

February 28, 2013

# Pulaski Skyway Corridor Rehabilitation Program



**Pulaski Skyway**  
NJ Treasure

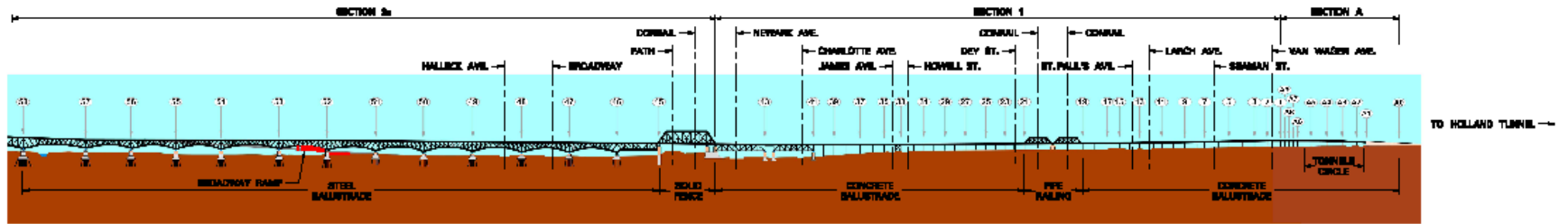
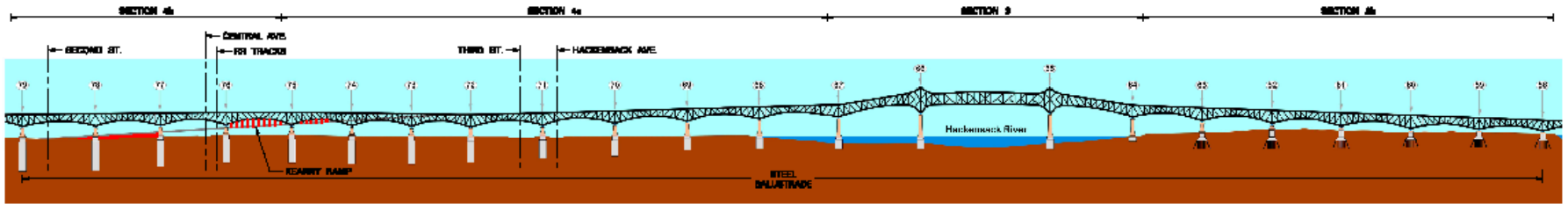
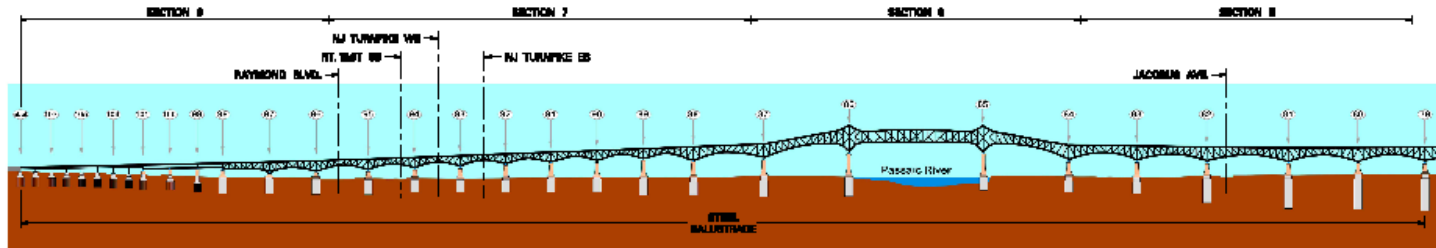


# Corridor Definition



 Pulaski Skyway Viaduct       East Approach

- Pulaski Skyway is 3 ½ miles long
- Direct Link to Holland Tunnel via Route 139
- Links Newark at Raymond Blvd. & Jersey City at Tonnele Ave Circle
- Broadway Ramp – southbound entrance, northbound exit to Jersey City
- Kearny Ramp – southbound exit, northbound entrance to Kearny



**PULASKI SKYWAY  
ELEVATION**  
NEWARK, ESSEX COUNTY  
KEARNY & JERSEY CITY, HUDSON COUNTY

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02/08/2012

TO: NJ Turnpike Authority, 200 South Mountain Ave., Paramus, NY 10765  
 FROM: R.T.E., 1000 Route 108, Suite 200, Jersey City, NJ 07310  
 PROJECT: PULASKI SKYWAY ELEVATION



