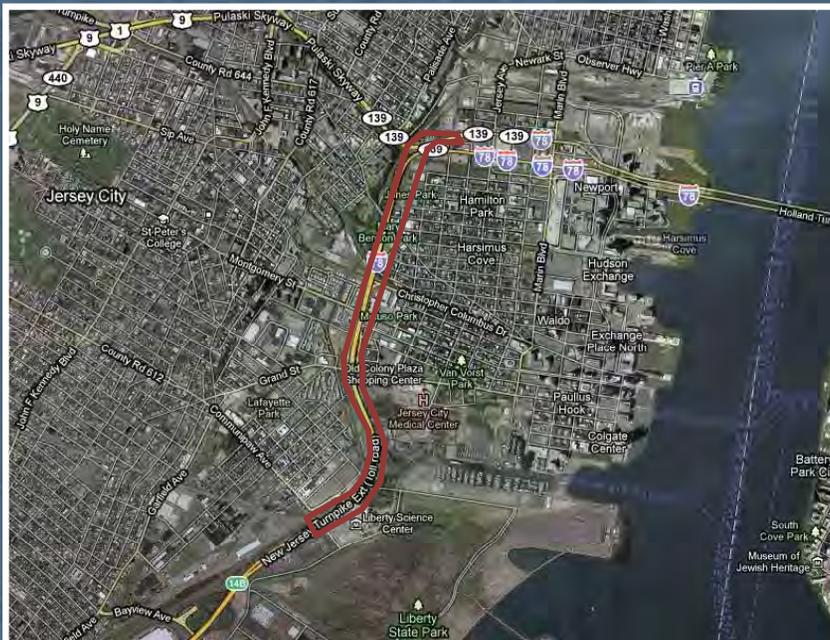


# New Jersey Turnpike Authority

Contract No. T100.125

## Bridge Deck Reconstruction and Miscellaneous Improvements

Newark Bay-Hudson County Extension, Milepost N6.0 to N8.20 Westbound Roadway



# Project Team

*Project Owner:*



**New Jersey Turnpike Authority (NJTA)**

Project Liaison: Ms. Jean H. Laird, P.E.

