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AERIAL MAPPING KICKS OFF FINAL DESIGN WORK ON SCUDDER FALLS BRIDGE REPLACEMENT PROJECT

NEW HOPE, PA – Planning and design work for the Scudder Falls Bridge Replacement Project is currently underway with field visits, survey control data collection and stakeouts of ground boring locations for future noise walls and pier abutments, the Delaware River Joint Toll Bridge Commission announced today.

A March 11 “notice to proceed” was issued to the project’s final design consultant – Michael Baker, Jr. Inc., a subsidiary of Michael Baker International. Since then, the firm and its various consultants have begun setting in place the basic building blocks to design the multi-faceted project consisting of a new wider bridge, reconfigured or reconstructed adjacent intersections, and approach roadway improvements.

The core element of this preparatory work has involved a process call low-altitude mapping and photogrammetry (LAMP). The process at Scudder Falls involved low-altitude flyovers of the 4.4-mile project area by a fixed-wing aircraft outfitted with a high-resolution mapping camera specifically designed to eliminate vibration and tilt. Survey crews are then dispatched to various Global Positioning System (GPS) coordinates to gather altitudinal and other topographical information. These locations serve as control points for making detailed three-dimensional project-area images.

Photogrammetry is often used by transportation agencies for planning and designing large projects. The process enables surveying and mapping to be completed in shorter timeframes, at reduced costs and more safely. The resulting product also provides sharper images, more-accurate data, and greater detail than conventional aerial photography and ground surveying of the past.

GPS-oriented data collection continues to take place in the field. Survey crews are locating photo-control points along I-95, on nearby local streets, and on the bridge. The work has been limited to public right of ways and is not impacting private properties.

Other early-stage work has involved the staking out of boring locations for proposed noise wall and pier abutment locations within the project area. Meanwhile, design-team engineers have been making site visits to gain a fuller sense of the project area and to locate structural boring and noise wall locations.

Final design work for the project is expected to take 18 months to complete. The Commission would then move to put the project's construction out to bid. It's currently anticipated that full construction activities will get underway in early 2017. The project is expected to take three to four years to complete. More precise construction start and end dates will be established toward the end of the final design.

The project involves a heavily commuted 4.4-mile portion of the I-95 corridor extending from the Route 332/Yardley-Newtown Road exit in Bucks County, PA. and the Bear Tavern Road/Route 579 exit in Mercer County, N.J. The congestion-prone highway segment is a choke point for job-commuter traffic between Bucks County, PA and Central Jersey.

The nearly 55-year-old bridge and nearby interchanges are classified as functionally obsolete. To address recurring traffic safety and capacity problems at the bridge, its adjoining interchanges and approach roadways, the Commission is pursuing a comprehensive project for the highway segment. Project elements include:

- Replace the existing four-lane Scudder Falls Bridge (SFB) over the Delaware River with a twin-span structure carrying six lanes of through traffic (three in each direction), two auxiliary northbound lanes for entry/exit travel, and one auxiliary southbound lane for entry/exit travel.
- Completely overhaul the accident-prone Route 29/175 interchange on the New Jersey side.
- Reconfigure the Taylorsville Road interchange in Lower Makefield, PA. to improve the safety and efficiency of the interchange.
- Make drainage upgrades and other improvements along the approach highway between the Route 29/175 interchange and Bear Tavern Road in New Jersey.
- Inside widening of the Pennsylvania approach highway between the Route 332 exit and the bridge by adding an additional lane and full shoulders in each direction.
- Provide a bicycle/pedestrian walkway alongside the main river bridge connecting the recreational canal paths on both sides of the river.
- Construct full inside and outside shoulders on both replacement bridge spans, a current highway standard requirement. (The bridge's inside shoulders will be sized to allow for future bus rapid transit service.)
- Constructing an all-electronic toll (AET) collection system in the southbound direction, consisting of high-speed E-ZPass tag readers and video cameras to identify license plates for purposes of collecting tolls by mail from motorists who do not have E-ZPass. Such license plate tolling – with an administrative fee to cover the additional costs of non-E-Pass customers – is increasingly being used in other states and countries.
- Installing noise-abatement walls along the approach roadways leading to and from the bridge; areas eligible for noise-abatement have been designated in accordance with enhanced standards promulgated by the FHWA and used by state departments of transportation.

The project's program cost – a figure that includes construction, design, construction management, inspections, and all other related costs – is estimated at about \$327.5 million in the Commission's 2015 capital budget.

Background and Project Need

The existing bridge was designed and constructed in the late 1950s and was not intended to carry today's traffic volumes. The bridge's opening was delayed until June 1961 due to a delay in the construction of approach roadways. The bridge carried 1,583,595 vehicles during its first full year of service in 1962; in 2014, it carried 19,451,256 vehicles, or a daily average of 58,400.

Its structural design is of the same non-redundant, pin-and-hanger-connected two-girder type as the I-95/Mianus River Bridge that collapsed in Connecticut in 1983. The Commission took steps in the early 1990s to prevent a Mianus-type collapse, but the redundancy measures did not – and could not – add life to the bridge's road deck, which now has multiple pothole patches and other surface deterioration.

A rehabilitation of the bridge with a replacement of the current road deck would cost nearly \$80 million while causing crippling traffic delays and congestion because one or two lanes would need to be closed for extended periods. Additionally, such work would not address any of the numerous safety, traffic capacity and operational deficiencies in the current Scudder Falls highway corridor. Rehabilitation also would not sufficiently address the current bridge's previous loading history and non-redundancy.

According to volumes of environmental documentation the Commission compiled as part of the federal NEPA process, the project is being pursued for the following reasons:

- The current bridge is functionally obsolete and needs to be replaced to alleviate recurring current peak-period and emergency-incident traffic congestion and projected future traffic.
- Numerous commuter safety and operational upgrades are needed at the bridge and adjoining highway segments and interchanges in the two states; the SFB replacement project will improve mobility and provide a safe and reliable river crossing for vehicles, including interstate commercial shipments and regional emergency services such as ambulances and local fire squads.
- The bridge does not meet current FHWA or state standards.
- The geometry of the bridge, approach highways and interchanges do not meet current design standards.
- More than 100 accidents a year are recorded in the project area -- some have been fatal.
- The bridge lacks shoulders for breakdowns and emergencies as well as acceleration and deceleration lanes to carry traffic entering or exiting the highway at two interchanges that constructed in close proximity to the bridge decades ago. (Shoulders and proper auxiliary lanes are required elements for interstates under current federal design criteria).

About the Commission

The Delaware River Joint Toll Bridge Commission was formed by the Commonwealth of Pennsylvania and the State of New Jersey in 1934. It operates seven toll bridges and 13 toll-supported bridges, two of which are pedestrian-only spans. The Commission is a self-supporting public-service agency that receives neither federal nor state tax dollars to finance its projects or operations. Funding for the operations, maintenance and upkeep of its bridges and related transportation facilities is solely derived from revenues collected at its toll bridges. The Commission's jurisdiction extends along the Delaware River from the Philadelphia-Bucks County line north to the New Jersey/New York border. The bridges carried more than 138.2 million cars and commercial vehicles in 2014. For more information about the Commission and its various initiatives to deliver safer and more convenient bridge travel for its customers, please see: www.drjtbc.org.