# Superstructure



**Main Thru-Truss**



**Deck Truss**



**Multi-Girder Spans**



**Thru-Truss (Span 20)**



**Thru-Truss (Span 44)**

**Concrete Encased Piers**



**Reinforced Concrete Piers**



# Substructure



**Steel Bent Pier**

## Steel Columns and Cross Frames





# Existing Conditions Superstructure



**Vehicular Impact to  
Diagonal Member**

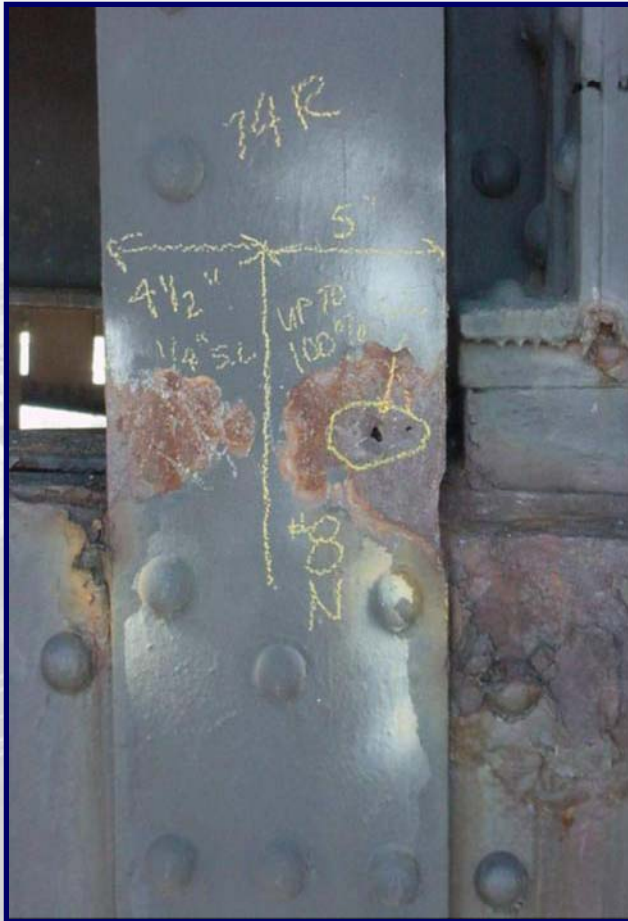


**100% Loss to South Truss Lacing Bars and  
Horizontal Legs of Bottom Angles**



**Holed-Through Gusset Plate  
in Lower Chord**

# Existing Condition Superstructure



Section Loss and Holes on  
Hanger



Up to 50% Section Loss  
Hanger Vertical Members



Up to 100% Section Loss  
Floorbeam Member



# Existing Conditions Superstructure & Deck Components



Holes in adjacent  
web panels



Hole in stringer with  
entire end panel  
missing



# Existing Condition Substructure



## Reinforced Concrete Abutments

- Exposed and Rusted Reinforcing Steel
- Concrete Delamination
- Random Medium to Wide Cracks



Exposed Bottom Flanges of Pier  
Caps Exhibit Moderate Corrosion  
and Efflorescence



# Existing Condition Substructure

## Reinforced Concrete Piers

- Chipped and Split Concrete With Exposed Reinforcing Steel
- Areas of Delamination
- Vertical and Horizontal Cracks From 1/8 Inch to 1/4 Inch Wide