Media Relations Coordinator: Mr. Thomas C. Feeney

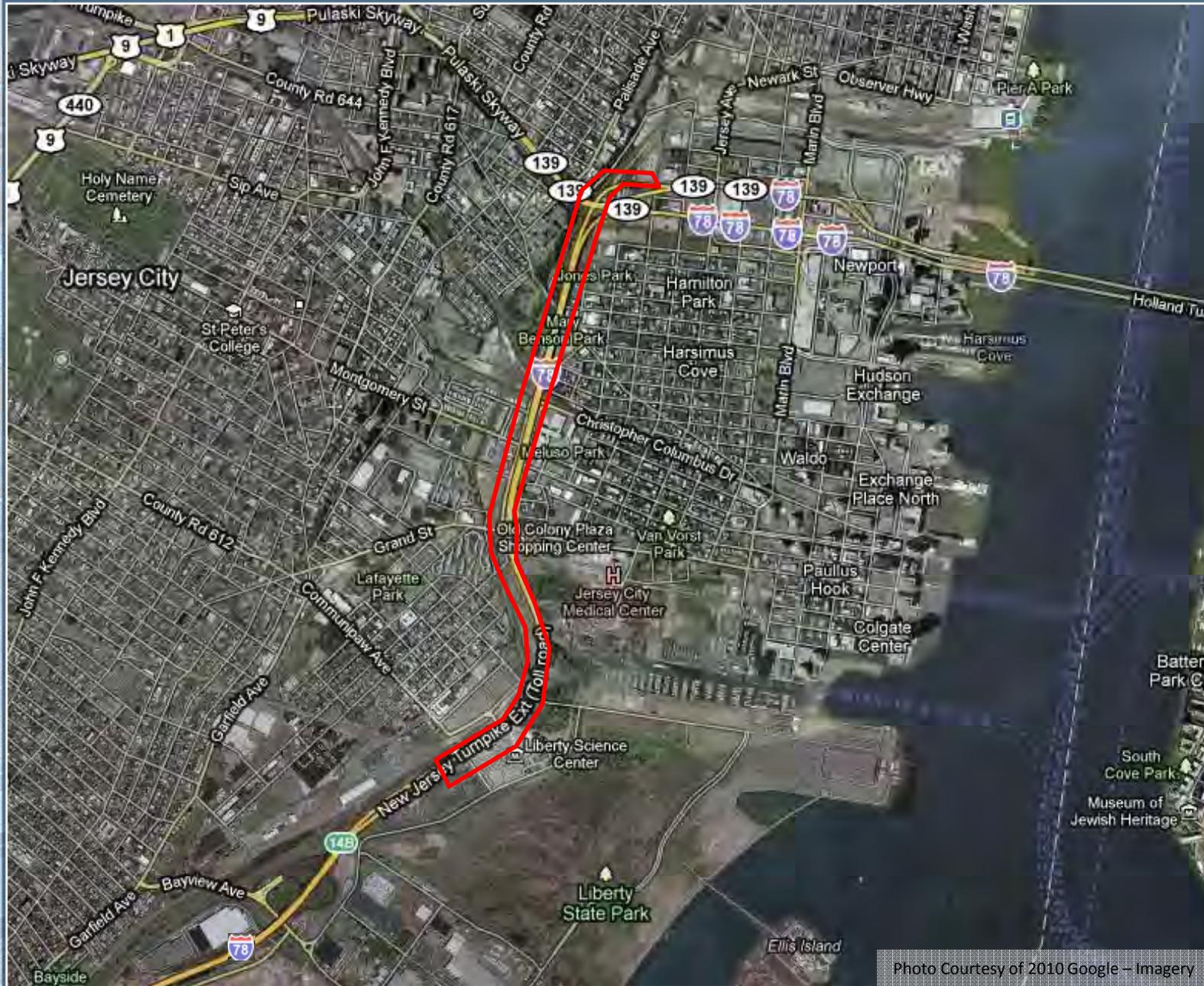
*Project Designer:*



**Greenman-Pedersen, Inc. (GPI)**

Project Manager: Mr. Gregory P. Johnson, P.E.

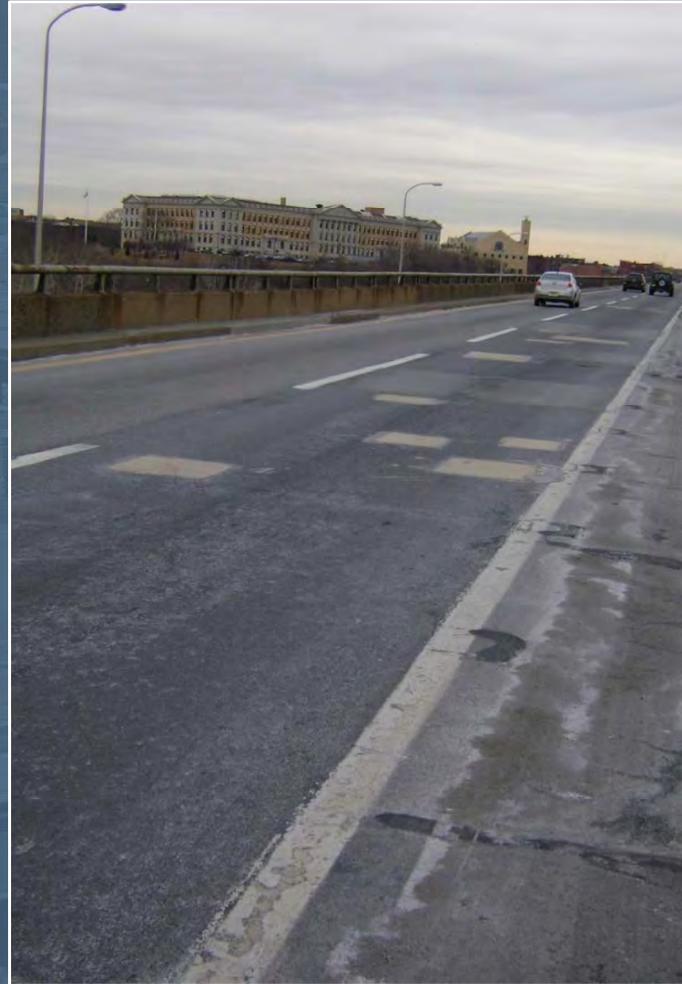
# Project Location



- Along the NJ Turnpike Newark Bay – Hudson County Extension (I-78).
- Westbound direction (outbound traffic from NYC).
- From Intersection of Jersey Avenue and 14<sup>th</sup> Street to Interchange 14C.
- Project length = 2.2 miles.

