Resilience in the Face of Climate Change

A Regional Perspective

Presented by:

Robert Graff, Manager, Office of Energy and Climate Change Initiatives, DVRPC

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DVRPC Regional Technical Committee

March 11, 2014

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

re•sile (rĭ-zīl′) *intr.v.* **-siled, -sil•ing, -siles. 1.** To spring back, especially to resume a former position or structure after being stretched or compressed. **2.** To draw back; recoil. [Obsolete French *resilir,* from Latin *resilīre,* to leap back : *re-,* re- + *salīre,* to leap; see **sel-** in Appendix.]

re•sil•ience (rĭ-zĭl′yəns) *n.* **1.** The ability to recover quickly from illness, change, or misfortune; buoyancy. **2.** The property of a material that enables it to resume its original shape or position after being bent, stretched, or compressed; elasticity.

re•sil•ien•cy (rĭ-zĭl′yən-sē) *n.* Resilience.

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sel-. Important derivatives are *salient, sally, sauté, assail, desultory, exult, insult, result, somersault,* and *salmon.*

Preparing to Bounce Back Faster

Doing Things Differently to Minimize Damage

More Extreme Weather Expected

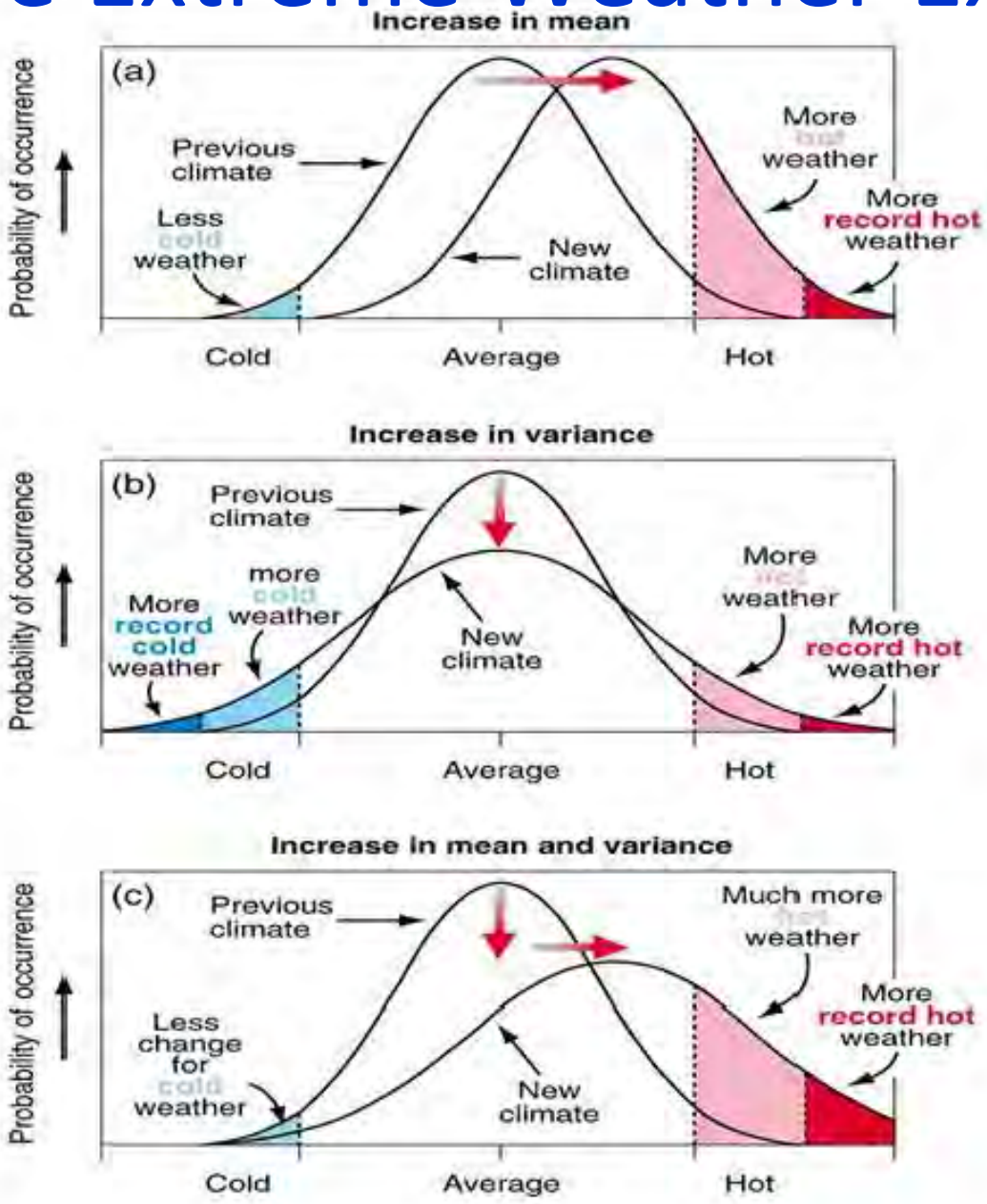


Image credit:
IPCC (2001)

Future DVRPC = Today's ARC?

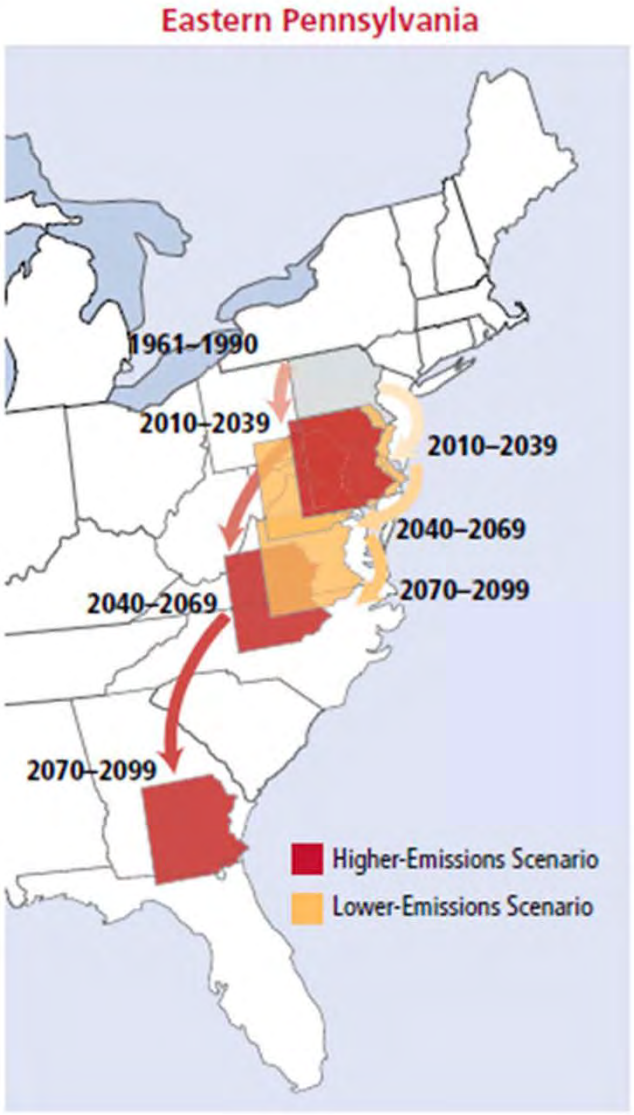
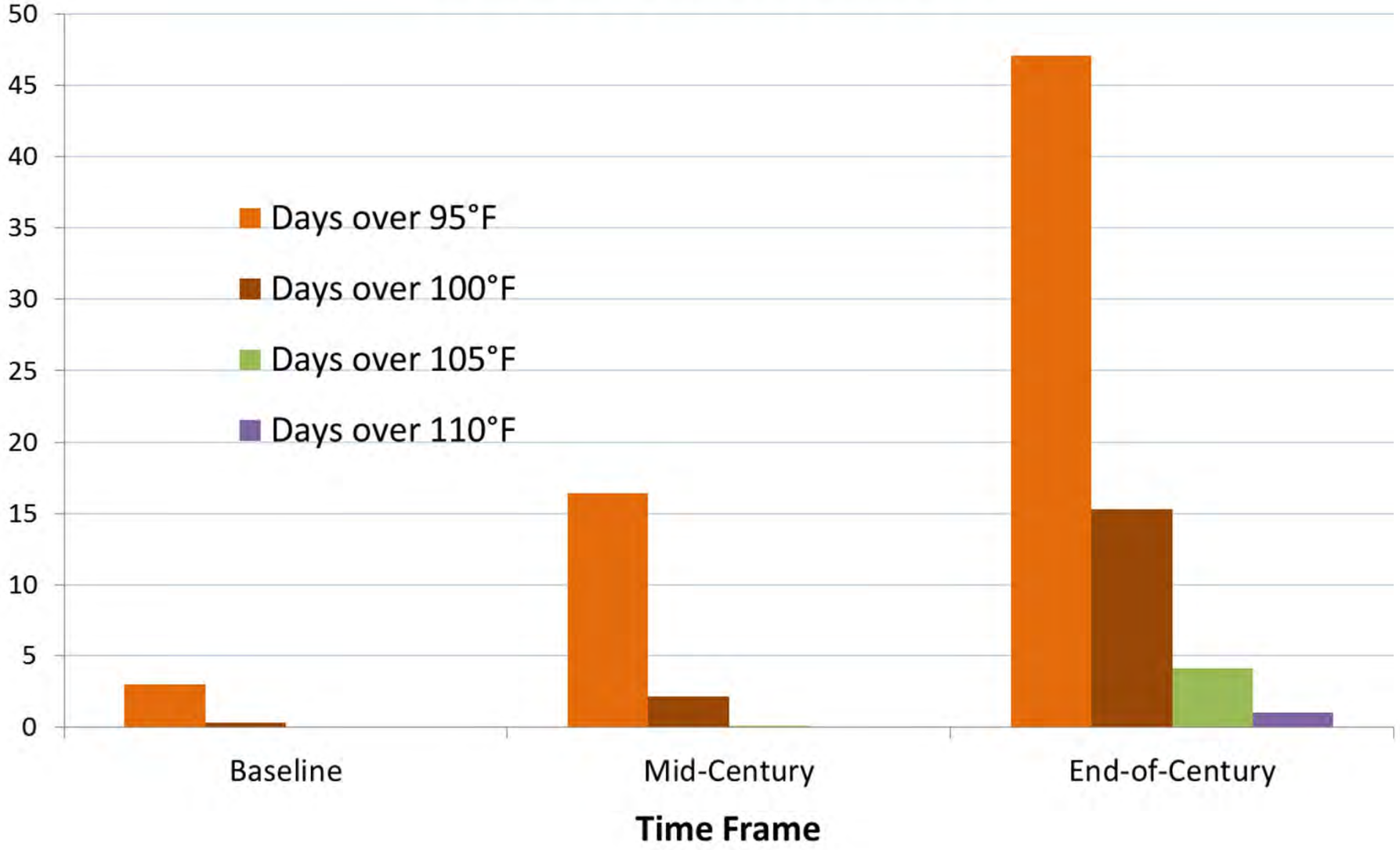


Image credit: UCS

Temperature Extremes in Greater Philadelphia

One Set of Projections from CMIP3*



* Phase **3** of the **C**oupled **M**odel **I**ntercomparison **P**roject, LLNL, from FHWA's Draft CMIP Climate Data Processing Tool

