



Turkey Hill Road overpass at  
MP 23.1 in Deptford Township

## Advanced Structures: Replacing Overpasses to Advance Work and Meet Community Needs

Ahead of construction to expand the Turnpike Mainline from a four-lane highway to a six-lane highway as part of the New Jersey Turnpike Authority's Interchanges 1 to 4 Capacity Enhancements Program, work will occur to replace 10 critical overpass structures in the southern portion of the Program.

Completing work to widen these select structures ahead of the Mainline expansion allows the Mainline work to move more efficiently while providing benefits to the entire Corridor. Many of the structures being replaced are original to the 1950s, with abutments next to the roadway's shoulders, leaving little room to widen the Mainline.

In some instances, advancing the structures early addresses potential conflicts and design challenges ahead of the Mainline widening, such as is the case in Woolwich Township, where Franklinville Road and Swedesboro-Monroeville Road cross the Turnpike in a "V" formation just 1/10 of a mile apart from one another.

The overpasses identified as advanced structures were determined and prioritized based on anticipated impacts and current conditions of the structures. In addition to Franklinville Road (CR 538) at milepost 11.50 and Swedesboro-Monroeville Road (CR 694) at milepost 11.38, the advanced structures identified in the southern portion of the Program include:

- Penns Grove Auburn Road (CR 641) at MP 4.9 in Carneys Point/ Oldmans Township, Salem County
- Stumpy Lane at MP 5.7 in Oldmans Township, Salem County
- Rainey Road at MP 9.1 in Woolwich Township, Gloucester County
- Mantua Road (CR 678) at MP 18.0 in East Greenwich Township, Gloucester County
- Elm Ave (CR 652) at MP 20.5 in Woodbury Heights Borough, Gloucester County
- North Delsea Drive (NJ Route 47) at MP 22.8 in Deptford Township, Gloucester County
- Turkey Hill Road (CR 646) at MP 23.1 in Deptford Township, Gloucester County
- Almonesson Road (CR 621) at MP 24.0 in Deptford Township, Gloucester County

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The new structures will be lengthened to allow for the expansion of the Mainline and will feature increased vertical clearance to meet current design standards.





## Q&A With Deputy Project Manager and Structures Lead Prayag Sayani, Ph.D., P.E.

**Q: How has your career with the NJTA helped define your current role?**

**A:** Since joining the New Jersey Turnpike Authority (NJTA) in 2018, I've led several complex structural projects across the region. While overseeing large-scale projects like the Interchanges 1 to 4 Capacity Enhancements Program, I've gained invaluable hands-on experience managing multidisciplinary design teams and coordinating with various stakeholders. NJTA has also enabled me to establish and implement design standards and guidelines, ensuring project consistency across our capital programs, which has been critical in my role today.

**Q: What are your key areas of responsibilities as Deputy Project Manager – Structures for the 1 to 4 Program?**

**A:** My responsibilities include managing consultant design teams and overseeing the development of complex bridge designs. A key part of my role is ensuring that all structural designs align with the Authority's procedures, standards and guidelines, ensuring consistency across project deliverables. I'm also responsible for coordinating with various stakeholders to maintain project timelines and budgets, conducting field evaluations and leading efforts in structural rehabilitation and corridor planning. Additionally, I manage the design and execution of repairs, particularly through programs like the Annual Maintenance Reserve Program for Turnpike Bridge Deck Repairs & Resurfacing.

**Q: What about this program inspires you the most?**

**A:** The Program's scale and complexity, and the potential to significantly transform the infrastructure and connectivity in South Jersey inspires me. Being part of a project that tackles complex bridge design and rehabilitation challenges, while driving regional growth, is highly motivating. This program exemplifies how thoughtful planning and cutting-edge engineering can improve safety, reduce congestion and provide long-term benefits to communities.

The Program presents a unique opportunity to address engineering challenges while contributing to the region's long-term growth. Knowing that our work will directly benefit the communities for decades to come makes this project incredibly fulfilling.

**Q: How will the expansion benefit South Jersey residents and the region as a whole?**

**A:** The expansion will significantly improve traffic flow and safety at key interchanges, benefiting South Jersey residents by reducing commute times and easing congestion. Beyond these immediate benefits, the enhanced infrastructure will stimulate economic growth by making the region more accessible for local businesses and industries. Improved transportation corridors support the movement of goods and people, making South Jersey a more attractive location for commercial activity, ultimately benefiting not only the region but the entire state and beyond.

## Advancing Mobility, Improving Safety and Saving Time

Since the 1950s, when the New Jersey Turnpike was initially constructed, highway engineering and design standards have improved significantly. The Program is updating roadways to meet current design standards, which will improve safety for passenger vehicles and truck traffic on the Turnpike.

In addition to adding lanes for increased capacity and maneuverability, the Program will undertake improvements to the geometry at Interchanges. This includes adjusting the turning radius at on- and off-ramps, which helps avoid rollovers, reduce crash rates and increase sight distance.

