

Project featured in  
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**Trenchless**  
TECHNOLOGY.

# Rain for Rent Relieves Omaha's Flooding



Rain for Rent crews install the first FP-1050 42" Axial Flow floating pump into the newly constructed temporary CSO suction pit.



A section of 42 inch HDPE discharge line for pump station 2 is bolted in place. This line was fed by a FP-1050 capable of 68,500 gpm.

2011 was a record-breaking year for floods. As spring turned to summer snowmelt combined with seasonal rains inundated the Midwestern United States. Much of Omaha, Neb., was in danger of catastrophic flooding as water levels in the river lapped at record highs.

At the beginning of July, water levels along the Missouri River in Omaha climbed to 36 ft with flows reaching over 216,000 cu ft per second (cfs). Normal July flows are around 32,000 cfs.

Flooding and rain caused combined sewer outfall (CSO) levels to overwhelm the city's storm and sewer systems. CSO is dangerous and poses serious health and safety hazards. Residents and businesses were

threatened as streets flooded with sewage and rainwater and the building pressure launched manhole covers into the air.

Meanwhile the College World Series of Baseball — a key economic and tourism event for the city — was scheduled to begin at a newly constructed stadium. An emergency call was put in to Rain for Rent to help engineer a solution.

Rain for Rent's solution for Omaha's excess CSO was a two-station pumping project. In less than one week from the initial call, Rain for Rent designed and deployed the first pump station to handle 100,000 gallons per minute. The station used one 24"x30" Power Prime™ DV-600c, three 24" HD-600 and three

## DISCHARGE FLUME . . . . .



**576 MGD of CSO was bypassed and discharged from Omaha's storm sewer into a 700' long flume.**

## LEVY . . . . .

## STATION 2 . . . . .



**Four floating pumps were placed in the suction pit, enabling them to rise and fall with CSO levels.**

24" ES-600 pumps to extract water from a culvert in the storm sewer system. That CSO was then discharged to the river via a custom made 700-foot long flume lined with 40mm EPDM liner and K-rails. Installers and operators dubbed it "the big slip and slide."

This first pumping station was put to the test almost immediately after installation as a three-hour rain event pushed

CSO levels even higher. Rain for Rent's first pumping station handled the CSO and was applauded by city engineers.

At the second pumping station, a parking lot was demolished and converted into a large suction pit for CSO. This station used four new 42" FP-1050 floating pumps, three additional Power Prime™ 24"x30" DV-600c pumps and another 24"

HD-600 pump.

The high-efficiency, axial-flow FP-1050 is a self-contained floating pump station. This 42-in. pump meets Tier 3 emissions standards and moves up to 68,500 gpm of water and up to 27 ft of head. These pumps were floated in the culvert, allowing them to rise and fall with the variable levels of CSO contained in the suction pit. .

Together, the two pumping stations were able to pump a combined peak flow of 576 million gallons of CSO a day.

Thanks to the nationwide presence and coordination of trained and experienced pumping professionals, Rain for Rent was able to mobilize quickly in response to the emergency flood pumping needs throughout the United States.



## . . . . .STATION 1



**Constructed in under a week, the first station handled up to 100,000 GPM.**

## . . .TRAIN TRACKS



**Only 24 hours were given to bury 8 large HDPE discharge lines.**



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