Hydrological Extremes Increase with Temperature

Floods

Blizzards

Drought

Severe Thunderstorms

Tornadoes

Hail Storms

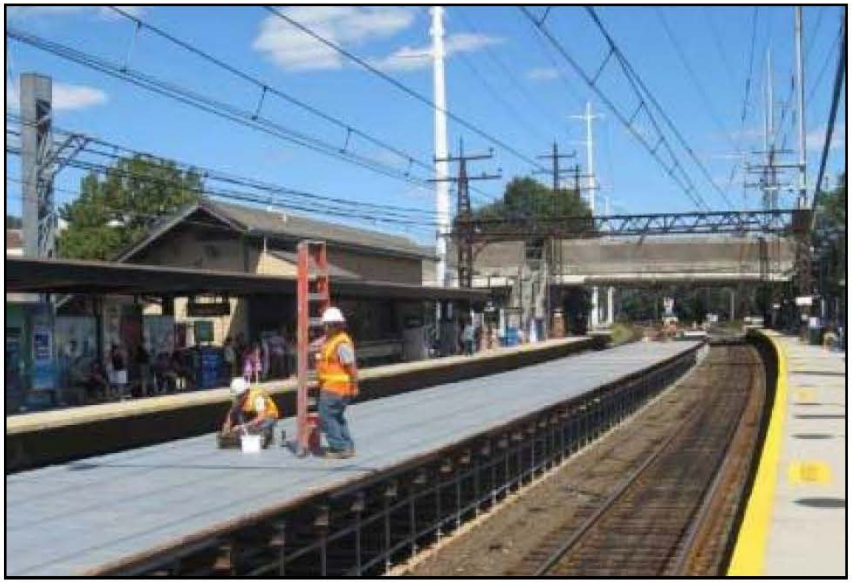
Hurricanes

Heat

Heat

Heat

Heat



Wind

Wind

Wind

Wind

Wind

Water

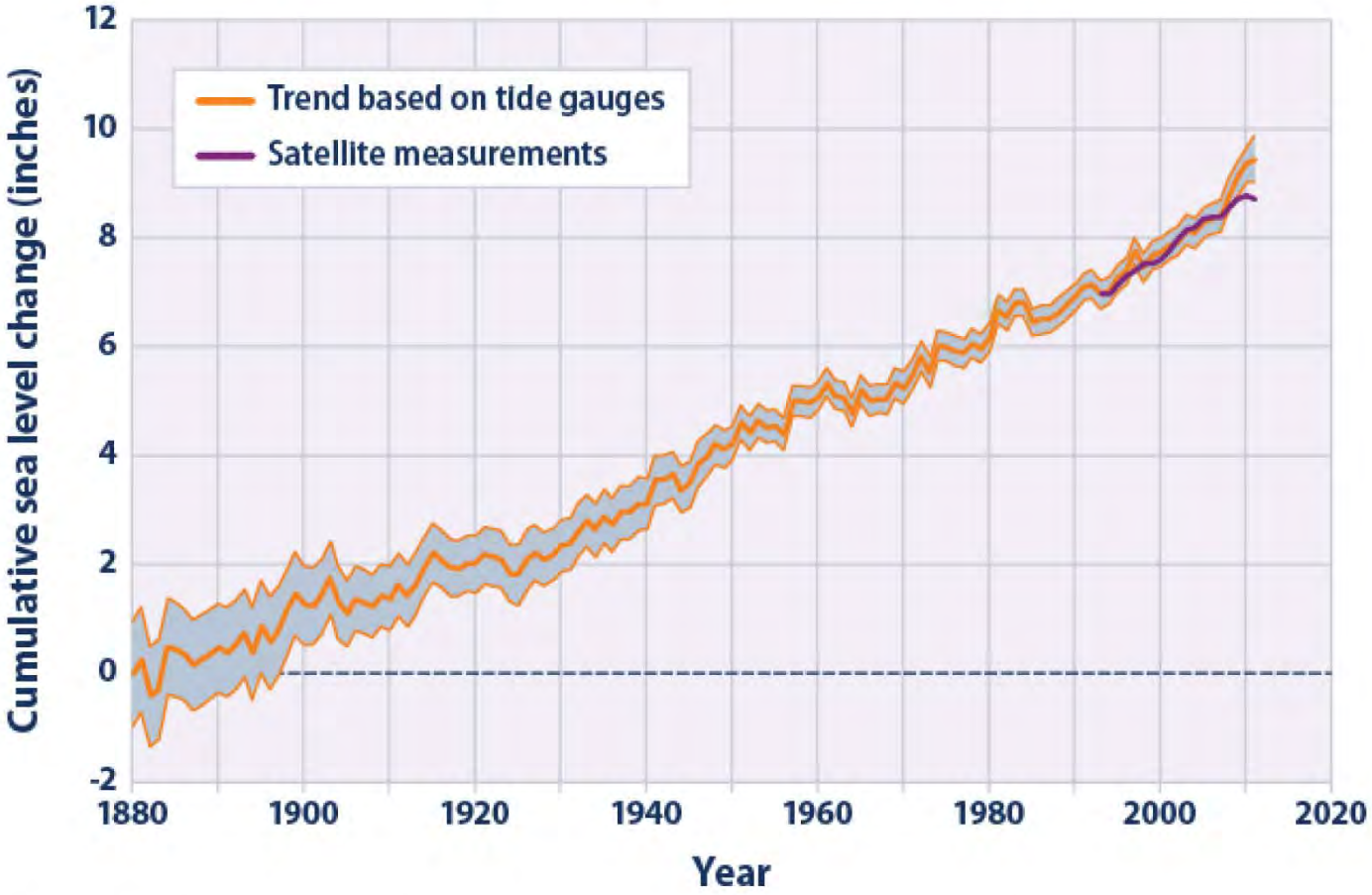
Water

Water

Water

Sea Level Rise

Global Average Absolute Sea Level Change, 1880–2011



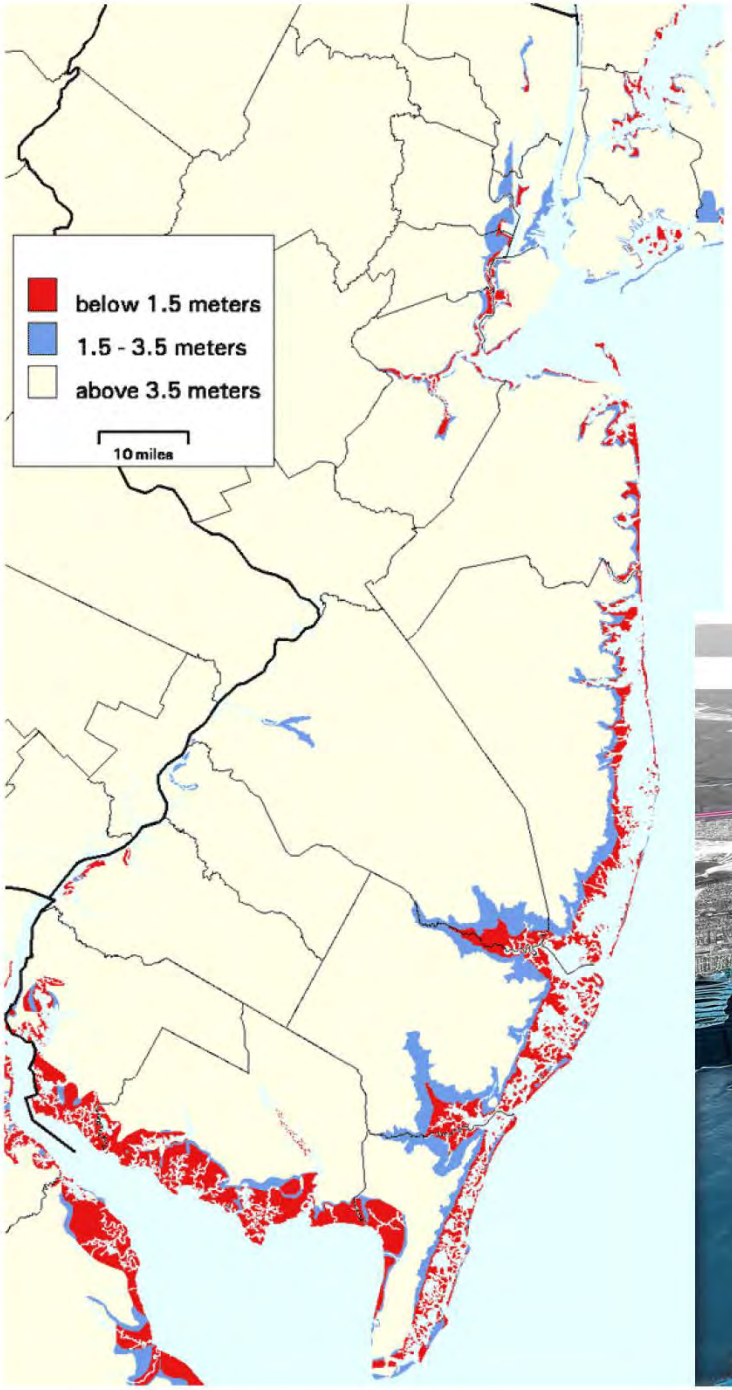
Data sources:

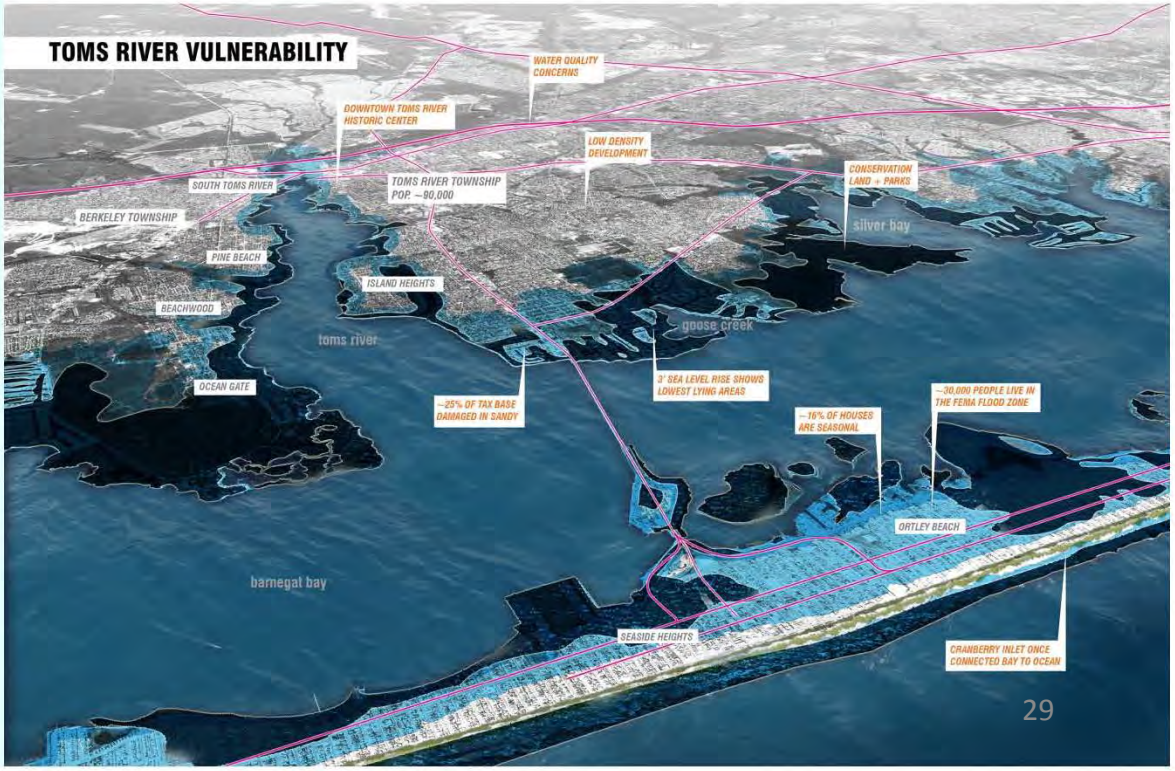
- CSIRO (Commonwealth Scientific and Industrial Research Organisation). 2012 update to data originally published in: Church, J.A., and N.J. White. 2011. Sea-level rise from the late 19th to the early 21st century. Surv. Geophys. 32:585–602.
- NOAA (National Oceanic and Atmospheric Administration). 2012. Laboratory for Satellite Altimetry: Sea level rise. Accessed May 2012. http://ibis.grdl.noaa.gov/SAT/SeaLevelRise/LSA_SLR_timeseries_global.php.

For more information, visit U.S. EPA's "Climate Change Indicators in the United States" at www.epa.gov/climatechange/indicators.

Image credit: U.S. EPA

Sea Level Rise





Storm Surge

Storm Surge

Storm Surge

Storm Surge

Takeaways

- The future is expected to have more frequent extreme weather events.
- These are likely to have a damaging impact on transportation infrastructure.
- We need to prepare now, both to protect infrastructure, and to be ready to repair it.

Questions?

"Any doubling of the percentage of carbon dioxide in the air would raise the temperature of the earth's surface by 4°C; and if the carbon dioxide were increased fourfold, the temperature would rise by 8°C." – *Världarnas Utveckling (*Worlds in the Making), 1906

Latest estimate from IPCC (2013):
1.5 – 4.5°C

Svante Arrhenius
1859-1927

CLIMATE VARIABILITY & RESILIENCE STRATEGIES: SEPTA'S EXPERIENCE

ERIK JOHANSON

MANAGER OF STRATEGIC BUSINESS PLANNING

MARCH 11, 2014

SEPTA'S PRIMARY CHALLENGE:
STATE OF GOOD REPAIR (SGR)

CURRENT BACKLOG:

$5 BILLION

+

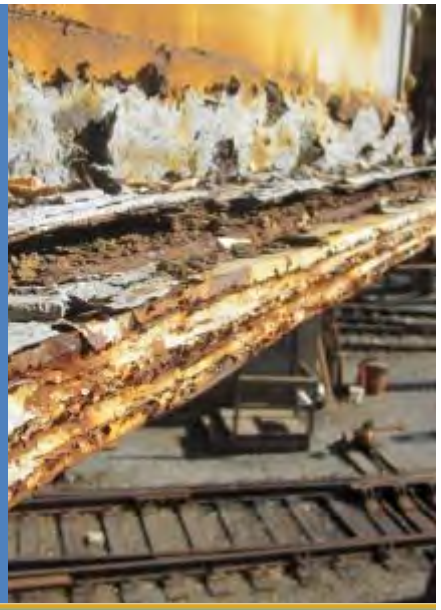
20-YEAR REHAB & REPLACEMENT NEEDS:

$8.5 BILLION

=

TOTAL STATE OF GOOD REPAIR NEED:

$13.5 BILLION

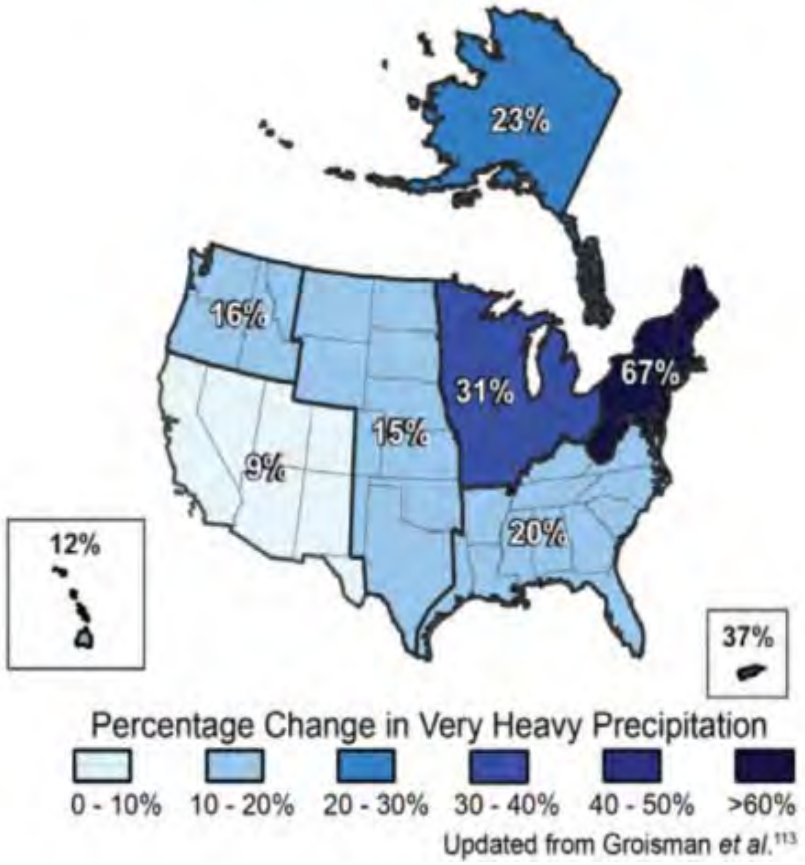


CLIMATE VARIABILITY:
A NEW CHALLENGE FOR SGR

WHAT WE KNOW:

- Four FEMA Major Disaster declarations in Philadelphia since 2010
- In Northeast US, aging systems more vulnerable
- Climate trends a key consideration to ensure asset resiliency

"The biggest increases in very heavy precipitation over the last 50 years have been in the Northeast, home of some of the largest and oldest rail transit systems."