Photo Courtesy of 2010 Google – Imagery

# Project Need



- Bridges are approximately 55 years old.
- “Patchwork” repairs are numerous which leads to poor rideability and repeated traffic impacts. This approach is no longer feasible.
- Bridges require deck reconstruction to restore the structural integrity.

# Work to Accomplish

## Bridge Deck Reconstruction



Existing Condition



Completed Construction



During Construction 5

# Work to Accomplish

## Bridge Deck Reconstruction



Existing Condition



Completed Construction



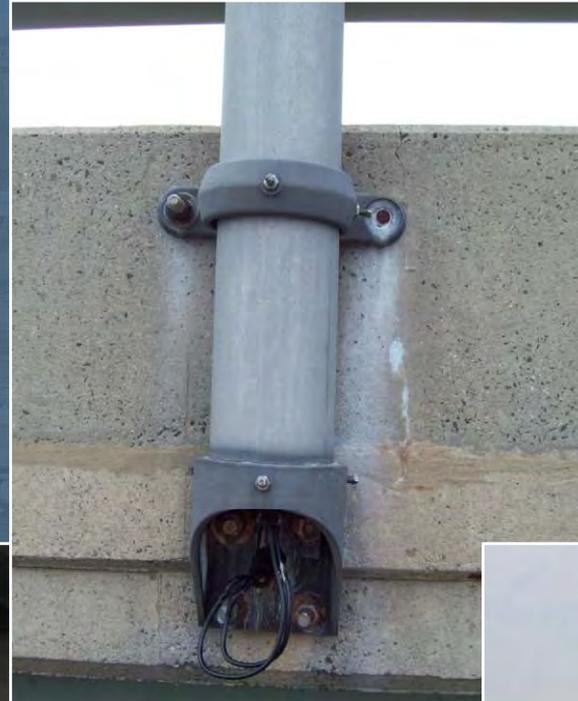
During Construction

# Work to Accomplish

## Miscellaneous Improvements



Drainage  
Improvements



Lighting  
Improvements



# Method of Reconstruction



## Project Divided into Three Sections



**Project Divided into Three Sections:**  
**Ramp Section (Grand Street On-Ramp)**

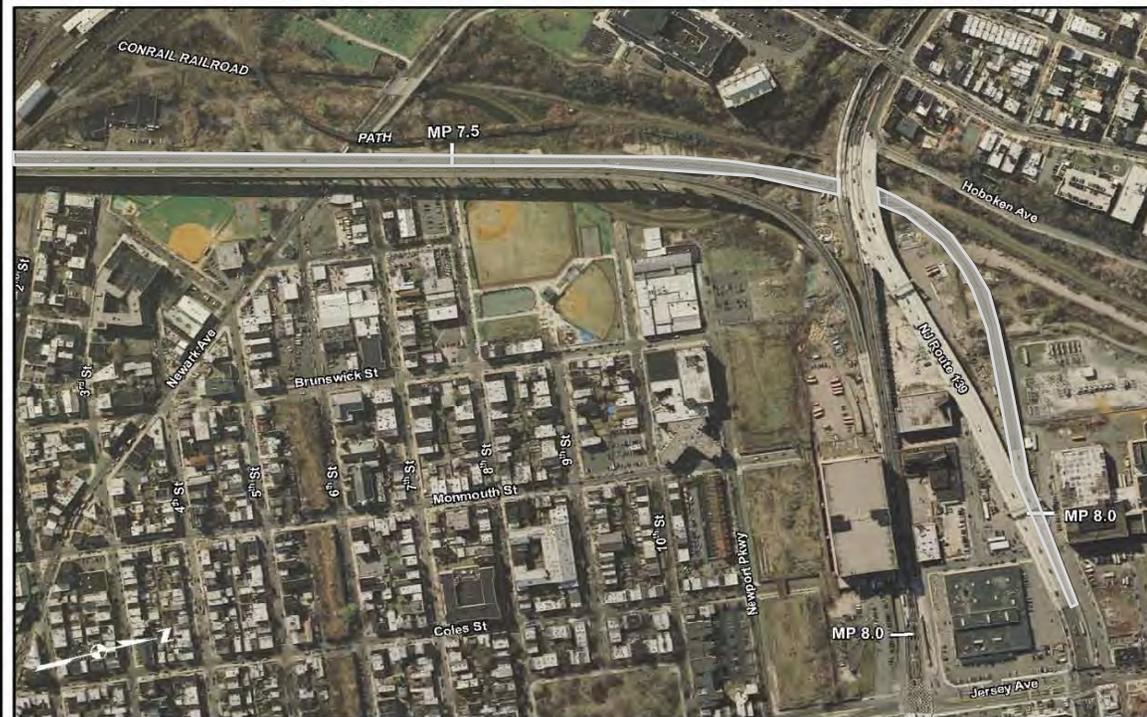
**West Section (Interchange 14C to  
Grand Street)**