# Existing Condition Substructure



**Cracked Weld at Column / Pier Cap  
Connection**

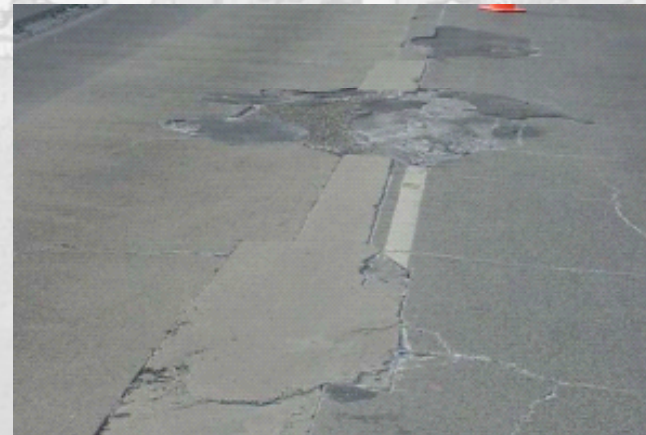


**Up to 50% Anchor Bolt Section Loss at  
Base of Column for Pier Bent**



# Underlying Deck Condition

Examples of severely deteriorated, cracked and patched concrete deck





# Interim Rehab/Repair Contracts

**\$90M in interim construction projects:**

- **No. 1 - Deck repairs Spans A0 to 44 – Complete - \$22M**
- **No. 2 - Deck repairs Spans 45 to 108 & overlay entire deck – Complete - \$23M**
- **No 3. - Priority repairs from inspection report – Complete - \$6M**
- **No 4. – Drainage protection repairs – Nearing Completion- \$38M**



# Existing Traffic Flows

- Carries 67,000 vehicles per day
- Carries **3,500 NB**/2,640 SB in AM peak hour
- Carries **3,035 SB**/2,905 NB in PM peak hour





# ALTERNATIVE ANALYSIS





# Task Force Started the Assessment Process

- Task Force charged with developing a comprehensive plan to address the needs of this complex structure
- Members included representatives from NJDOT, FHWA, SHPO, NJ TPK, PANYNJ, NJDEP, NJ Transit, TRANSCOM
- First Task Force meeting held 11/2005
- Discussions during this collaborate effort formed the basis of the Concept Development alternatives.



# 2008 Concept Development Public Involvement Program

Monday  
September 8, 2008  
through  
December 2008

P U L A S K I S K Y W A Y



N E W J E R S E Y T R E A S U R E

An exhibit showcasing  
the important contributions  
that the Pulaski Skyway,  
“America’s First Superhighway,”  
has made to Newark and  
the surrounding area.

Fourth Floor Gallery  
The Newark Public Library  
5 Washington Street  
Newark, NJ 07102

Curated by **Deirdre Schmidel**, *Reference Librarian, The Newark Public Library*  
in conjunction with New Jersey Department of Transportation, Division of Project Development  
& Bureau of Landscape Architecture & Environmental Solutions

**Cory A. Booker**, Mayor  
City of Newark

**Jeffrey A. Vanderbank**, President  
Board of Trustees

**Wilms J. Gray**, Director  
The Newark Public Library

[www.npl.org](http://www.npl.org)



- Local Officials and Agency Meeting
- Public Info Center
- Newsletters
- NJDOT website
- Fact Sheet
- Library Program
- Stakeholder databases



# Local Officials & Agencies Meeting

## ■ Invitees:

- Essex and Hudson Counties
- Hudson TMA
- Newark
- Jersey City
- Kearny
- Meadowlink
- TRANSCOM
- SHPO
- NJTPA
- NJTPK
- PANYNJ





# Alternatives Considered

- No Build – Bridge Closed and Removed - No Provision for Displaced Traffic
- No Build – Bridge Closed and Removed - Provide Alternate Route Improvements
- New Parallel Structure and Rehab Existing
- New Parallel Structure and Demolish Existing
- Rehabilitate Skyway
  - Rehabilitate and Widen Skyway
  - Rehabilitate and Relocate Center Ramps to Outside
  - **Rehabilitate Skyway in Current Configuration (PPA)**



# Preliminary Preferred Alternative (PPA)

## *Rehabilitate Structure in Current Configuration*

- Selected based on:
  - Ability to roll-out Safety Improvements sooner
  - Improved Quality of final product
  - ROW cost is relatively low
  - Lowest Construction Cost (\$1B)
  - Minimal environmental impacts
  
