was installed, and roadways were opened to full capacity.



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