**East Section (Grand Street to  
Jersey Ave/14<sup>th</sup> Street Intersection)**

# Method of Reconstruction



## Project Divided into Three Sections



**Project Divided into Three Sections:**  
**Ramp Section (Grand Street On-Ramp)**

West Section (Interchange 14C to  
Grand Street)

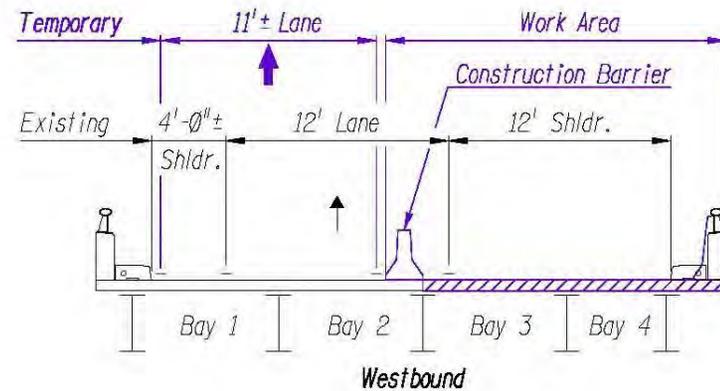
East Section (Grand Street to  
Jersey Ave/14<sup>th</sup> Street Intersection)

# Ramp Section

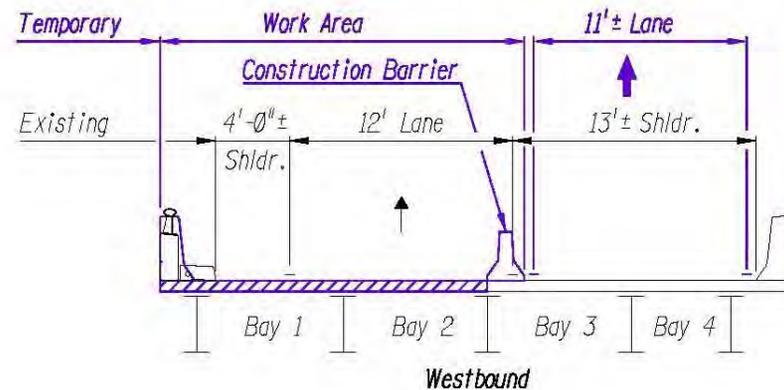
## Grand Street On-Ramp

### ***Maintenance and Protection of Traffic***

- Accomplished through two stages.
- Existing one lane of traffic is maintained, but shifted in both stages.
- Will require a limited number of weekend full ramp closures with a detour to complete the work.
- Overall Duration: Approximately 5 months.



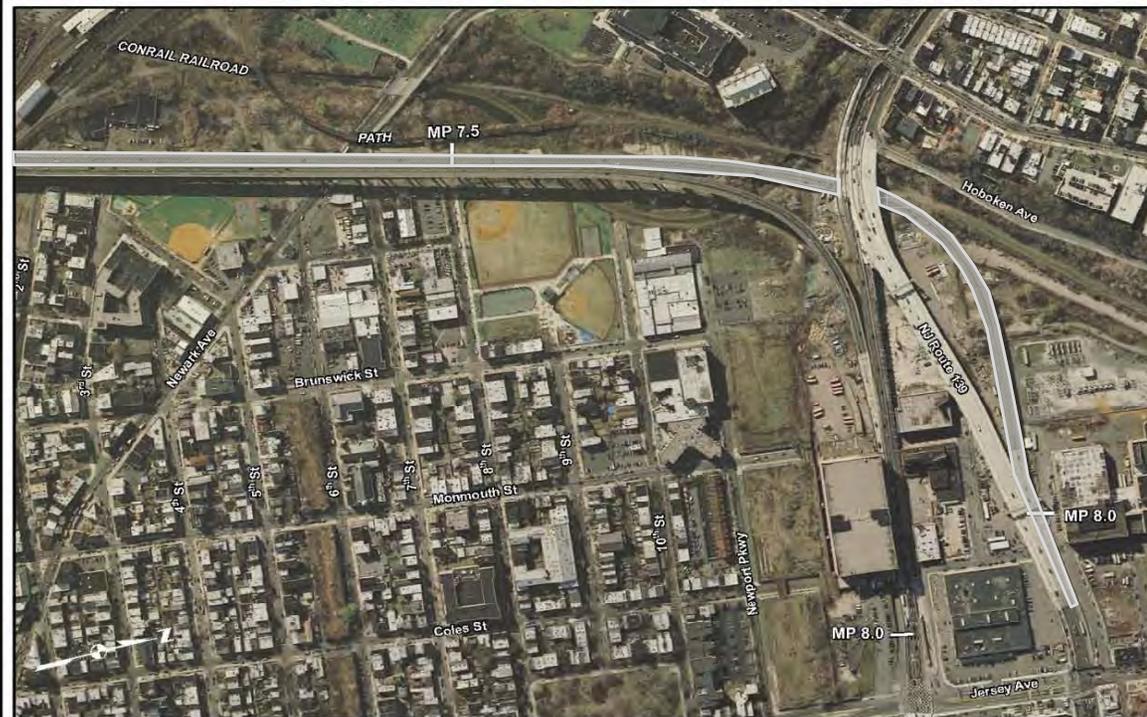
**TYPICAL RAMP SECTION - STAGE 1**  
Looking West