EXTREME WEATHER IN PHILADELPHIA

POLAR VORTEX → ICE JAM

CONTEXT FOR RESILIENCY PLANNING

- IS THIS GOING TO HAPPEN MORE OFTEN IN THE FUTURE?
- IF SO, WHAT DO WE DO ABOUT IT?

FTA PILOT PROGRAM

OBJECTIVES:

- Better Understand Climate Projections
- Assess Key Vulnerabilities
- Develop Forward-Looking Resiliency Strategies

ONE OF SEVEN PROJECT TEAMS ACROSS U.S.

ICF INTERNATIONAL

SEPTA

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

PROJECTED CLIMATE TRENDS

PHILADELPHIA REGION BY MID-CENTURY (2050)

	TODAY'S WEATHER…	…% CHANGE IN FREQUENCY BY 2050		
	CLIMATE VARIABLE	MINIMUM PROJECTED CHANGE	MAXIMUM PROJECTED CHANGE	AVERAGE PROJECTED CHANGE
HEAT	AVERAGE TEMPERATURE	4%	9%	**7%**
	93° F (5TH %)	101%	302%	**196%**
	98.1° F (1ST %)	215%	1,107%	**540%**
PRECIP	AVERAGE RAINFALL	-6%	17%	**7%**
	1.4" (5TH %)	2%	30%	**15%**
	2.5" (1ST %)	-1%	69%	**39%**
	"SNOW CHANCE" DAYS	-12%	-35%	**-25%**

MANAYUNK/NORRISTOWN LINE

MORE THAN 50% OF THE HIGHEST SCHUYLKILL RIVER CRESTS @ NORRISTOWN HAVE OCCURRED IN THE LAST 10 YEARS

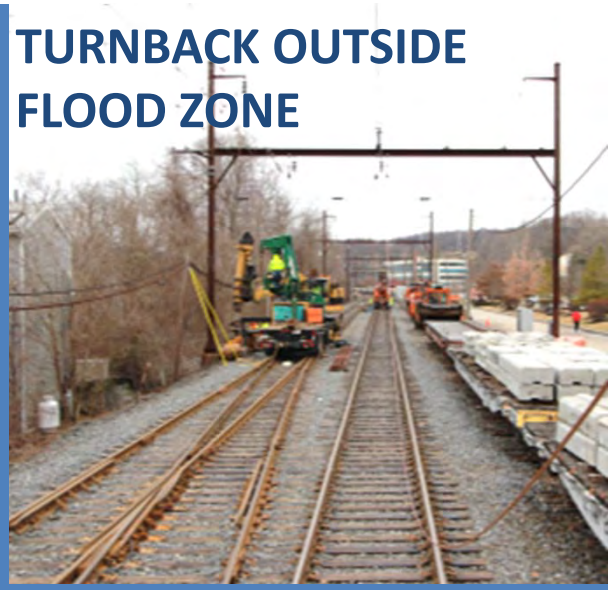
RANK	CREST	DATE
(1)	25.10 ft	06/23/1972
(2)	22.00 ft	09/17/1999
(3)	21.00 ft	08/24/1933
(4)	19.76 ft	08/28/2011
(5)	19.30 ft	09/13/1971
(6)	19.13 ft	06/28/2006
(7)	19.00 ft	01/20/1996
(8)	18.40 ft	08/19/1955
(9)	18.30 ft	10/01/2010
(10)	18.00 ft	10/19/1991
(11)	17.92 ft	10/09/2005
(12)	17.60 ft	12/05/1993
(13)	16.28 ft	06/21/2003
(14)	16.06 ft	09/07/2011
(15)	16.06 ft	04/03/2005
(16)	16.00 ft	09/18/2004
(17)	15.37 ft	09/29/2004
(18)	14.35 ft	03/11/2011

RESILIENCE STRATEGIES UNDERWAY: CAPITAL

SLOPE STABILIZATION

RAISED SIGNAL HUTS

TURNBACK OUTSIDE FLOOD ZONE



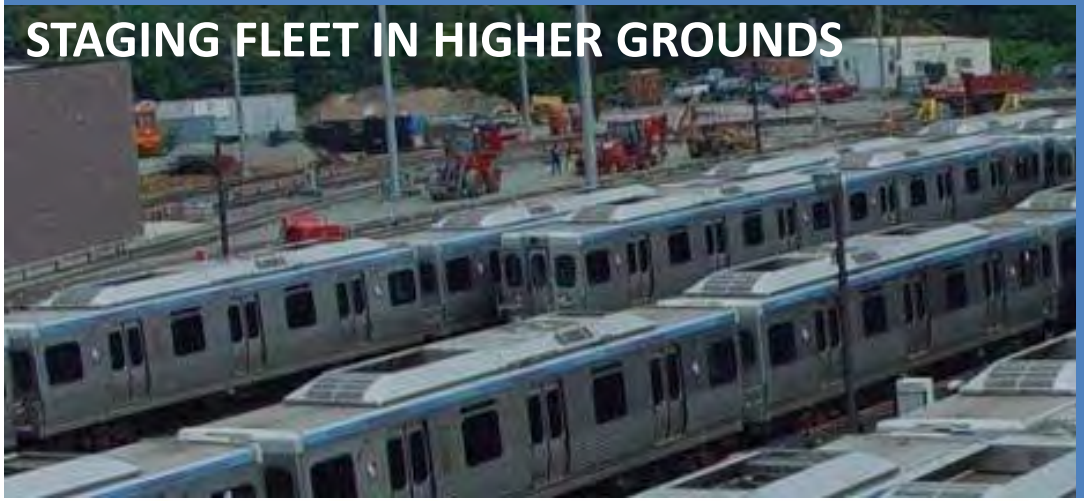
EMERGENCY GENERATORS

RESILIENCE STRATEGIES UNDERWAY: OPERATING & MAINTENANCE

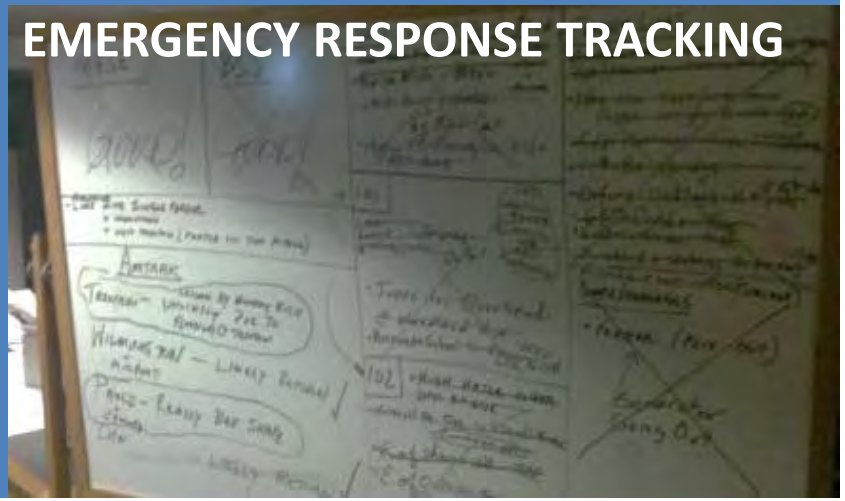
DILIGENT TREE-TRIMMING

SANDBAGGING VENTWELLS

STAGING FLEET IN HIGHER GROUNDS

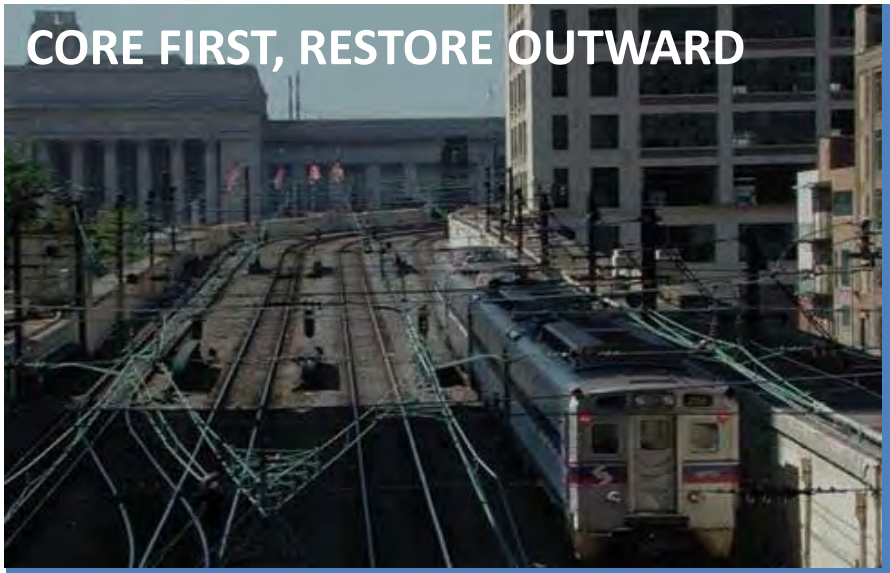


EMERGENCY RESPONSE TRACKING



RESILIENCE STRATEGIES: ADMINISTRATIVE

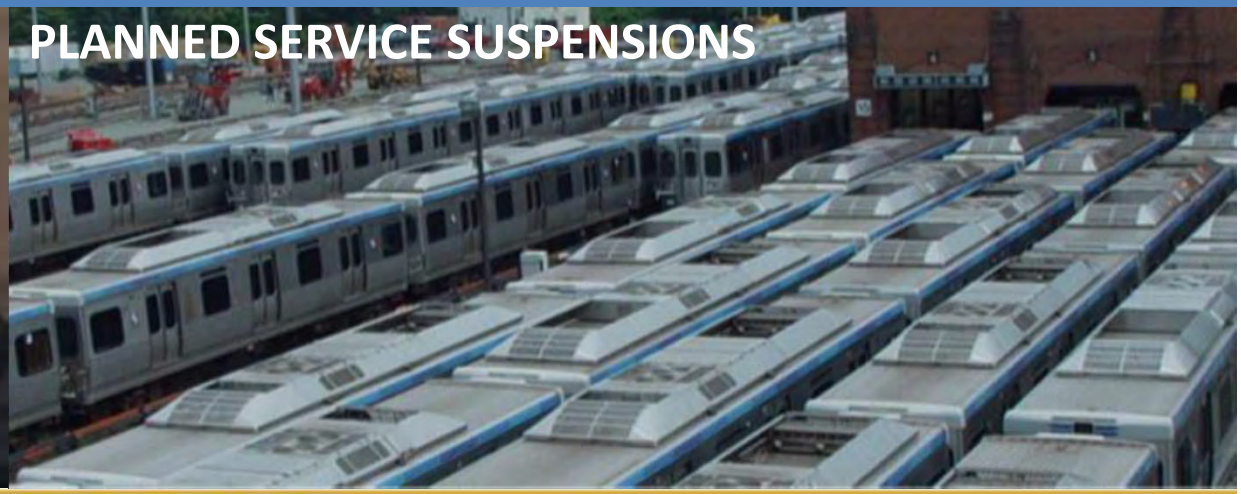
CORE FIRST, RESTORE OUTWARD



CUSTOMER COMMUNICATIONS

INTERAGENCY COOPERATION

PLANNED SERVICE SUSPENSIONS



FTA FUNDING OPPORTUNITY

$3 BILLION AVAILABLE FOR "SANDY ZONE"

- Prioritizes Projects that:
  - Harden Assets Against Future Natural Disasters
  - Reduce Risk of Disruptions from Natural Disasters
  - Cost-Effective Projects From Collaborative Planning Efforts

- SEPTA's Application includes:
  - Power Resiliency
  - Right of Way Hardening
  - Flood Mitigation
  - Emergency Communications

CLIMATE VARIABILITY & RESILIENCE STRATEGIES: SEPTA'S EXPERIENCE

ERIK JOHANSON

MANAGER OF STRATEGIC BUSINESS PLANNING

MARCH 11, 2014

Assessing the Vulnerability of New Jersey's Transportation Infrastructure to the Impacts of Climate Change

