

SMART WATER & WASTE

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30 TOP

MUNICIPAL CASE STUDIES

EDITOR'S CHOICE - 30 CASE STUDIES ON
MUNICIPAL WATER, WASTEWATER, AND WASTE

Controlling the Stormwater Runoff at New South Carolina Interchange

Named Project of the Year for the Corrugated Plastic Pipe Association (CPPA) Division of the Plastics Pipe Institute, Inc. (PPI), it has won the award for the pipe manufacturer, Advanced Drainage Systems, Inc.

By Plastics Pipe Institute, Inc.



MORE THAN 41,000 feet of large diameter corrugated high-density polyethylene (HDPE) pipe has already been used for the new stormwater drainage system during the rebuilding of the third busiest interchange in South Carolina, here in the United States. The watertight pipe was selected for this design-build project in Greenville because it met AAS-HTO M294 requirements, has a long projected life, and could be delivered on a just-in-time basis to the job site. Named Project of the Year for the Corrugated Plastic Pipe Association (CPPA) Division of the Plastics Pipe Institute, Inc. (PPI), it won the award for the pipe manufacturer, Advanced Drainage Systems, Inc. (ADS), Hilliard, Ohio. PPI is the major

North American trade association representing all segments of the plastic pipe industry.

The South Carolina Department of Transportation (SCDOT) Interstate 85-385 Gateway Project under construction involves creating a new interchange within the general footprint of the current interchange by staging construction of the new lanes, ramps, and bridges while maintaining the flow of 190,000 vehicles a day. Ten new bridges including two flyovers, rehabilitation of two existing bridge structures, and modifications to the substructure of one existing bridge, are also part of this new interchange system. It is South Carolina's largest transportation infrastructure project in more

than 10 years. The new stormwater drainage system will be installed throughout the USD 231 million project, scheduled to be completed in 2020. AAS-

HTO M294 pipe, such as the ADS N-12® HDPE pipe, has been approved in South Carolina.

"Originally, the project

called for a reinforced concrete pipe - RCP - to be used in most of the storm drainage, while HDPE was only considered for a small portion of the project," explained Daniel Currence, P. E. director of engineering for the Corrugated Plastic Pipe Division of PPI. "A decision was made, however, to move to HDPE for the vast majority of the job, after the contractor realized that it could be delivered on time and with high quality. This change allowed the contractor to get the pipe they needed on a just-in-time basis to the exact spot where it was needed. The pipe has watertight bells and spigots which are extremely easy to connect. The favorable weight of the pipe makes it very efficient to be installed, about twice as fast as RCP, which lowered the total installed cost. These benefits added up to reducing the cost of the stormwater system."

The HDPE pipe ranging in diameters from 12 to 48 inch-



**PROJECT FILE**

Location: South Carolina, USA

Service Provider: Plastics Pipe Institute, Inc. (PPI), Advanced Drainage Systems, Inc.

Products/Technology Involved: HDPE Pipes

This shift toward using recycled content,” he said, “presents an opportunity for design engineers and public utility agencies that are seeking to reduce their overall environmental footprint associated with storm drainage projects.”

The Projects of the Year program is held annually by PPI to recognize the use of plastic pipe in exceptional applications for all of PPI’s five divisions. Submissions are reviewed, evaluated and voted upon by PPI members.

The Plastics Pipe Institute, Inc. (PPI) is the major North American trade association representing all segments of the plastic pipe industry and is dedicated to promoting plastic as the materials of choice for pipe and conduit applications. PPI is the premier technical, engineering and industry knowledge resource publishing data for use in the development and design of plastic pipe and conduit systems. PPI collaborates with industry organizations that set standards for manufacturing practices and installation methods.

es usually comes in 20-foot lengths from the plant in Charlotte, North Carolina or other ADS plants in the region but some custom 13-foot lengths were made to meet the contractor’s needs.

Currence elaborated on the properties of the pipe, “The HDPE material will not corrode, rust or degrade due to biological attack so the pipe resists bio-clogging and will be able to maintain high and con-

sistent flow capacities over the service life of a system. And HDPE pipe has a very favorable strength-to-weight ratio.

“This plastic pipe system is a sustainable and environmentally responsible choice that will serve generations to come. HDPE pipe is strong, durable, light-weight, flexible and ecologically friendly during manufacturing because it requires significantly less energy to fabricate, transport and install

than metal or concrete pipe. With superior resistance to corrosion and abrasion, plastic piping systems also supply long service life and excellent joint performance - all adding up to exceptional value.”

He said that some PPI members involved in the manufacture of pipe used in stormwater drainage systems now also use post-consumer recycled plastics in some products. Studies have shown that cor-

rugated high-density polyethylene (HDPE) pipe manufactured with recycled materials performs the same as a pipe made from all virgin HDPE resin.

“North American standard specification bodies,” Currence explained, “have expanded existing corrugated HDPE pipe standards to include recycled resins, permitting the use of recycled HDPE drainage pipe within the public right-of-way.



Receiving the Project of the Year Award for the Corrugated Plastic Pipe Division from PPI President Tony Radoszewski (right) and the Division’s Director of Engineering, Daniel Currence (left) is Greg Bohn, Director of National Engineering and Product Development for ADS.