**TYPICAL RAMP SECTION - STAGE 2**  
Looking West

# Method of Reconstruction

Project Divided into Three Sections



**Project Divided into Three Sections:**  
**Ramp Section (Grand Street On-Ramp)**

**West Section (Interchange 14C to Grand Street)**

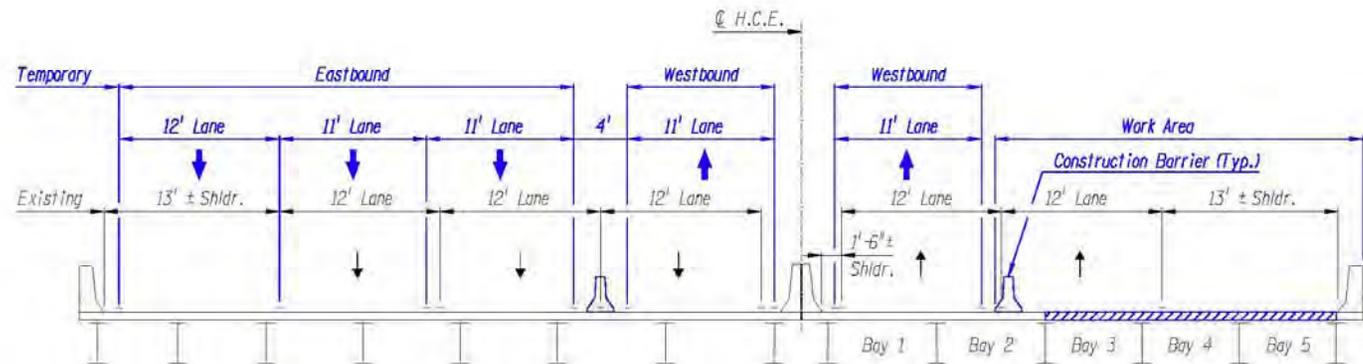
**East Section (Grand Street to Jersey Ave/14<sup>th</sup> Street Intersection)**

# West Section

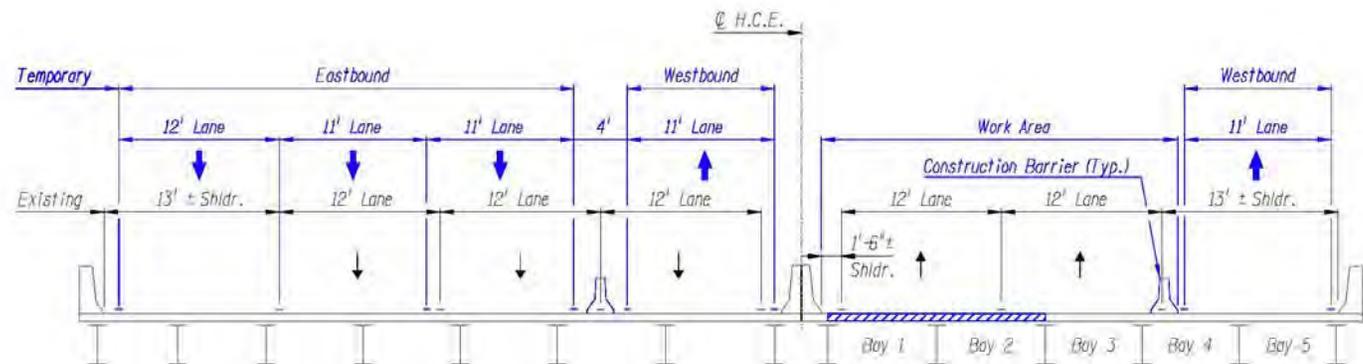
## Grand Street On-Ramp to Interchange 14C