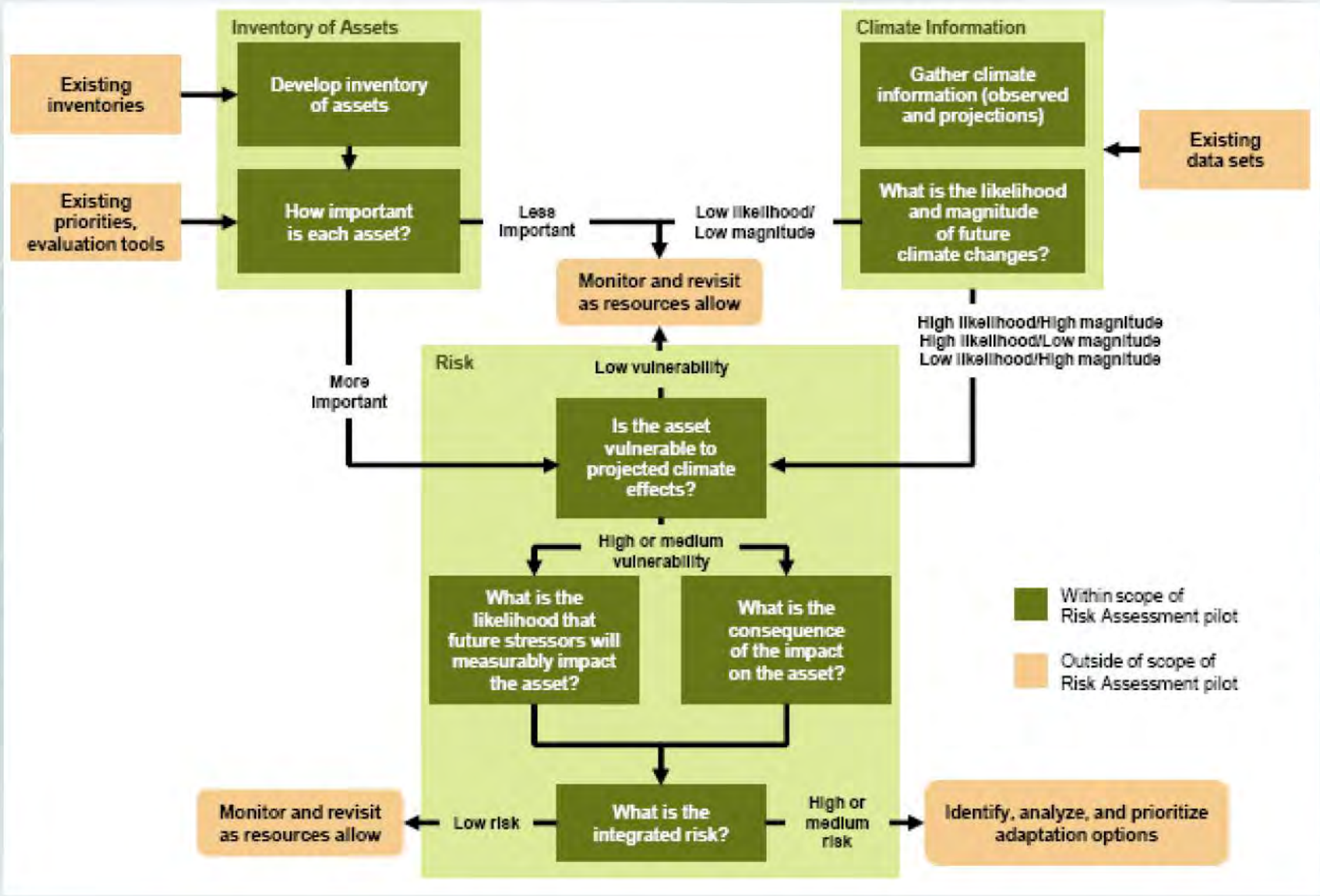
Presented by:
Christopher Linn, AICP, Delaware Valley Regional Planning Commission

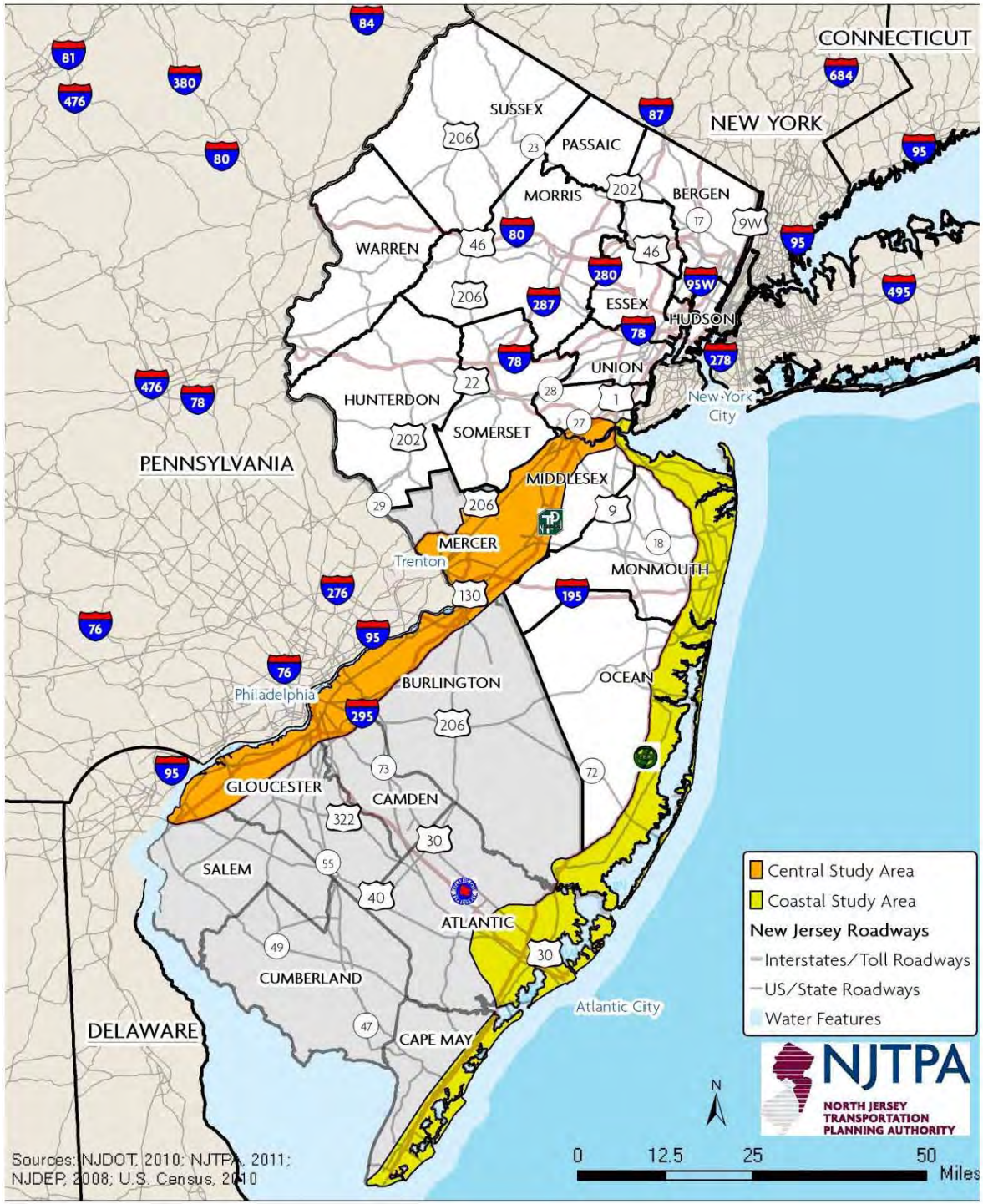
March 2014

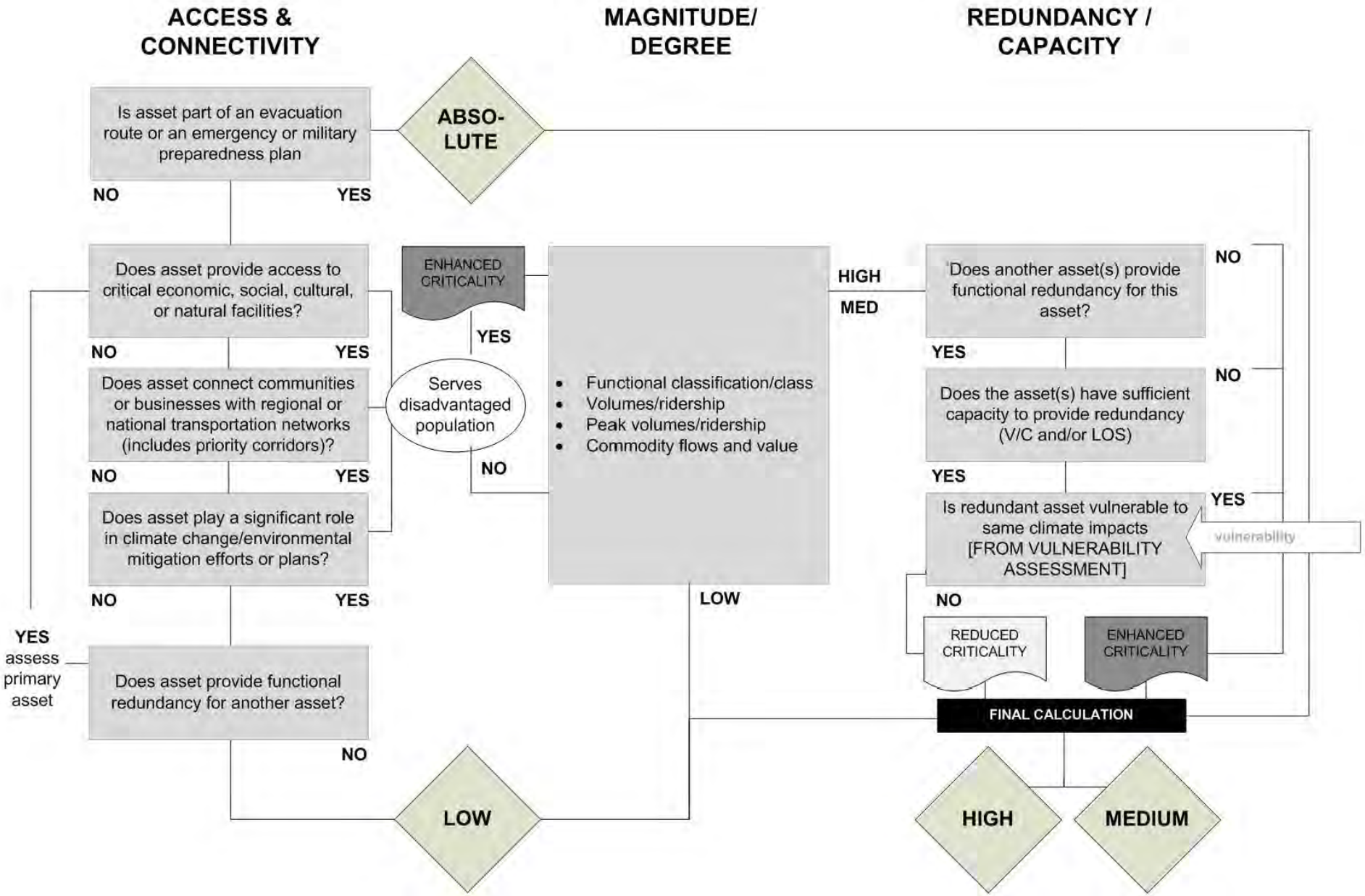
DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

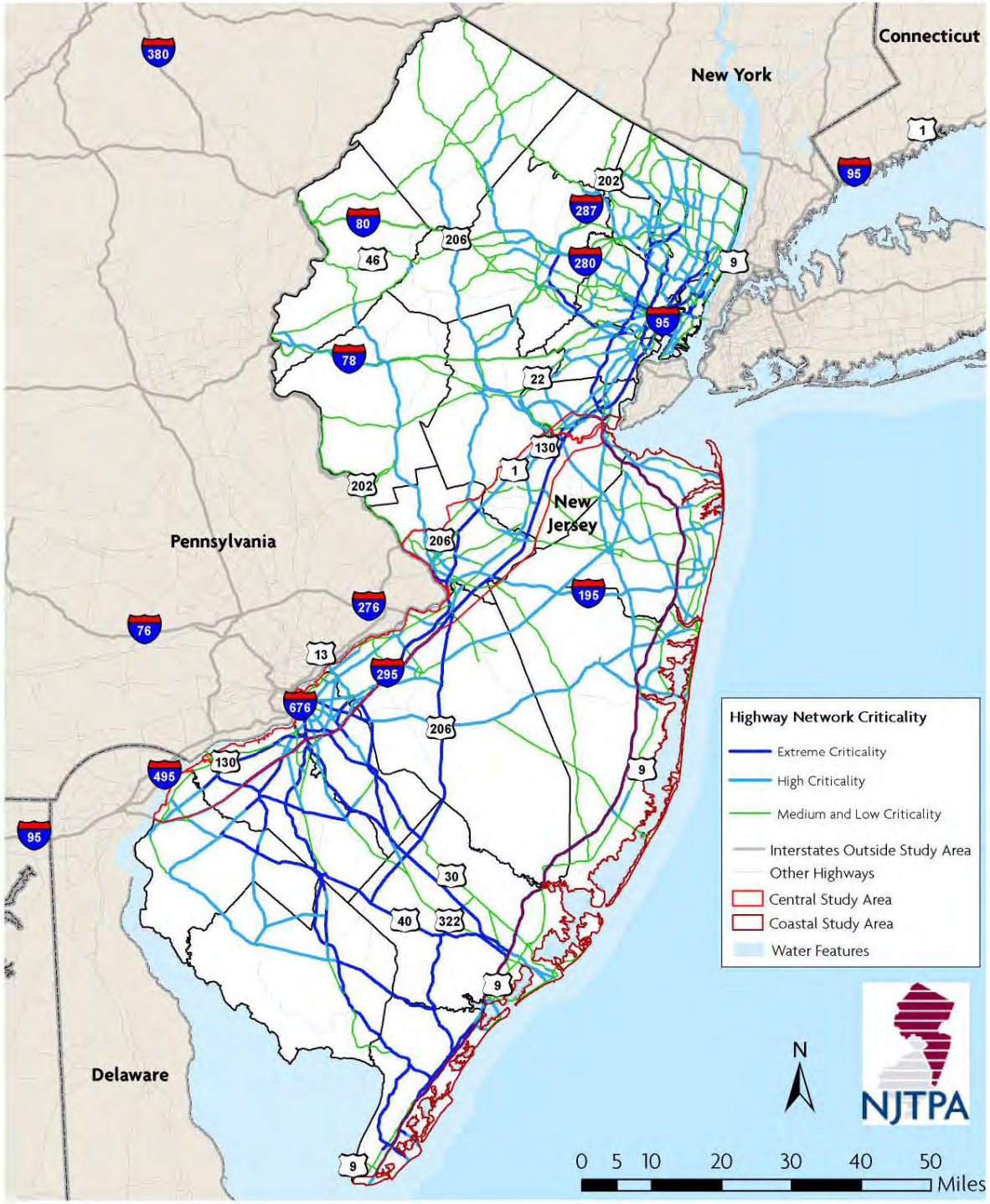
Project Goals

FHWA Conceptual Model




CONNECTICUT
NEW YORK
PENNSYLVANIA
DELAWARE
SUSSEX
PASSAIC
MORRIS
BERGEN
WARREN
HUNTERDON
SOMERSET
ESSEX
HUDSON
UNION
MIDDLESEX
MERCER
MONMOUTH
OCEAN
BURLINGTON
GLOUCESTER
CAMDEN
SALEM
ATLANTIC
CUMBERLAND
CAPE MAY
Trenton
Philadelphia
New York City
Atlantic City
Central Study Area
Coastal Study Area
New Jersey Roadways
Interstates/Toll Roadways
US/State Roadways
Water Features
NJTPA
NORTH JERSEY TRANSPORTATION PLANNING AUTHORITY
N
0 12.5 25 50
Miles
Sources: NJDOT, 2010; NJTPA, 2011; NJDEP, 2008; U.S. Census, 2010