- Design for 75 year service life





# DECK CONSTRUCTION STAGING ALTERNATIVES



# Deck Replacement Alternatives Studied

## Overnight/Weekend Construction

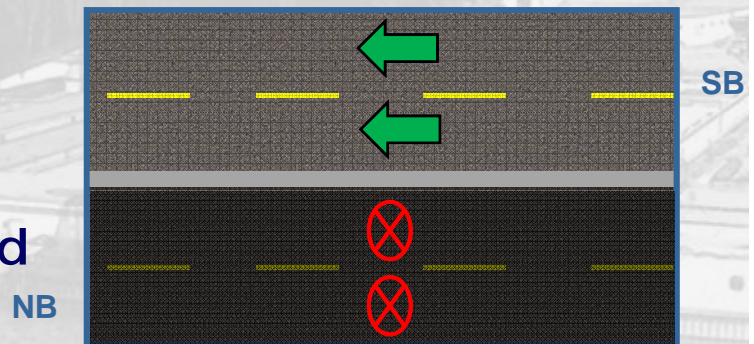
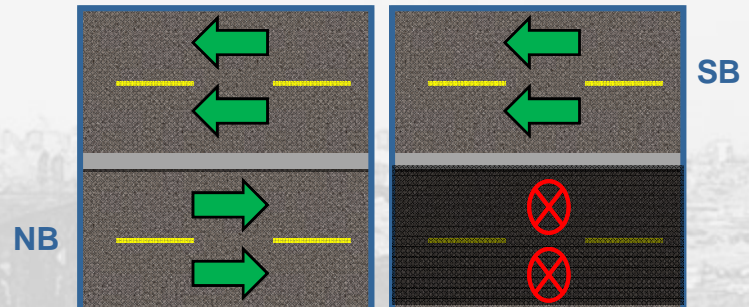
- Maintain peak period capacity
- Night and Weekends Construction closes one bound
- Estimated Construction Cost \$571M
- Construction Duration over 6 years

## Close 1 Bound Full Time

- Either NB or SB direction closed
- Options to maintain traffic on open bound
- Estimated Construction Cost \$355M
- Construction Duration Approximately 24 months

Peak Periods

Nights/Weekends



Either Bound could be closed

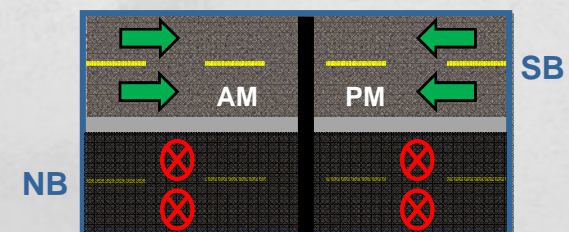
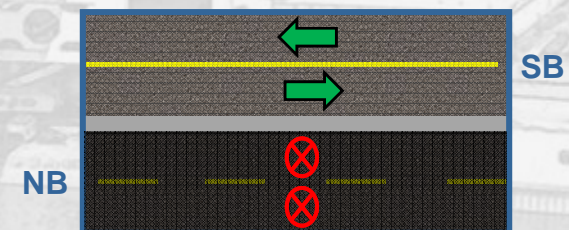
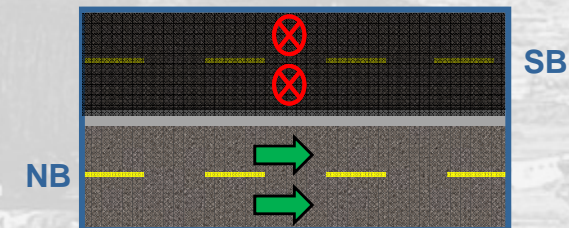
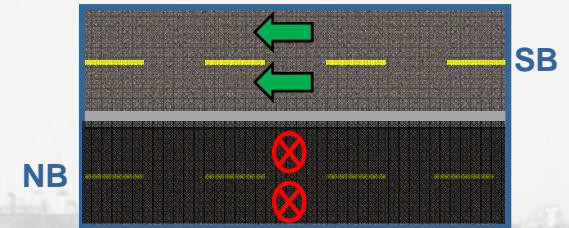
## Close 1 Bound Preferred Due to Quality, Safety, Duration & Costs

- Construction Costs Savings \$216M
- Construction Duration Savings at least 4.5 years



# Close 1 Direction Alternatives Analyzed

- Northbound direction full time closure
  - Better facilitation of evacuation of Jersey City & NYC
  - More choices for NB traffic prior to closure point
- Southbound direction full time closure
  - Concern of backups thru Tunnel into NYC
  - Concern of impeding access to Newark Airport
  - Compounds conflict with Turnpike WB construction (1-lane reduction) resulting in additional impacts to Jersey City streets
- Close 1 bound and maintain 1 lane in each direction
  - Not enough width to safely provide 1 lane in each direction
- Close 1 bound w/Peak Period reversible lanes
  - Operational concerns and costs of moving barriers twice a day, safety related to motorist expectations
  - Difficult ramp access
  - Loss of all capacity during switching periods: would mean significant detouring of traffic into and through Jersey City and Newark during off-peak periods