### Maintenance and Protection of Traffic

- Maintains existing travel lanes in both directions.
- Accomplished through long-term cross-over.
- Will notify public of construction prior to implementation.
- Overall Duration: approximately 1 year.



TYPICAL WEST SECTION - STAGE 1  
Looking West



TYPICAL WEST SECTION - STAGE 2  
Looking West

# Method of Reconstruction



## Project Divided into Three Sections



**Project Divided into Three Sections:**  
**Ramp Section (Grand Street On-Ramp)**

**West Section (Interchange 14C to  
Grand Street)**

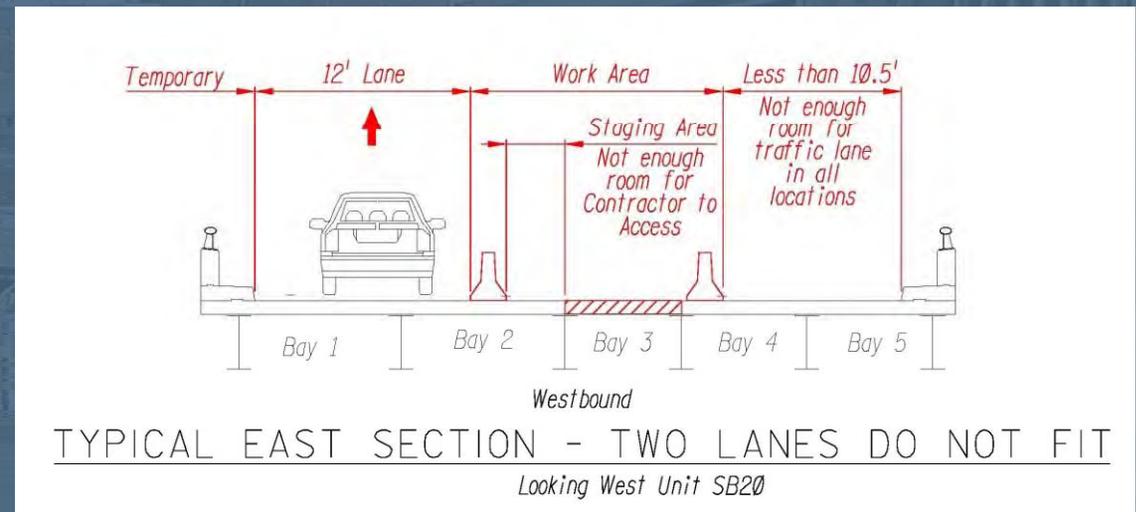
**East Section (Grand Street to  
Jersey Ave/14<sup>th</sup> Street Intersection)**

# East Section

## Intersection of Jersey Avenue/14<sup>th</sup> Street to Grand Street On-Ramp

### *Maintenance and Protection of Traffic*

- Due to geometry of roadway, cannot maintain two lanes of traffic during the reconstruction.
- Performed alternatives analysis to determine best approach for deck reconstruction.



# East Section

## Alternatives Evaluated



### Construction MPT Alternatives for this Section

Construction Staging Alternatives	Construction Duration		Impact Ratings							Cost for area east of Grand Street	Remarks
	Overall	1 lane out of service	Traffic Impacts	Feasibility	Construction Quality	Noise/Dust Impacts	Community Impacts	Cost	Total Impact Score (Lower is better)		
1. High Intensity Crash Cycle (H.I.C.C.) (Weekend Closing of 1 Lane)	Approximately 55 weekends (4+ years)	Approximately 55 weekends (4+ years)	8	5	8	8	5	9	7.1	\$57 million	Very unbalanced project with majority of work solely on weekends will drive up price. Makes maintaining remainder of roadway difficult since limited remaining available weekend cycles for other capital projects.
2. Long term 1 Lane Closure	16 months (1.3 years)	16 months (1.3 years)	5	5	4	6	5	4	4.8	\$44 million	Maintains best flow with shorter durations & lower cost, provides a well balanced schedule.
3. Full Shut Down of the Westbound roadway	6 months (0.5 year)	6 months (0.5 year)	10	10	1	10	8	2	7.2	\$39 million	Local roadways cannot handle the traffic necessary to close roadway as gridlock would ensue making this alternative not feasible.
4. One Lane Temporary Structure (2 lanes maintained)	40 months (3.3 years)	0 months (0 years)	2	10	4	5	9	10	6.2	\$53 million	Major traffic and community impacts due to necessity of closing Merseles Blvd for Temporary Structure; also major Environmental & R.O.W. impacts/ processes.
Impact Percentages			25%	25%	20%	10%	10%	10%	100%		