ACCESS & CONNECTIVITY
MAGNITUDE/ DEGREE
REDUNDANCY / CAPACITY
Is asset part of an evacuation route or an emergency or military preparedness plan
ABSO-LUTE
NO
YES
Does asset provide access to critical economic, social, cultural, or natural facilities?
ENHANCED CRITICALITY
YES
NO
YES
Does asset connect communities or businesses with regional or national transportation networks (includes priority corridors)?
Serves disadvantaged population
NO
YES
NO
Does asset play a significant role in climate change/environmental mitigation efforts or plans?
NO
YES
YES assess primary asset
Does asset provide functional redundancy for another asset?
NO
LOW
Functional classification/class
Volumes/ridership
Peak volumes/ridership
Commodity flows and value
HIGH
MED
LOW
'Does another asset(s) provide functional redundancy for this asset?
NO
YES
Does the asset(s) have sufficient capacity to provide redundancy (V/C and/or LOS)
NO
YES
Is redundant asset vulnerable to same climate impacts [FROM VULNERABILITY ASSESSMENT]
YES
vulnerability
NO
REDUCED CRITICALITY
ENHANCED CRITICALITY
FINAL CALCULATION
HIGH
MEDIUM

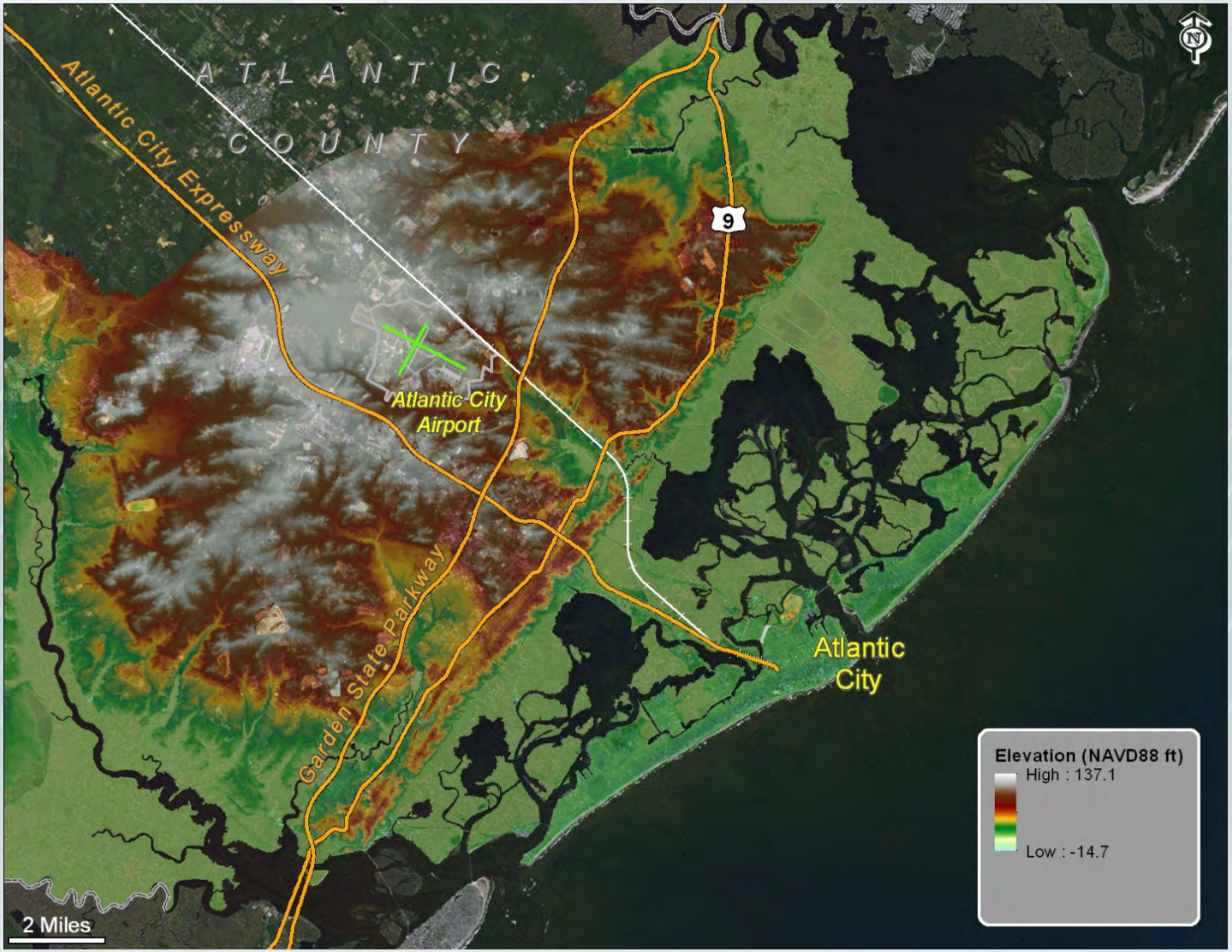

Connecticut
New York
Pennsylvania
New Jersey
Delaware
380
80
78
76
95
287
280
195
276
295
676
495
202
206
46
22
130
1
13
30
40
322
9
Highway Network Criticality
Extreme Criticality
High Criticality
Medium and Low Criticality
Interstates Outside Study Area
Other Highways
Central Study Area
Coastal Study Area
Water Features
N
NJTPA
0 5 10 20 30 40 50
Miles

Determining Climate Impacts

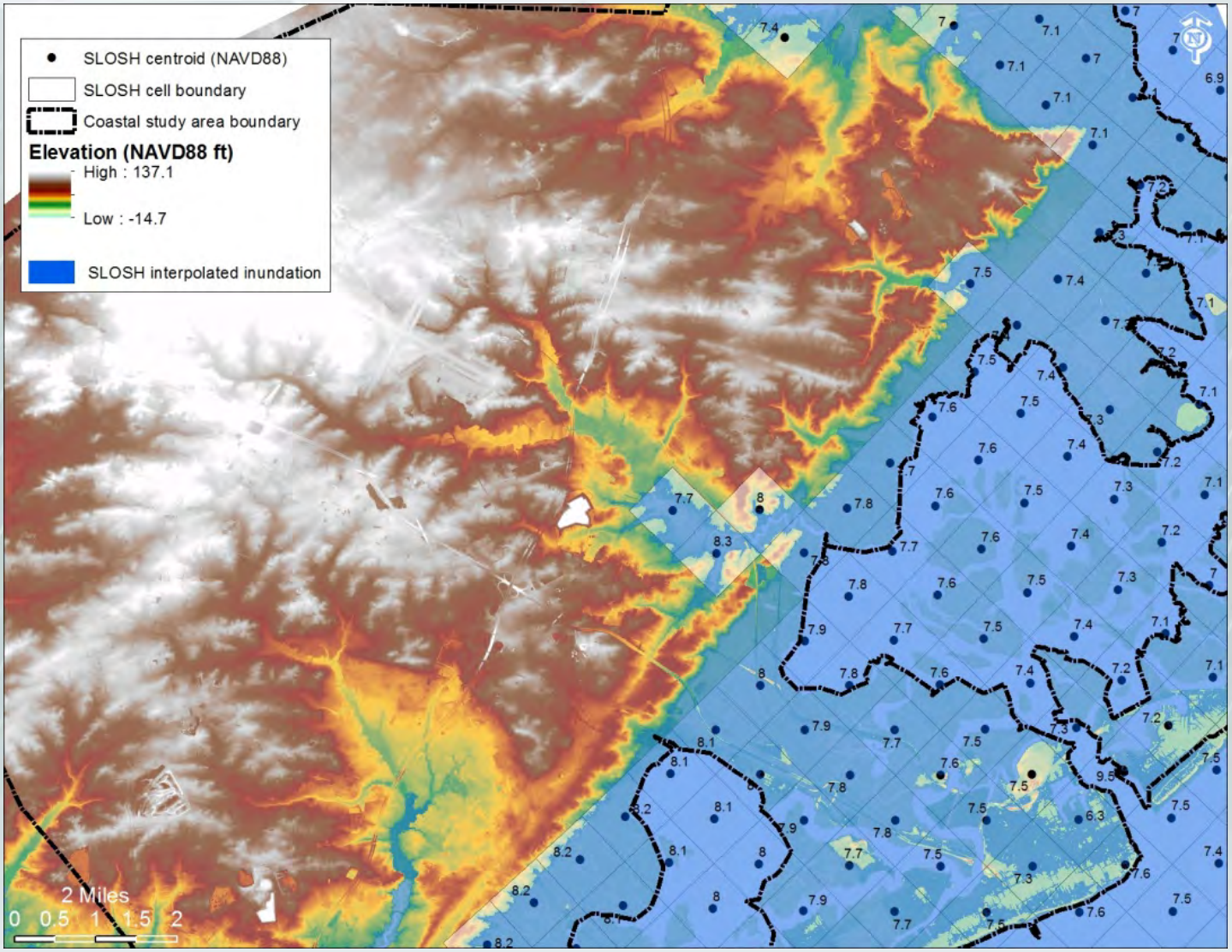
- **Sea Level Rise and Storm Surge**
- **Inland Flooding**
- **Temperature and Precipitation (avg. and extremes)**

Sea Level Rise and Storm Surge

High Resolution LiDAR from USGS



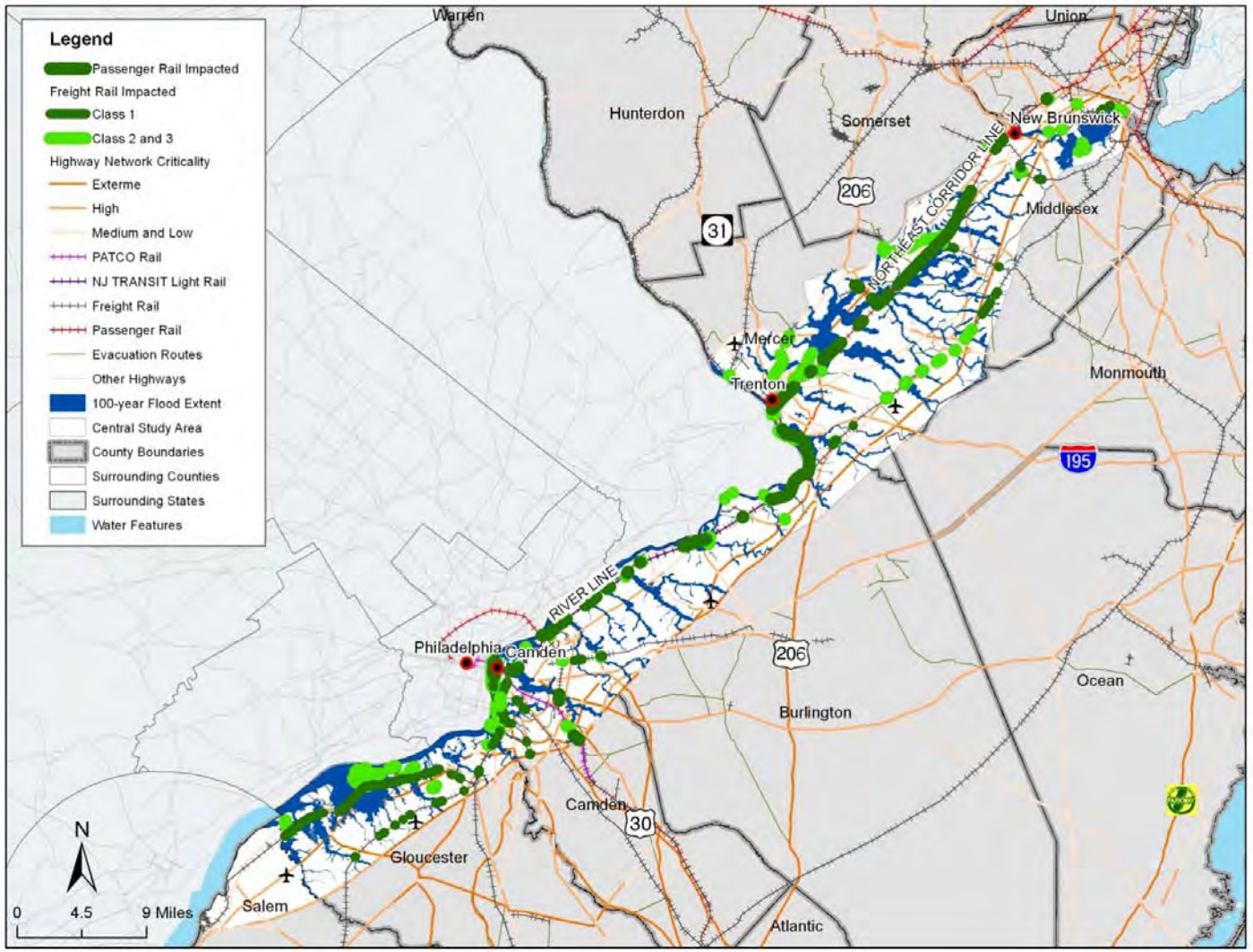
SLOSH Model


SLOSH centroid (NAVD88)
SLOSH cell boundary
Coastal study area boundary
Elevation (NAVD88 ft)
High : 137.1
Low : -14.7
SLOSH interpolated inundation
2 Miles
0 0.5 1 1.5 2