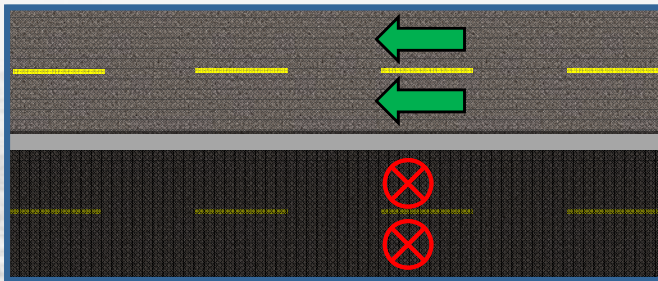




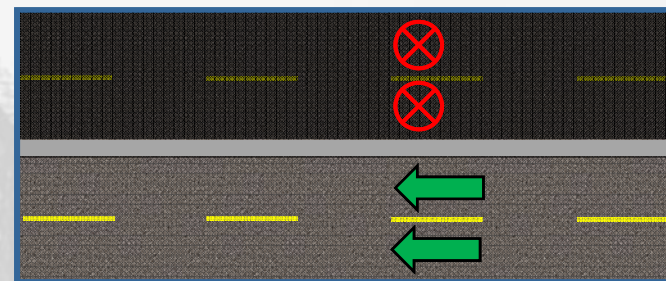


# Closing the Northbound Direction

## Pulaski Contract 3



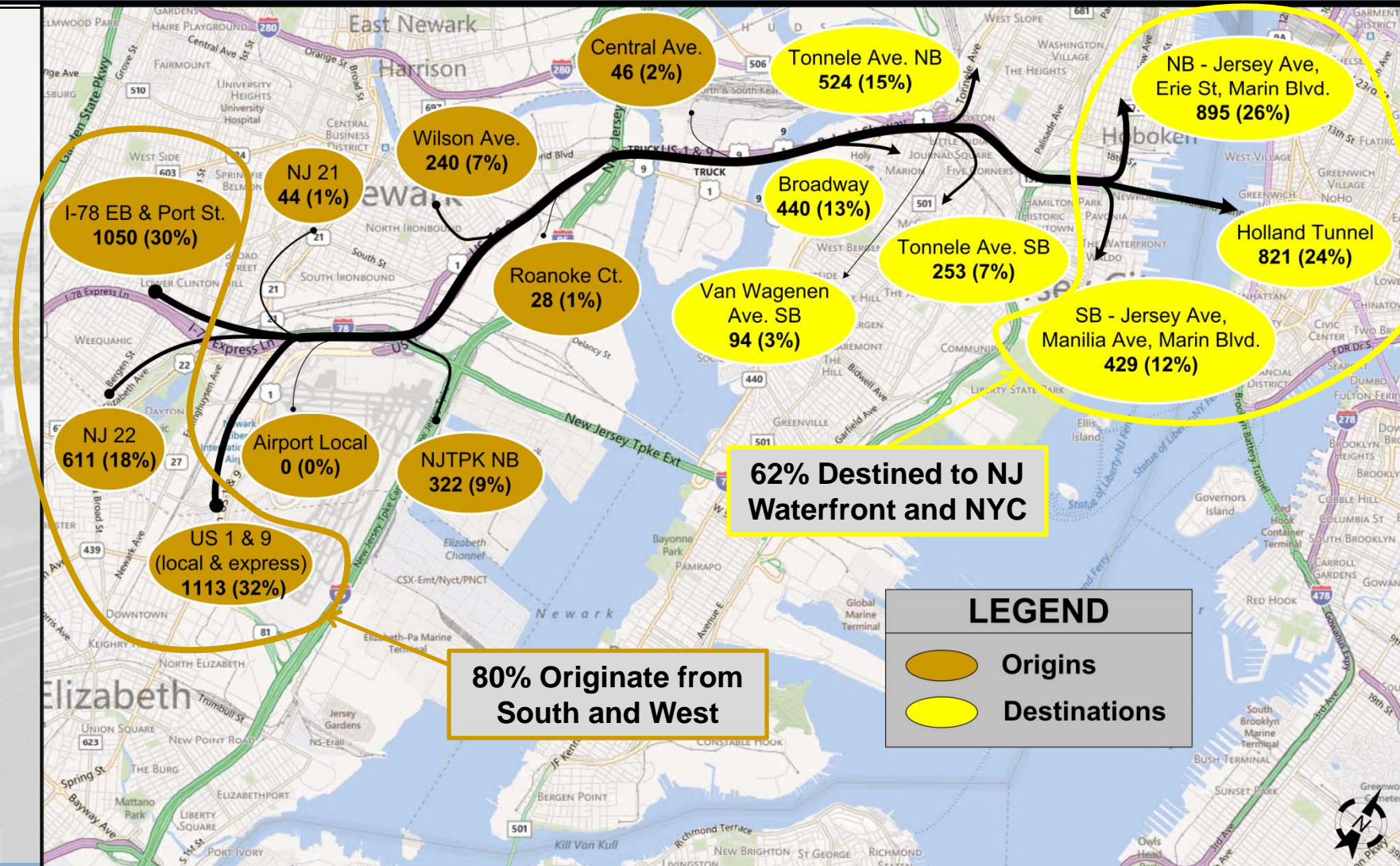
## Pulaski Contract 4



- Maintain SB direction of traffic leaving Jersey City & NY
  - Northbound Traffic Impacts approximately 24 Months starting in March 2014.
  - Completed before Route 7 Roadway Construction for the Wittpenn Bridge Replacement begins.