# East Section

## Alternatives Evaluated

### Construction MPT Alternatives for this Section

Construction Staging Alternatives	Construction Duration		Impact Ratings							Cost for area east of Grand Street	Remarks
	Overall	1 lane out of service	Traffic Impacts	Feasibility	Construction Quality	Noise/Dust Impacts	Community Impacts	Cost	Total Impact Score (Lower is better)		
<b>2. Long term 1 Lane Closure Preferred Alternative</b>	16 months (1.3 years)	16 months (1.3 years)	5	5	4	6	5	4	4.8	\$44 million	Maintains best flow with shorter durations & lower cost, provides a well balanced schedule.

Due to the importance of this roadway and the surrounding roadway network, a traffic impact analysis was performed.

- First – Local Study
- Second – Regional Study
- Third – Real Life Implementation

# East Section

## Traffic Impact Analysis



- Analysis compared existing traffic with proposed conditions and the overall capacity of the roadway.
- Looked at delay time, travel speed, event of an accident, among other criteria.
- Both Local and Regional Models determined that the preferred alternative has the least impact to traffic.

# East Section

## Real Life Implementation



- Interim repair work has been performed while using a closing similar to the preferred alternative in June, 2011.
- Extensive efforts were made to maintain traffic flow throughout the area during the closing.
- Closing was successful as bridge repairs were completed without unusual delays to the traffic despite storms and accidents.



### ADVISORY

Media contact:  
Tom Feeney  
732-750-5333

feeney@turnpike.state.nj.us

### Bridge deck work to force closure of one lane on Turnpike near Holland Tunnel for two weeks in June

**WOODBRIIDGE, NJ, June 7, 2011** – Because of bridge deck repairs and other improvements, the entrance to the westbound New Jersey Turnpike from the Holland Tunnel will be reduced from two lanes to one from June 15 to June 29. Traffic impacts are expected to be moderate to severe during peak travel times until motorists become accustomed to the new traffic pattern.

The work will be done on the Newark Bay-Hudson County Extension between Jersey Avenue at the entrance to the Turnpike and the Interchange 14C toll Plaza. Only one lane will be open for westbound traffic for the duration of the project. There will be no shoulders available on the westbound side, but disabled vehicles will be advised to park behind the cone closure.

Peak travel periods westbound on that section of the Turnpike are from 4 to 7:30 p.m. Monday through Friday and from 11 a.m. to 7 p.m. Saturday and Sunday.

For real-time information about delays associated with the work, motorists are encouraged to call 511 from any phone or visit [www.511nj.org](http://www.511nj.org) on the Web. (Drivers using cell phones should always use a hands-free device.) Traffic alerts and live Web cam images of the highway near the construction are available on the 511 Web site and on the Turnpike Authority's Web site, [www.state.nj.us/turnpike/](http://www.state.nj.us/turnpike/).

# East Section

## Real Life Implementation – Measures Taken

- Personnel, including additional Jersey City and PANYNJ Police, were on-site to observe and report conditions throughout Jersey City and surrounding area.
- Towing service stationed at closing during commuting hours.
- Live cameras provided agencies the ability to monitor traffic conditions along 14<sup>th</sup> Street, Route 139 and Turnpike Extension on 24 hour / 7 day basis.