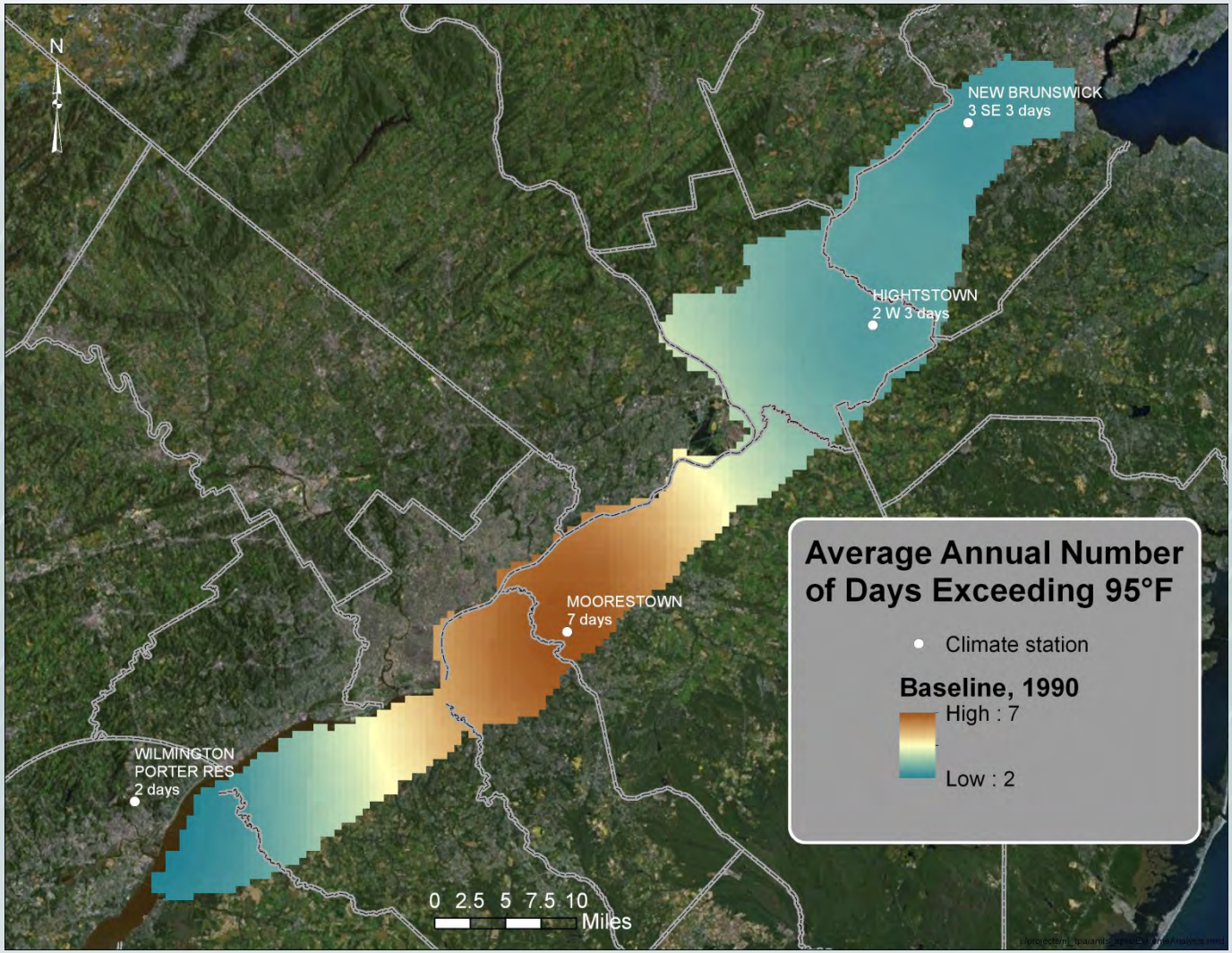
Highways Potentially Vulnerable to Sea Level Rise and Storm Surge

Inland Flooding

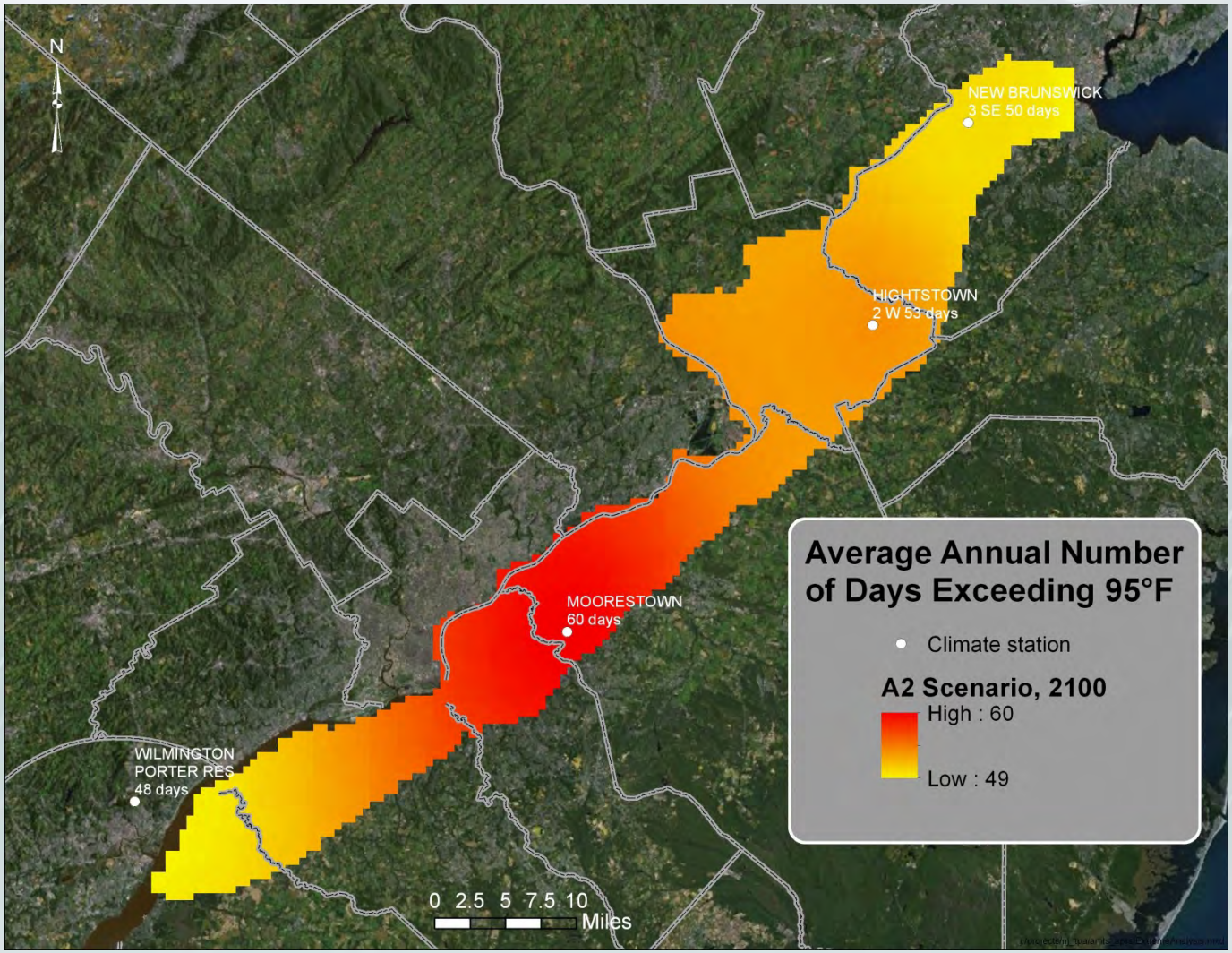
Rail Infrastructure Potentially Vulnerable to 1% Storm Event



Baseline (1990) number of “hot” days



High emissions scenario “hot” days by 2100



Questions

Bordentown Township Redevelopment – Proposed Connector Road

Regional Technical Committee
March 11, 2014

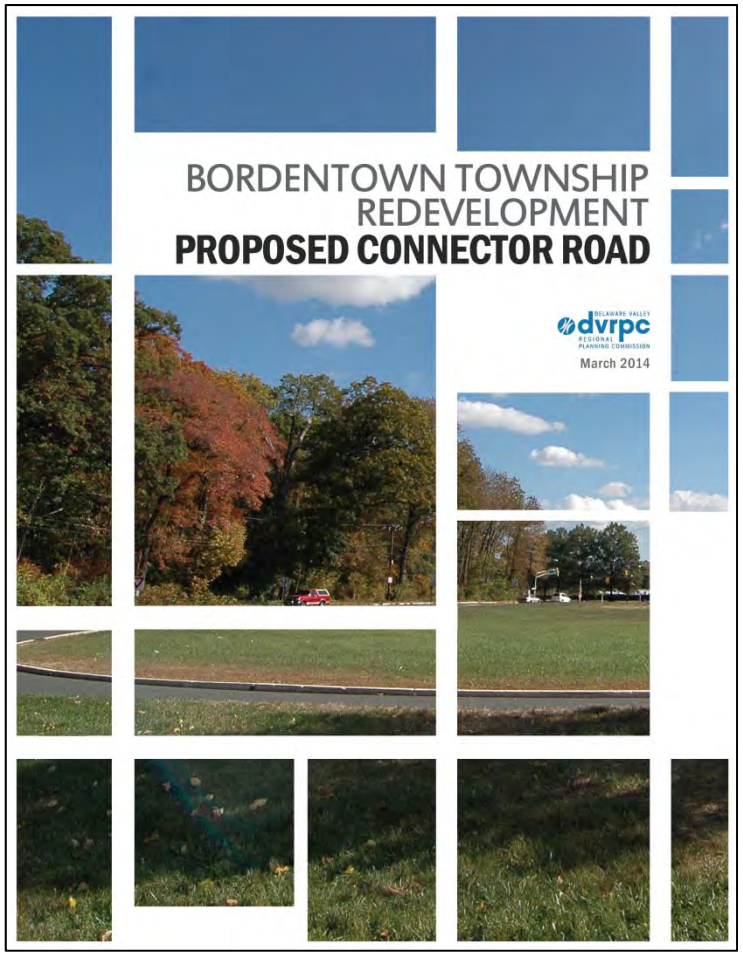
Michael Becker
Senior Transportation Planner

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

Presentation Outline

- Study Area
- Problems/Traffic Issues
- Project Objective
- Project Tasks
  - Data Collection
  - Traffic Safety Analysis
  - Build-out/Trip Generation Analysis
  - Traffic Modeling
  - Intersection Analysis
- Summary of Recommendations

Q & A



Study Area

New Jersey

➡ Burlington County

➡ Bordentown Township

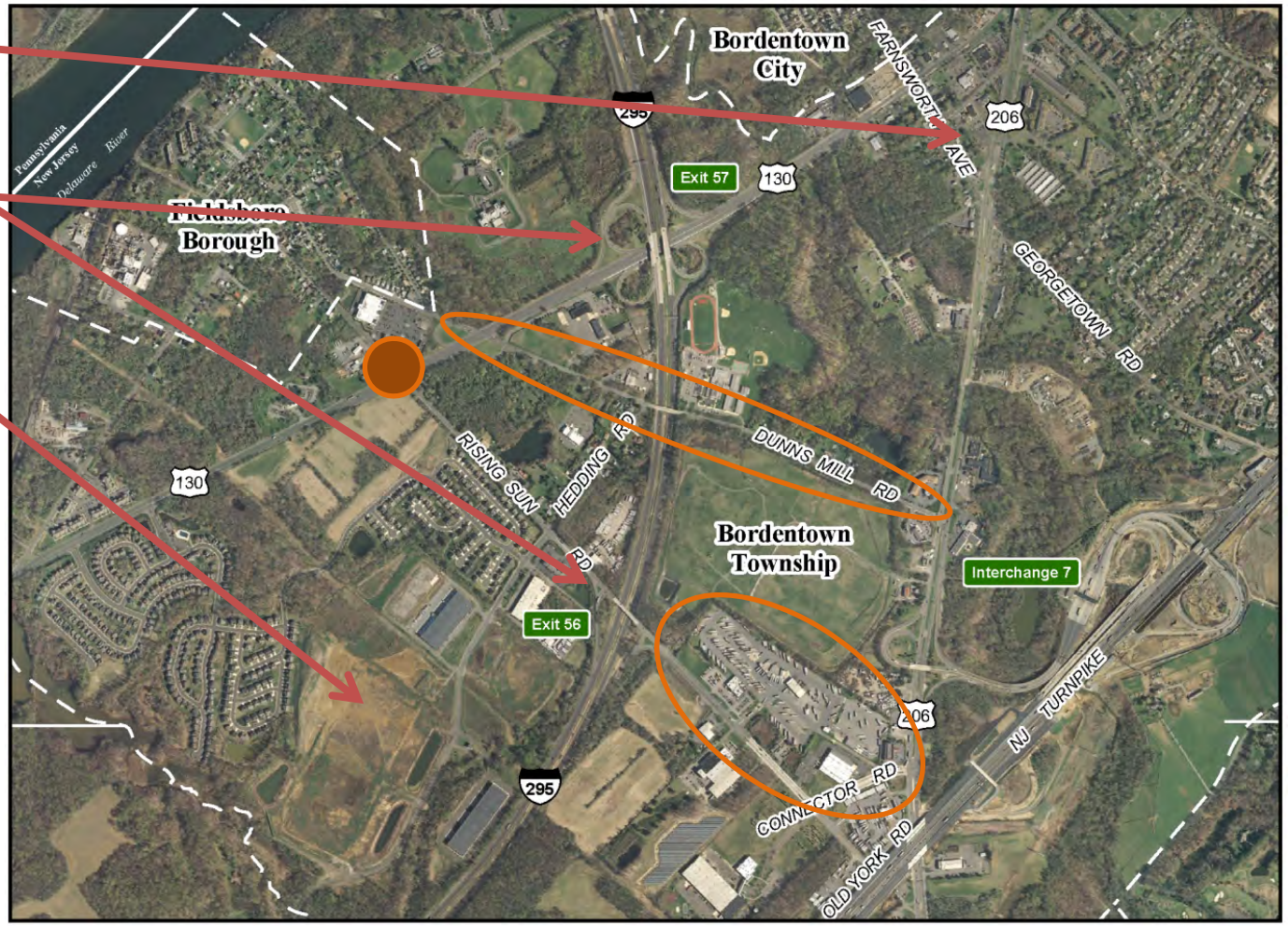
Bordentown Township Redevelopment – Proposed Connector Road

