

CASE STUDY

HP Storm Meets Buckeye's Expanding Infrastructure Needs

Buckeye, AZ

OWNER

City of Buckeye, AZ

ENGINEER

Ardurra Group Engineering, Phoenix, AZ

CONTRACTOR

Haydon, Phoenix, AZ

INSTALLATION DATE

August 2025

PRODUCTS

160' (49 m) of 18" (450 mm) HP Storm
200' (61 m) of 24" (600 mm) HP Storm
1,420' (433 m) of 30" (750 mm) HP Storm
740' (226 m) of 36" (900 mm) HP Storm

CHALLENGE

The City of Buckeye has been rapidly growing over the last decade. As commercial and residential development continue, the city's transportation capital improvement program has focused on widening the roads, decreasing congestion, while also planning for the stormwater needs.

As part of the critical infrastructure expansion, McDowell Road was required to extend from Jackrabbit Trail to the Tuthill Wash, which is a natural drainage channel. This infrastructure upgrade was designed to connect a major arterial street and to mitigate flooding during heavy rain events.

The stormwater conveyance was designed as a shallow burial application. Because no residential development was planned in the immediate corridor, there were no conflicting underground utilities, allowing for a more straightforward and efficient installation process.



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SOLUTION

Initially, reinforced concrete pipe (RCP) was specified for the road expansion. Haydon, the project's contractor, had installed Advanced Drainage Systems' (ADS) HP Storm polypropylene pipe previously and preferred to utilize the pipe.

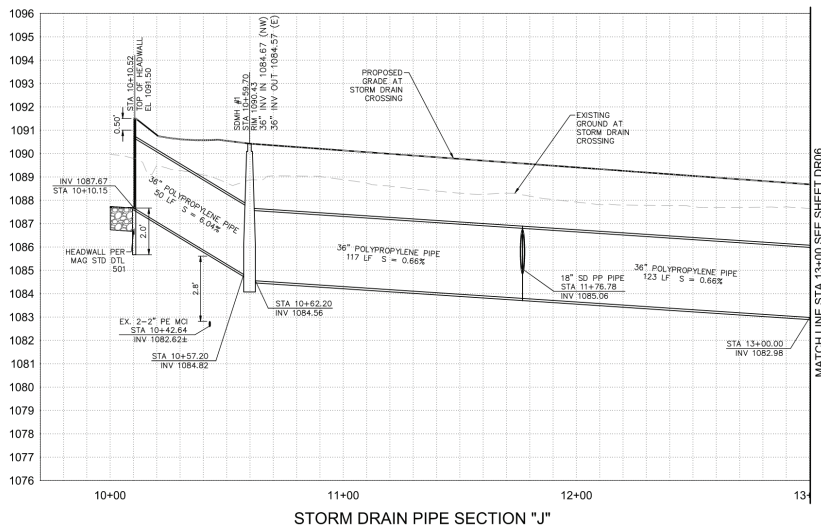
In April 2025, Buckeye updated its design manual to include polypropylene pipe, allowing HP Storm to meet specifications for right-of-way installations. At the same time, American Association of State Highway and Transportation Officials (AASHTO) revised its standards to permit as little as one foot of cover for the pipe diameters required on the McDowell Road project

Ardurra, the project engineer, and Haydon agreed the expansion would serve as an ideal pilot project to introduce polypropylene pipe into a municipal right-of-way application. Ardurra Engineering was able to successfully specify HP Storm on the project. The 18" (450 mm) HP Storm was used as laterals, while the 24"-36" (600-900 mm) pipe was used as a main conveyance to the wash.

The feedback from Haydon on the installation was very positive. The 20' (6 m) pipe lengths allowed for faster installation as ADS' logistical network of manufacturing facilities and its Phoenix distribution center made timely deliveries of materials. Its lightweight design improved jobsite safety, reduced heavy equipment needs and simplified handling. Overall, the project realized significant total cost savings compared to traditional RCP installation.

PRODUCT DESCRIPTIONS

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 pipe meets or exceeds the standards specified in ASTM F2881 and AASHTO M330 and the extended bell and spigot meets ASTM D3212. Polypropylene is an inert material and is resistant to the effects of chemicals, abrasion, hot soils and effluent. The lightweight product is easy to deliver and is readily available in convenient locations across North America to service local projects.



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