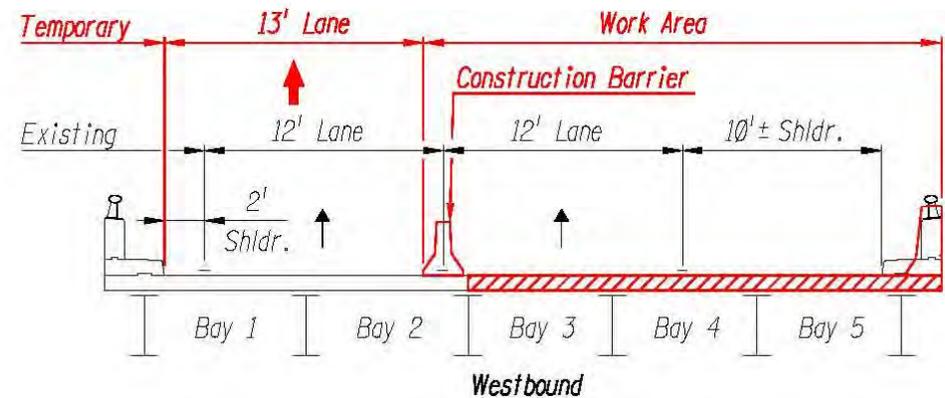
14<sup>th</sup> Street looking towards Erie Street – 24 hour loop

# East Section

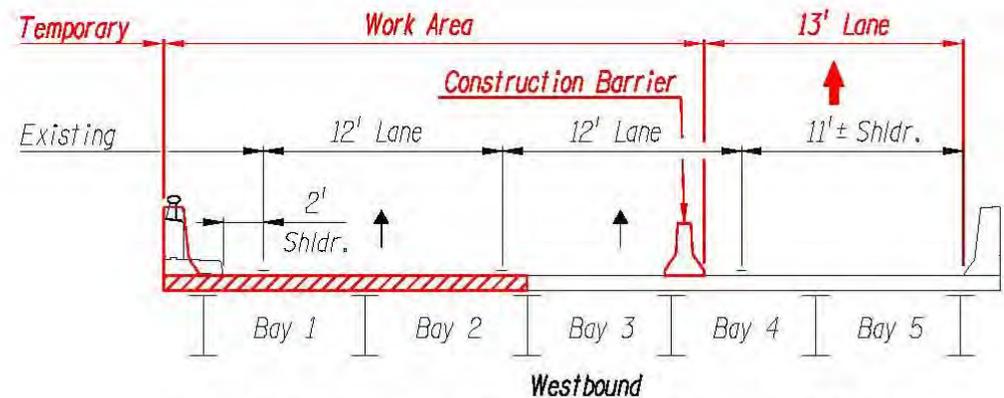
## Intersection of Jersey Avenue/14<sup>th</sup> Street to Grand Street On-Ramp

### MAINTENANCE AND PROTECTION OF TRAFFIC

- Based on the Traffic Studies and success of real life implementation, the preferred alternative results in the best traffic flow with shorter construction duration and lower cost.
- The work will be accomplished through a long-term one lane reduction.
- To reduce the overall construction timeframe, accelerated construction techniques are being considered.
- Overall Duration: Approx. 16 months.



TYPICAL EAST SECTION - STAGE 1  
Looking West



TYPICAL EAST SECTION - STAGE 2  
Looking West

# Design / Construction Measures

- Noise Monitoring Study was performed. Limitations will be included within the Contract to minimize noise levels.
- Provisions to be developed for maintenance of school parking below the bridges.
- Implementing detour for anticipated closures along on-ramps.
- Provisions included for dust control.
- For the East Section, the size of work areas will be limited to minimize traffic impacts.
- On-site towing service and assistance from Jersey City Police will be provided to facilitate traffic flow during peak hours.





# Next Steps

- Review input gathered at Public Information Center.
- Continue meeting with Department of Transportations (NYC, NYS and NJ) as well as Port Authority to coordinate projects.
- Continue meeting with local officials including various departments within Jersey City.
- Meet with local school board.
- Complete design.
- Advertise and award the Contract.



# Schedule

	2011		2012				2013				2014				2015				2016	
	Fall	Winter	Spring	Summer	Fall	Winter	Spring													
Design	█	█	█																	
Award				★																
Construction					█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
West Section					█	█	█	█	█	█										
Ramp Section										█	█	█								
East Section													█	█	█	█	█	█	█	█



# Questions & Comments

Please feel free to ask questions and provide your comments today.

To do so:

1. Fill out comment sheet and deposit it in the basket by the door.
2. Fill out comment sheet and mail it in.
3. Send your questions and comments to [TurnpikeReconstruction@gpinet.com](mailto:TurnpikeReconstruction@gpinet.com)

Copy of presentation available at:  
[www.state.nj.us/turnpike/our-projects.html](http://www.state.nj.us/turnpike/our-projects.html)