# Weekday Morning Origin & Destinations



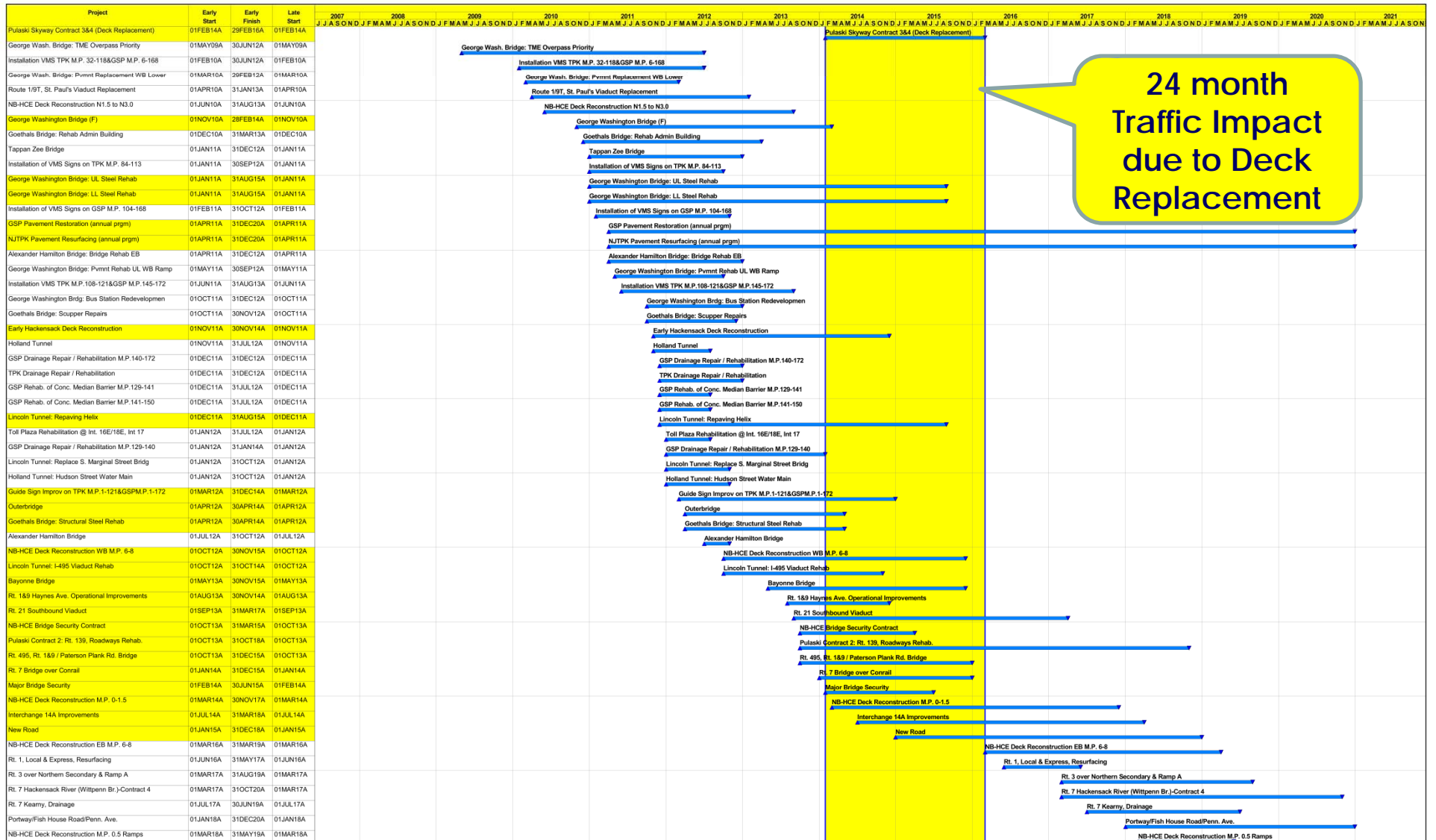


# Traffic Mitigation Concepts

- Coordinate Pulaski Deck Construction with other Regional Construction Projects:
  - Pulaski Contract 2: East Approach (Route 139) Improvements
  - Wittpenn Bridge (Route 7)
  - NJ Turnpike Newark Bay Hudson County Extension (I-78/NB-HCE)
- Transit and TDM measures estimated to result in 5% to 10% peak hour trip reductions.
- Optimize network to favor NB flow on other facilities including 1&9T. – **ONGOING ANALYSIS**
- Use NB Shoulder on I-78/NB-HCE as Travel Lane.