Problems/Traffic Issues

Undesirable truck traffic

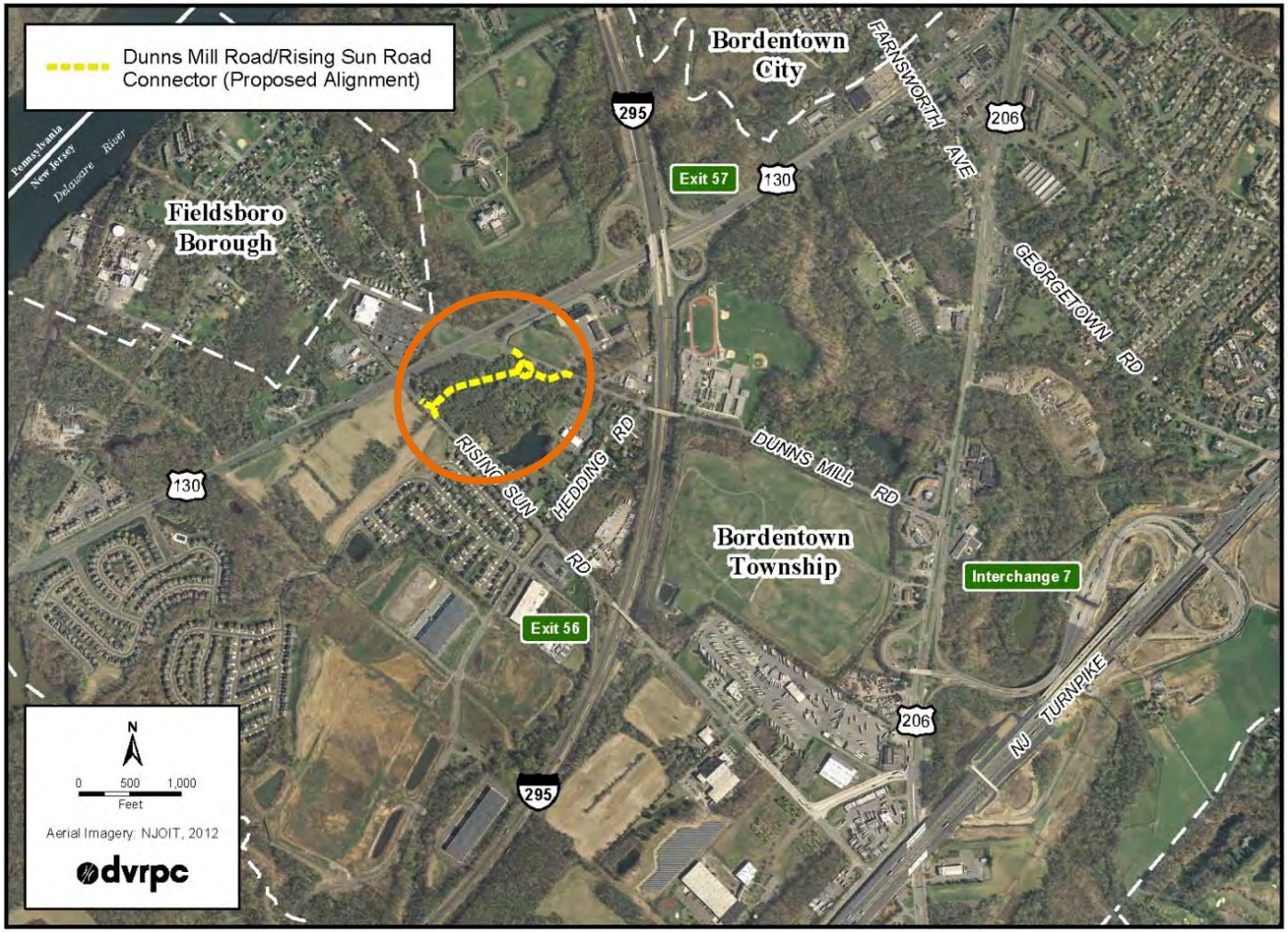
Incomplete interchanges

2.5 million square feet of new warehouse space



Bordentown Township Redevelopment – Proposed Connector Road

Project Objective



Bordentown Township Redevelopment – Proposed Connector Road

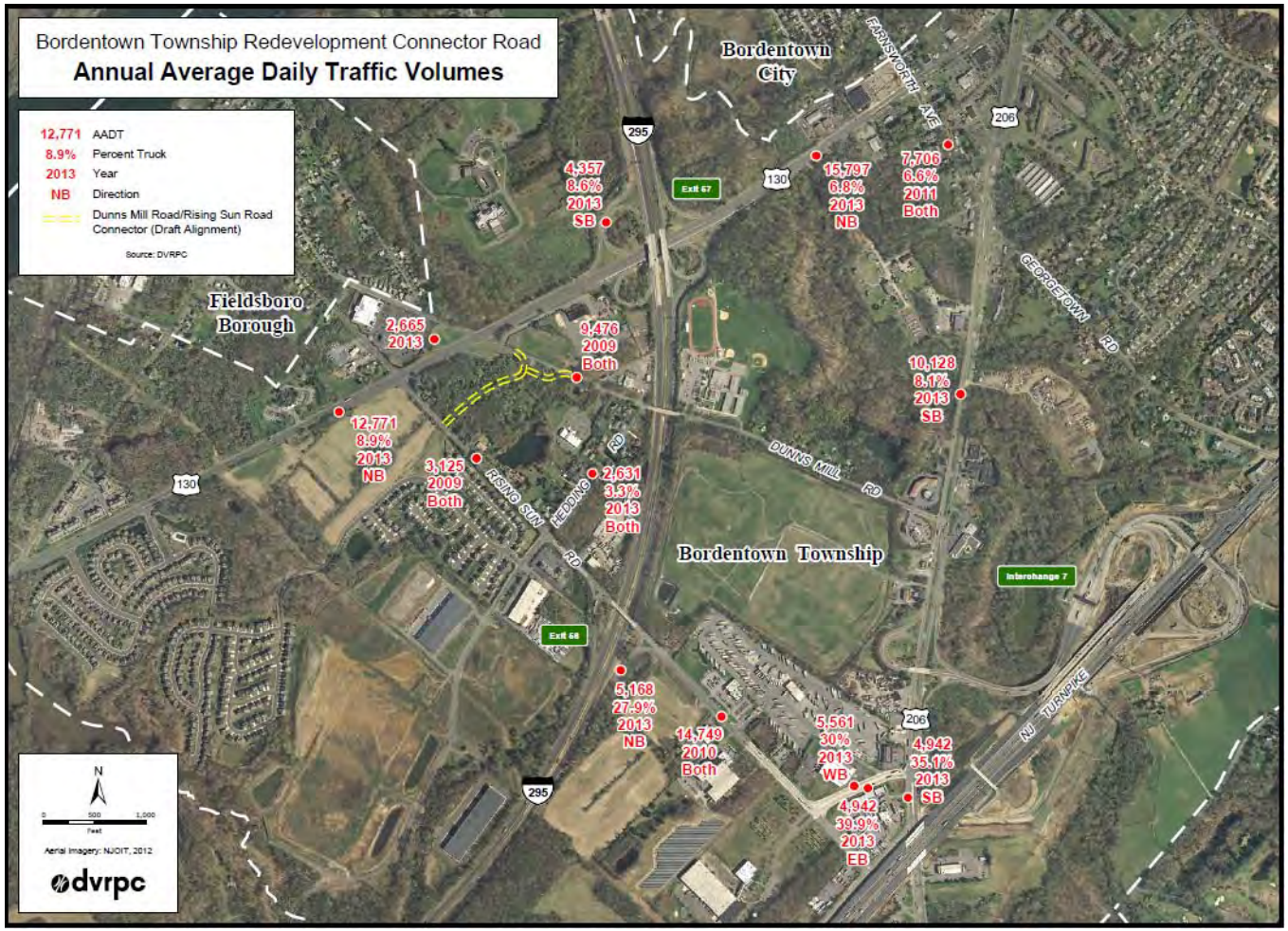
Data Collection

Traffic Counting

- Volume Counts
- Vehicle Classification Counts
- Manual Turning Movement Counts

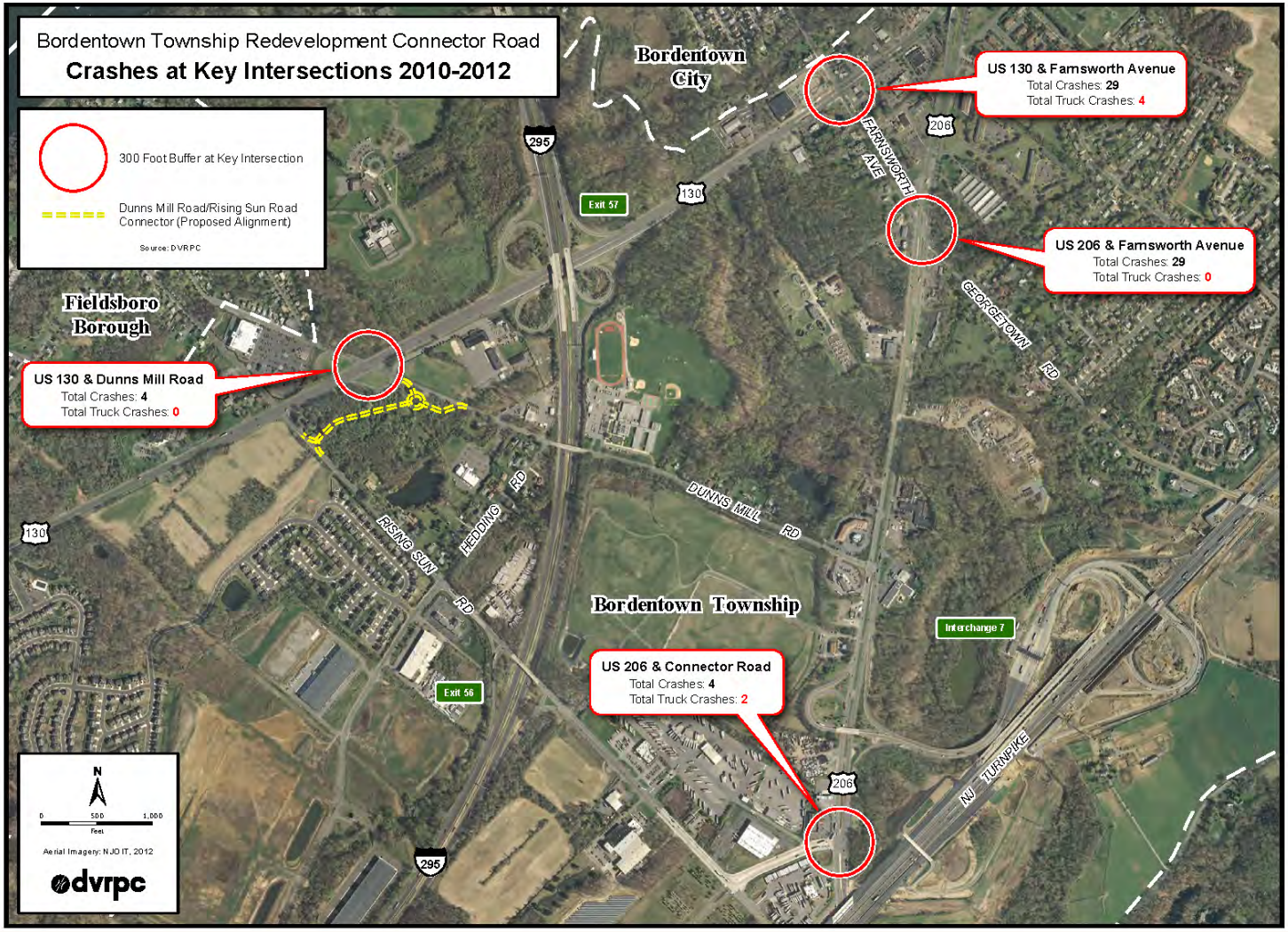
Traffic Signal Timing Plans

Proposed Development Details



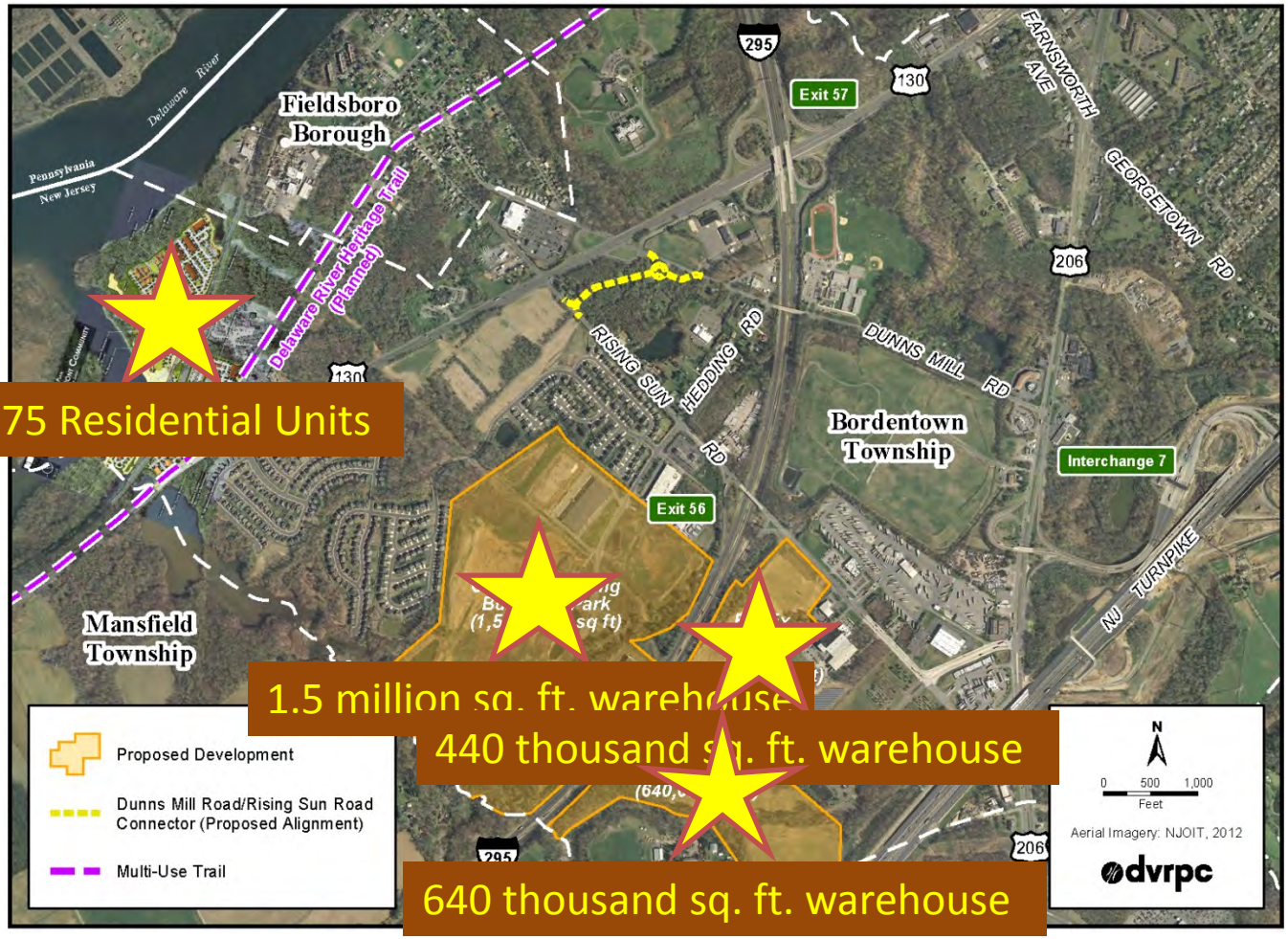
Bordentown Township Redevelopment – Proposed Connector Road

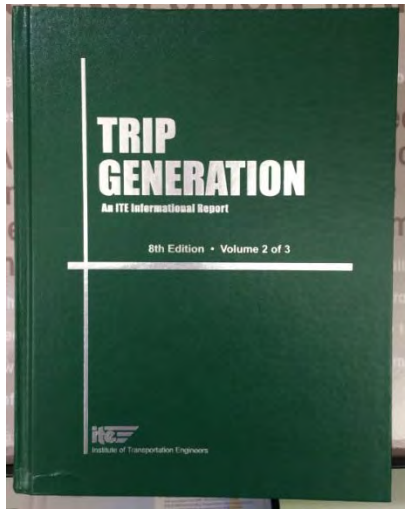
Traffic Safety Analysis



Bordentown Township Redevelopment – Proposed Connector Road

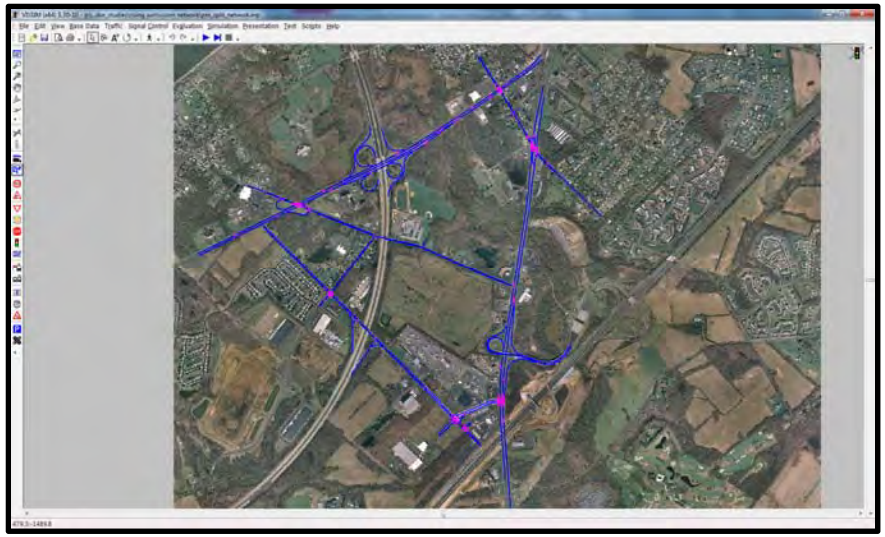
Build-out/Trip Generation Analysis





Bordentown Township Redevelopment – Proposed Connector Road

Traffic Modeling



VISSIM Microsimulation Software

Four Key Intersections

AM (7:15-8:15) and PM (4:45-5:45) Peak Hours

Three Scenarios

- **Existing Condition**
- **2040 No-build**
- **2040 Build**

Intersection Analysis

- Left-turn conflicts (being addressed by NJDOT)
- Inadequate left-turn storage
- High AM traffic volumes, wide intersection
- Jug handle storage capacity concerns for PM peak hour in the Build scenario

Bordentown Township Redevelopment – Proposed Connector Road

Summary of Recommendations

– **Connector Road between Dunns Mill Road and Rising Sun Road**

Bordentown Township Redevelopment – Proposed Connector Road

Summary of Recommendations

- **Connector Road between Dunns Mill Road and Rising Sun Road**

Bordentown Township Redevelopment – Proposed Connector Road

Summary of Recommendations

- **Add missing moves to I-295 Exit 56, Rising Sun Road**

Bordentown Township Redevelopment – Proposed Connector Road

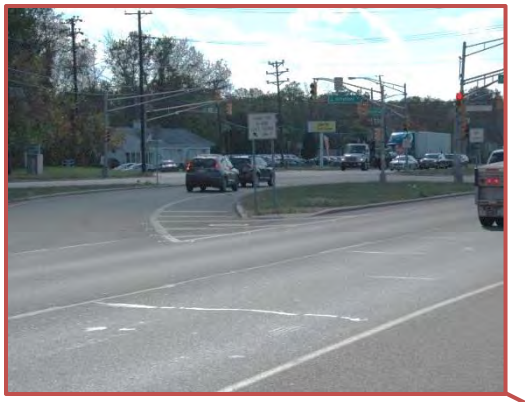
Summary of Recommendations

- Add a second turnpike on-ramp lane for NB US 206 and Connector Road traffic

Bordentown Township Redevelopment – Proposed Connector Road

Summary of Recommendations

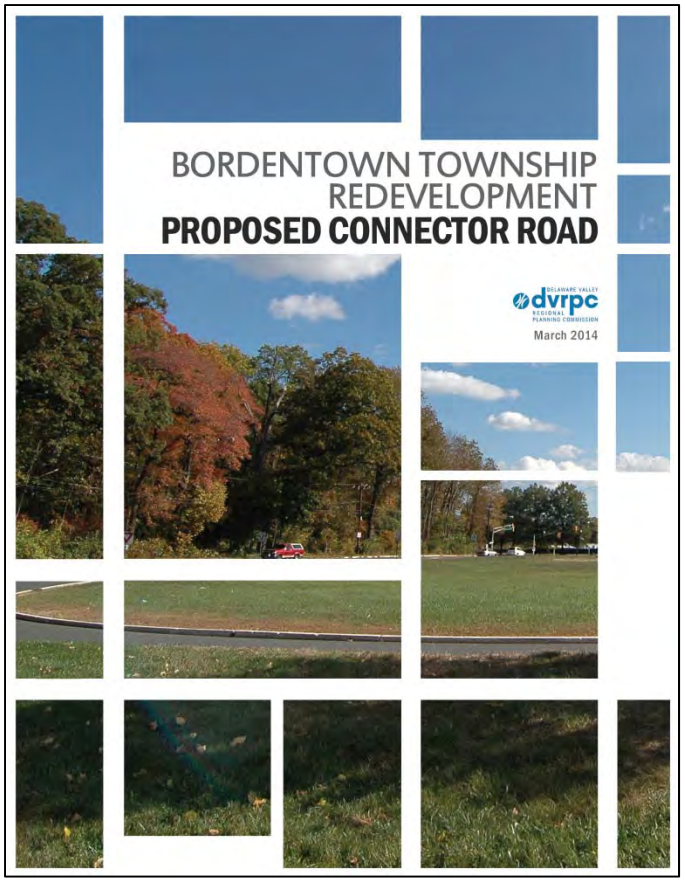
- Lengthen SB US 206 left-turn storage capacity at Farnsworth Avenue (500 feet)



Bordentown Township Redevelopment – Proposed Connector Road

Questions?

Michael Becker
mbecker@dvrpc.org
215.238.2834



MOBILITY ALTERNATIVES PROGRAM

FY 2015 MOBILITY ALTERNATIVES PROGRAM

Presented To:

The DVRPC Regional Technical Committee

March 11, 2014

PENNDOT

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

FY 2015 Grant Request

Background: Program Inception in 1995

MAP is a marketing, education and outreach program to promote TDM to commuters and employers

Seven Contractors

Common Marketing Materials

Share-A-Ride Matching

Air Quality Partnership Outreach

Emergency Ride Home Program

FY 2015 Grant Request

Contractors Include

- Bucks County TMA
- TMA of Chester County
- Delaware County TMA
- Greater Valley Forge TMA
- Partnership TMA
- Clean Air Council
- SEPTA

FY 2015 Grant Request

