

Making room

Illinois Tollway's complex lane-widening project earns No. 1 spot



**North/Central Tri-State Tollway
(I-94/I-294) Rebuild and Widen
Project**

Cook and Lake counties, Ill.

Cost: \$1.3 billion

Length: 45 miles

Designers: MACTEC Engineering & Consulting, Bowman Barrett & Associates, Strand & Associates, Patrick Engineering, AECOM, Parsons Transportation, TranSystems, HNTB Corp., McDonough & Associates, Ciorba Group., Huff & Huff

Contractors: F.H. Paschen, S.N. Nielsen Inc., Plote Construction Inc., Sjostrom and Sons Inc., Kenny Construction Co., Walsh Construction Co., Dunnet Bay Construction Co., Lorig Construction Co.

Owner: Illinois Tollway

Rain clouds hundreds of miles away from Chicago may want to refrain just so they can give their drops the experience.

The North/Central Tri-State Tollway (I-94/I-294) Rebuild and Widen Project is treating the storm water like royalty behind a first-of-its-kind bioswale demonstration project aimed at filtering suspended solids, trapping sediments and removing pollutants from anything that drains off a 17-acre stretch of the titanic 45-mile project. Working with the Forest Preserve District of Cook County and the University of Illinois, the Illinois Tollway has pressed a gigantic green thumb along the current work zone. The bioswale project calls for water-quality and vegetative monitoring to be conducted before, during and after construction is complete. The specific purpose is to improve water quality adjacent to the eight-lane highway, and the

aftereffects will help preserve the Massasagua rattlesnake, a state endangered species found along the Des Plaines River.

“[The Forest Preserve] had some concerns about water quality related to the storm water coming off of this site,” Paul Kovacs, chief engineer with the Illinois Tollway, told *ROADS & BRIDGES*. “This six-mile bioswale will monitor the storm water coming from the project.”

Wetlands preservation, congestion relief, work-zone management and complex interchange construction are the key pieces rolled into this year's No. 1 project on *ROADS & BRIDGES'* Top 10 Roads list. It is the second time in four years the Illinois Tollway has paved a way to the top spot. In 2006, the I-355 extension, an older sibling to the North/Central Tri-State job, took the throne. Both projects are the offspring of the Tollway's \$6.3 billion

Congestion-Relief Program.

“At the beginning of the program we had some glamorous-type jobs,” said Kovacs. “What we got this award for was for the hard-work portion of the program.”

When all is complete, the I-294/I-94 corridor should be easy work for area commuters. Most areas will have four lanes of service from Indiana to Wisconsin.

“We are planning on getting 10-20 years of congestion relief out of that,” said Kovacs. “We can expand more than four lanes in the future, but it would require additional right-of-way purchases.”

Workers are dealing with a tight situation as the project enters the final phases (at press time the project was in the middle of the second of three stages) of construction, all in an effort to maintain three open lanes of traffic. Traffic has been shifted

into a counterflow configuration with express and local lanes. Shifting one lane of traffic onto the other side of the road allows the Tollway to preserve the original lane count while also reducing the impact of construction on the motorists, which number 154,000 daily. The layout gives prime contractor Plote Construction just enough room to fit an excavator or a mobile crushing machine in a particular segment.

Every chunk of the existing pavement, asphalt or concrete, is being used as sub-base for the new road. Through August, the project has recycled over a million tons of concrete and 795,000 tons of asphalt.

The project calls for approximately 1.4 million sq yd of new concrete. The 27-in. cross section consists of a 12-in. aggregate subgrade, a 3-in.

stabilized sub-base made of asphalt and 12 in. of jointed portland cement concrete (PCC).

"We are using a pretty standard 4.9 [number of bags of PCC per cubic yard] mix for all of our pavement out here with an air-entrainment mixture," Melanie Rowan, project manager for Plote Construction, told *ROADS & BRIDGES*. "Our barrier wall is made up of a 5.2 bag of superstructure mix."

Plote has been achieving its goal of 4,000 psi in about three days and also is applying variable-width tining at a 10° skew. Air and slump tests are being conducted on every third truck for the mainline paving and every truck for bridge work. Plote is using its own batch plant located at I-294 and Golf Road.

"We have great control over this mix," said Rowan. "We are not hav-

ing to go through a supplier so it is definitely a great benefit for us."

The Illinois Tollway also has taken command of complex interchange and bridge work throughout the project. The agency coordinated bridge reconstruction by staggering the work schedules en route to providing alternate routes for local drivers. Engineered solutions also played a major role. Rather than simply widen some spans the Tollway elected to reconstruct and lengthen them to accommodate expansion in the future.

Interchange work turned the most complicated at Touhy Avenue and Dempster Street. The back-to-back interchanges are only 2½ miles apart and are the most heavily traveled in the entire system. The Tollway once again took a staggered approach to help minimize the impact. 

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