# 2014 and 2015 Regional Projects

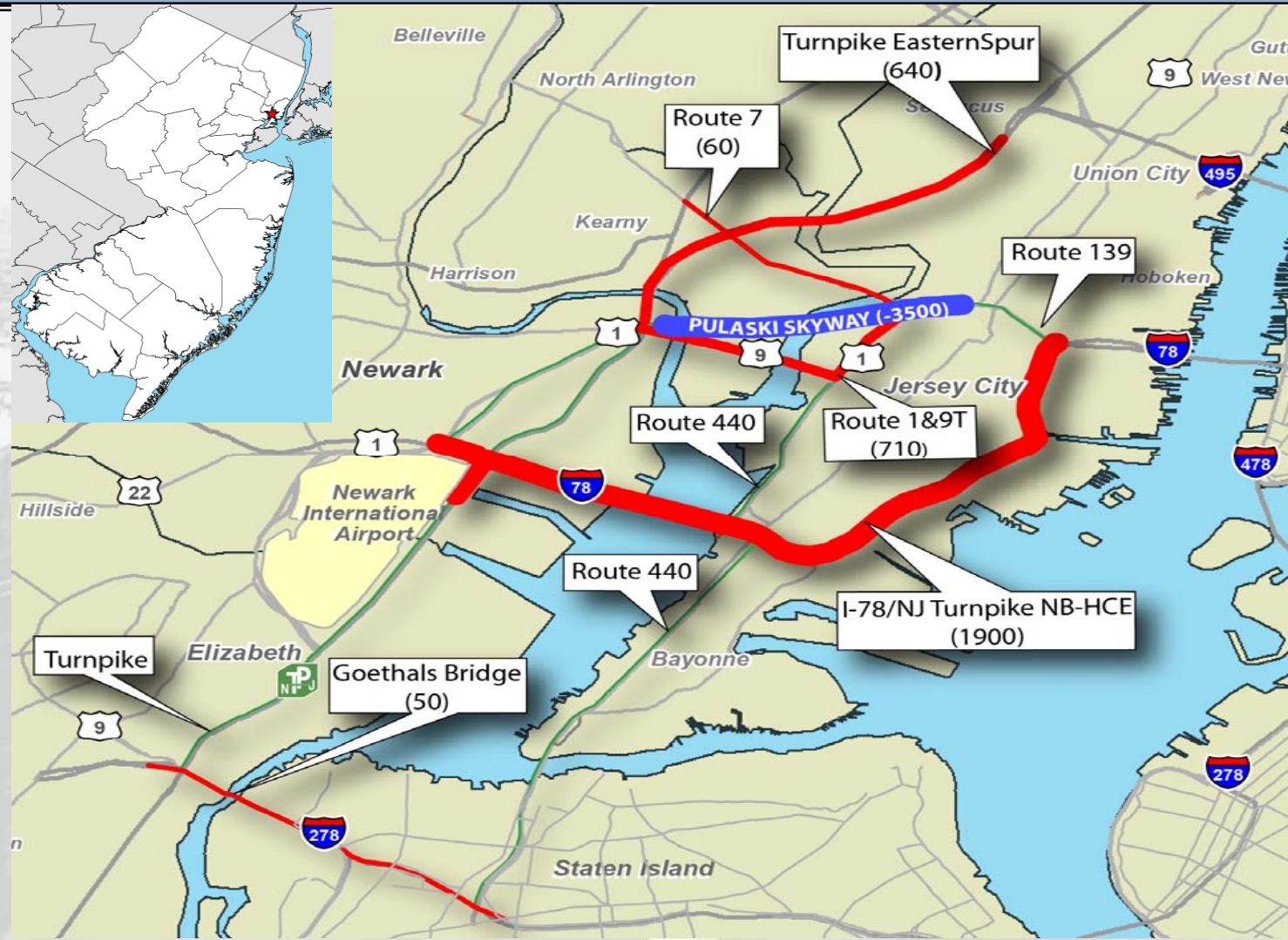


# Study Area - Alternate Routes





# Expected Roadway Diversions





# Roadway Capacity Mitigation Strategies





# Route 1&9 Truck NB Optimization

- Signal Optimization and Adaptive Signal Control
- Geometric/Striping Improvements at Hackensack Avenue and Newark Avenue
- Phasing Improvements at Newark Avenue
- Proposing Removing Left Turn phase at Duncan Avenue
- Additional Ramp Lane from 1&9 Local to 1&9 Truck creating a Two-Lane Ramp





# TRANSPORTATION MANAGEMENT PLAN



# Transportation Management Plan (TMP)

- Comprehensive planning effort to minimize traffic impacts to the region.
- Coordination among other regional agencies with planned projects.
- Examining ways to increase capacity on diversionary routes.
- Examining methods to increase transit services/options.
- User survey has gathered information on traveler's alternate route/mode preference during lane closures.
- Task Force has been developed consisting of Locals and regional agencies to develop and implement the TMP



# TMP Subcommittees Formed

- Incident Management
- Travel Demand Management (TDM) and Transit
- Traffic Control and Operations
- ITS Management
- Construction and Contracting
- Public Information



# January/February 2013 Coordination Meetings

- Fifteen meetings have been held in Jan. & Feb. since the Local Officials Meeting on January 10<sup>th</sup>.
- Attendees included:
  - PANYNJ
  - Turnpike Authority
  - NJ Transit
  - Hudson TMA
  - Hudson County Improvement Authority
  - Meadowlink
  - TRANSCOM
  - NYSDOT
  - North Jersey Transportation Planning Authority
  - Hudson County Engineering
  - Kearny Police/Fire
  - Newark Police/Fire
  - NJ Motor Truck Association
