



NEW ILLINOIS TOLLWAY ELECTRONICS AND LIGHTING SYSTEMS LINKED UNDERGROUND

*Million Plus Feet of HDPE Conduit Used;
 Project Wins Industry Acclaim*

IRVING, Texas - The Illinois State Toll Highway Authority embarked upon a \$12 billion capital program in 2012 to provide northeastern Illinois with a state-of-the-art transportation system designed to relieve congestion, improve mobility and reduce pollution across the Midwest. To link the new electronics and power systems, more than a million feet of high-density polyethylene (HDPE) conduit and CIC - Cable in Conduit - was used to protect fiber optics and power cables for the Intelligent Transportation System (ITS) and highway lighting. Among other benefits, now drivers are receiving roadway information and traffic conditions in real time.

Named Project of the Year for the Power and Communications Division of the Plastics Pipe Institute, Inc. (PPI), it won the honor for the conduit manufacturer and PPI member company, Blue Diamond Industries, LLC (Lexington, KY). The award was presented to Blue Diamond at the association's annual meeting, which was held in May 2018 at the Coeur d' Alene Resort in Idaho. PPI is the major North American trade association representing all segments of the plastic pipe industry.

According to PPI, the use of HDPE conduit and CIC can reduce costs, speed installation and provide a long-life protective housing for

electrical power and telecommunications cables.

The United States Department of Transportation states that ITS improves transportation safety and mobility and enhances American productivity through the integration of advanced communications technologies into the transportation infrastructure. Intelligent Transportation Systems encompass a broad range of wireless and wire line communications-based information and electronics technologies.



Northern Illinois is one of the largest inland ports in the nation, and the Illinois Tollway system is the primary route that carries more than 270 million tons of freight annually. The roadway rebuilding and expansion program consisted of reconstructing three existing major tollways, repair and preservation of an additional two tollways, and the "Elgin-O'Hare Expressway", a green-field interstate connecting northwest Illinois to O'Hare International Airport.

The work, including ITS, will alleviate congestion in the Chicago area that costs commuters \$4 to \$7 billion every year. The Jane Addams Memorial Tollway (I-90)



rebuilding and widening is expected to save drivers 27 minutes on the commute from Elgin to the Kennedy Expressway. The improved roadway accommodates as many as 83,000 vehicles a day and will save drivers \$440 million annually due to reduced congestion and delays.

All of the Tollway systems include ITS technology. Installation of dynamic messaging, closed circuit cameras, traffic counters, and automatic tolling enhances safety and reduces delays resulting in considerable savings for commuters. Amber Alerts, first responder response times, weather event warning and potential evacuation scenarios enhance safety and security.

ERM (Electrical Resource Management), a member of The Will Group Company (Wheaton, IL) and a registered DBE (Disadvantaged Business Enterprise) supplied the gantry systems and lighting poles for the new LED highway lighting along with supplying portions of the HDPE conduit manufactured by Blue Diamond Industries.



"We live in northern Illinois and are extremely proud to be able to participate in what is

arguably the most advanced piece of interstate highways in the United States", commented Steve Davis, founder of The Will Group.

On several of the projects, 12 distinctly colored 1-1/4 inch fiber optic and two colored 3-inch power conduits were laid along the right-of-ways. The conduits serve the cameras and tolling and provide for future broadband along the tollway right-of-ways. The extra conduits provide the flexibility to add smart features as they become available in years to come.

HDPE conduit was chosen because of its long available lengths with no joints, ensuring a water tight secure installation. Fiber cable can be easily installed in empty conduits for future expansion.

Electrical contracting firm Hecker and Company (Wheeling, IL) Vice President Dan Burke stated, "HDPE conduit is the logical choice for this type of installation along the right-of-way because of its long lengths and toughness. The Blue Diamond conduit exceeded project specification and timeline requirements for the projects."

"Open road tolling is one of the most popular changes on our roadways," stated Lance MacNevin, P. Eng., director of engineering for the Power and Communications Division of PPI. "The goal is to eliminate toll booths which open up the flow of traffic. This type of system, as well as all the other ITS components, requires fiber optic cables and power lines that must be installed properly with a high degree of cost effectiveness and be able to be protected for many years. HDPE conduit and CIC both have the properties and the ability to provide a solution for both goals.

"HDPE conduit is the preferred material to house and protect electrical power and telecommunications cables within. It offers



unmatched corrosion and chemical resistance, is flexible and durable, and is available in long coil lengths to reduce joints and installation time. HDPE conduit is available in a variety of sizes, colors, dimensions and lengths."

Typical applications include power utilities, telecommunications, CATV, SCADA, FTTH, ITS highway lighting, and other underground utilities. Premise (Riser and Plenum) conduit has specific characteristics and flame retardant ratings for use as nonmetallic raceways in buildings.

HDPE conduit can be installed using methods such as Horizontal Directional Drilling (HDD), plowing and laying in open trenches.



Tony Radoszewski, CAE, president of PPI commented, "These enormous infrastructure projects are much needed and allow the United States to compete on an international basis, both technically with 'smart highways', and hard assets such as the interstate

transportation systems. We're proud that one of our member companies, Blue Diamond, played a part in this project and is well deserving of the Project of the Year honor."



George Zagorski (center) of Blue Diamond Industries accepts the PPI Power & Communications Division Project of the Year Award from Lance MacNevin, P.Eng. (left), director of engineering for the division and PPI President Tony Radoszewski, CAE.

The Projects of the Year program is held annually by PPI to recognize the use of plastic pipe in exceptional applications. Submissions are reviewed, evaluated and voted upon by PPI members. For additional information, go to the PPI website: www.plasticpipe.org.

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About PPI:

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. Additionally, PPI collaborates with industry organizations that set standards for manufacturing practices and installation methods.