

## CASE STUDY

# Captured Stormwater Recharges J.M. Pike Park Groundwater Modesto, CA

### OWNER

City of Modesto, CA

### ENGINEER

Woodard & Curran, San Diego, CA

### CONTRACTOR

Mozingo Construction, Oakdale, CA

### INSTALLATION DATE

Summer 2024

### PRODUCTS

120' (37 m) of 18" (450 mm) HP Storm  
1,300' (396 m) of 24" (600 mm) HP Storm  
4,020' (1,225 m) of 30" (750 mm) HP Storm  
2,980' (908 m) of 42" (1050 mm) HP Storm  
240' (73 m) of 48" (1200 mm) HP Storm  
2,140' (652 m) of 60" (1500 mm) HP Storm  
100' (30 m) of 24" (600 mm) N-12® ASTM  
220' (67 m) of 36" (900 mm) N-12 ASTM  
60' (18 m) of 60" (1500 mm) N-12 ASTM  
2,061 MC-7200 StormTech® Chambers  
Two BaySeparator® 3K units

### DESCRIPTION

The City of Modesto needed to keep 6.4 million gallons (24.2 million liters) of stormwater from flowing into the city's sanitary sewer system, which could not handle the volume. Modesto wanted to avoid the costs of replacing the sanitary trunk line and a wastewater treatment plant. Modesto decided to remove the cross section portion of the trunk lines and separate stormwater from wastewater. The city installed new stormwater trunk lines, which would also help eliminate localized flooding.

The new stormwater infrastructure is sized for a 100-year storm event and the water is conveyed by 10,800' (3,292 m) of HP Storm pipe, which is manufactured from polypropylene. The pipe ranged in diameters from 18"-60" (450-1500 mm) and was the first large-scale infrastructure project using HP Storm in Modesto.



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The stormwater is conveyed through the HP Storm to two BaySeparator 3K units, which capture trash, sediment and oil. The BaySeparators were placed on the southwest side and eastern edge of J.M. Pike Park, where the water is then stored in MC-7200 StormTech chambers. N-12 ASTM pipe was utilized for the StormTech manifolds and five StormTech Isolator® Rows were utilized to catch any other stormwater run-off.

The 19.6 acre-feet of stored stormwater infiltrates into the underlying soils within 48 hours to recharge the groundwater, which has experienced extended drought conditions. J.M. Pike Park, which is over 6 acres, was an older park in need of renovations and now has two soccer fields, two ball fields and a large play area.

HP Storm polypropylene pipe provides superior pipe stiffness, longer bells and spigots and a premium joint performance for a longer service life. The smooth interior wall offers additional strength and high flow capacity. HP Storm, available in diameters from 12"-60" (300-155 mm) pipe meets or exceeds the standards specified in ASTM F2881 and AASHTO M330 and the extended bell and spigot meets ASTM D3212. Polypropylene is resistant to the effects of chemicals, abrasion, hot soils and effluent.

StormTech chambers are designed to save valuable land, reduce flooding risks and protect water resources. The chambers provide a durable structural system and are designed in accordance with AASHTO LRFD Bridge Design specification for the HS-20 live loads. StormTech chambers are available in a variety of sizes to meet any project need and are injection molded for uniform wall thickness.

N-12 dual wall pipe, made using high-density polyethylene (HDPE), has a corrugated exterior and smooth interior wall that provide exceptional strength and hydraulics. The inert HDPE material is resistant to the effects of chemicals, abrasions and hot soils. N-12 is available in 4"-60" (100-1500 mm) diameters and in 20' (6 m) lengths. The inline bell design allows for pipe ends to be pushed together for easy installation. N-12 ASTM pipe meets the requirements of ASTM F2648, while the fittings conform to ASTM F2306.



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