  - Jersey City
    - Engineering
    - Mayor's Office
    - Emergency Management
    - Police
    - Planning



# Sample of TMP Mitigation Strategies Advancing

- Addition of third shoulder lane on eastbound NB-HCE (I-78/Turnpike) to Exit 14C (Christopher Columbus Drive)
- Adaptive signal control on Route 1/9 Truck and other key intersections/corridors
- Temporary, full coverage cameras along length of Skyway and at key intersections on diversionary routes
- Provide a coordinated command center for First Responders
- Shuttles/vanpools run from selected locations
- Publicize available Transit options



# Sample of TMP Mitigation Strategies Advancing

- During construction, Dynamic Message Signs to provide real time 'travel times' for alternate routes and incident information at select locations in the region using Open Reach system & NJ 511
- Retime signal at Jersey Avenue to favor throughput on I-78/NB-HCE to accommodate volume associated with diverted traffic from Pulaski/Route 139 corridor.
- Construction and alternate route/mode information on NJDOT's website [www.pulaskiskyway.com](http://www.pulaskiskyway.com)



# Continuing Coordination

- Currently, there are eight Subcommittee meetings scheduled for March.
- A new Subcommittee that will include Jersey City, Kearny and Hudson County officials is being formed.
- Additionally attendees for Subcommittee meetings are added as identified.
- Additional meetings with local officials and regional agencies are being scheduled.
- Anticipate Jersey City 1 TV adding a voice to the project in the near future.

# www.pulaskiskyway.com



The Public is encouraged to provide feedback and comments at :  
<http://www.state.nj.us/transportation/works/studies/pulaski/contact.shtm>