While a more reliable, safer and less congested roadway is certainly the goal of the Program, with these improvements will come the benefit of a reduction in the time spent in traffic and congested conditions for the traveling public.

While exact conditions will vary, overall, a driver traveling north or south between Interchanges 1 and 4 could see a time savings of over 23 minutes one way during congested condition hours on an average day. For drivers traveling this length of the Turnpike five days a week, this equates to a savings of 115 minutes per week and 5,980 minutes – or nearly 100 hours – a year.

## TYLin Selected to Lead Section 8 Final Design

TYLin, a global engineering and advisory firm that has provided quality roadway engineering design services in New Jersey for over 30 years, is leading Final Design for Section 8, from milepost 31.3 to 36.5 (which includes Interchange 4).

The firm has extensive experience working with key agencies such as the New Jersey Turnpike Authority (NJTA), New Jersey Department of Transportation (NJDOT) and various counties. This includes design of highway corridors, expressways, interchanges, ADA compliant intersections and grade separations. TYLin's scope of work includes:

- Preliminary design review and optimization
- Traffic signal design
- Maintenance of traffic flow and safety during construction
- Structural design and upgrades, including four full bridge replacements and culvert improvements
- Roadway design
- Utility coordination
- Drainage design
- Environmental assessments and stormwater management
- Geotechnical engineering

Aerial image of Interchange 4 in Mount Laurel Township



### Innovations for Efficiency, Safety and Accessibility

To deliver an improved, safer travel experience, TYLin is incorporating several innovations into the design such as:

- Use of Hybrid Steel Structures to improve vertical clearance on structures
- Consideration of Semi-integral Abutments to create jointless bridges to improve service life and reduce maintenance needs
- Temporary Construction Staging to minimize disruptions to motorists and reduce construction duration
- Improving staging and alignment shift on Rt. 70 to reduce impact on adjacent properties, businesses and community
- Providing 15' wide shared use lanes and sidewalks on Rt. 70 to accommodate pedestrians/bicyclists
- Providing sidewalks, shoulders and striped median on Church Road to improve safety on Church Road and Springdale Rd. intersection



## Fast Facts

The NJTA is committed to reaching its 25% Small Business Enterprise (SBE) goal and 3% Disabled Veteran Owned Business Enterprise (DVBE) goal to ensure small and veteran-owned businesses play a role in the Program.



The NJTA contributes approximately half a billion dollars a year for public transit purposes to the State of New Jersey.

The NJTA works in close partnership with numerous state and federal agencies to complete the Program, including NJDOT, NJDEP, USACE, USCG and DRBA.



The NJTA is using a staged construction approach to avoid detours, minimize disruption and ensure smooth traffic flow throughout the duration of the Program.



### Working with Municipalities

The NJTA is committed to public outreach and community engagement as it moves forward with the Interchanges 1 to 4 Capacity Enhancements Program.

Since 2021, the Program Team has met regularly with representatives from the 18 municipalities along this section of the NJ Turnpike, with the goal of being transparent about the Program and its progression. These meetings also allow municipalities to provide the Program Team with information and updates on proposed development projects and other anticipated activities within their communities, with the goal of coordinating activities to mitigate impacts on local residents.

Additionally, the NJTA maintains regular contact with police, fire and emergency management officials, representatives from Burlington, Camden, Gloucester and Salem counties and elected officials at the state and federal levels representing the Legislative and Congressional districts involved.

In the past three years, the Program Team has completed more than 100 meetings with stakeholders to provide updates and answer questions about the Program and

its design. The NJTA also held the first Public Information Center in Lawnside earlier this year. These meetings provide valuable feedback that can be incorporated in the Final Design.

As the Program advances and construction work begins in the coming years, the NJTA will continue meeting with local, county, state and federal officials to keep them abreast of Program developments. Additionally, the NJTA will hold Public Information Centers, Public Hearings and Public Forums to share information about the Program with members of the public. Public Information Centers are expected to occur in late summer and early fall of this year.



The Program Team presenting at the recent Public Information Center in Lawnside.

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While bridge replacement is required for Mainline expansion, it will also help to address local concerns stemming from the significant increase in regional development. The new replacement structures will be built to the applicable modern design standards for lane and shoulder widths, stopping sight distance and vertical clearance. For example, the Mantua Road area in East Greenwich Township has seen extensive residential development over the years and the lack of a sidewalk on the bridge for pedestrian traffic was a concern for local officials.

In initial meetings with East Greenwich, the municipality requested a sidewalk for pedestrian and bike traffic be incorporated into plans for the south side of the structure. After further coordination with the municipality and the developer of Creekside Crossing – a 108-townhome development adjacent to the north side of the structure – the Program Team incorporated a second sidewalk on the north side, adjusting infrastructure plans in response to the community's needs.

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