Work Program Elements for TMAs
and Clean Air Council are focused on reducing SOVs to workplaces.

Contractors work with employers to:

- Develop TDM Programs
- Promote transit use and RideECO to commuters
- Promote TDM on Air Quality Action Days
- Administer Share-A-Ride Program and ERH

FY 2015 Grant Request

Total Available Funding: $816,000 CMAQ

20% contractor match required

Each TMA may apply for up to $67,450

Each TMA's match	$13,490
Clean Air Council:	$77,750
Clean Air Council's match	$15,550
SEPTA :	$150,000
DVRPC:	$251,000

MOBILITY ALTERNATIVES PROGRAM

FY 2015 Grant Request

Selected Targeted Areas

- Bucks County TMA: US 1 Corridor
- TMA of Chester County: 4 Major Employers
- Delaware County TMA: Industrial Highway (RT 291)
- Greater Valley Forge TMA: King of Prussia
- Partnership TMA: Lansdale Borough
- Clean Air Council: Airport and Navy Yard

FY 2015 Grant Request

Electronic Reporting

- All Contractors will report the same data
- DVRPC has created an e-reporting form
- Contractors will report quarterly
- They may report data from TMA and from MAP at the same time
- DVRPC staff will aggregate all data and forward to PennDOT's consultant.

FY 2015 Grant Request

Action Requested

That the RTC recommend DVRPC Board approval of the FY15 Mobility Alternatives Program for a program total of $816,000 ($652,800 CMAQ/$163,200 contractor match).

FY 2015 Grant Request

Action Requested

That the DVRPC Board approve of the FY15 Mobility Alternatives Program for a program total of $816,000 ($652,800 CMAQ/$163,200 contractor match) and forward this approval to PennDOT.

FY 2015 Grant Request

- Comment Period is open until 4Pm on February 21st.
- If you are a member of the RTC you are welcome to comment.
- Full applications will be due to DVRPC on Feb 28th.
- RTC Action will be requested in March 2014.

FY 2015 Grant Request

If you would like to comment

Please contact:

Sarah Oaks

soaks@dvrpc.org

215-238-2856

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

WORK PROGRAM AMENDMENT

March 11th, 2014

Christopher M. Puchalsky, Ph.D.

Norristown High Speed Line Overview

NHSL-Extension Forecasting Work

Forecasting Work Completed –

- Model calibration, including FTA consultation
- Ridership forecasts for 12 alternatives (Current year and 2040)
- Other technical analysis

Forecasting Work Remaining –

- Ridership forecasts for at-grade alternatives
- Ridership forecasts for Tier 3 screening, including FTA approval
- Ridership forecasts using FTA STOPS model

REGIONAL TRANSIT PLANNING PROGRAM

FY2014 update & FY2015 preview

G. Krykewycz, PP, AICP

RTC/RTAC

March 11, 2014

FY2014 Transit Planning Summary

- Total DVRPC (in-house) transit planning budget of $890,000 for FY2014
  - $420,000 RTPP
  - $100,000 NMHSTP
  - $90,000 NJTSP
  - $280,000 PATSP and PennDOT Local Scoping
- Funds a total of 11 DVRPC transit-oriented projects (TOP) across multiple staff units:
  - 4 projects funded through the RTPP
  - 3 projects funded through the NMHSTP
  - 4 projects funded through NJTSP, PATSP, or Local Scoping

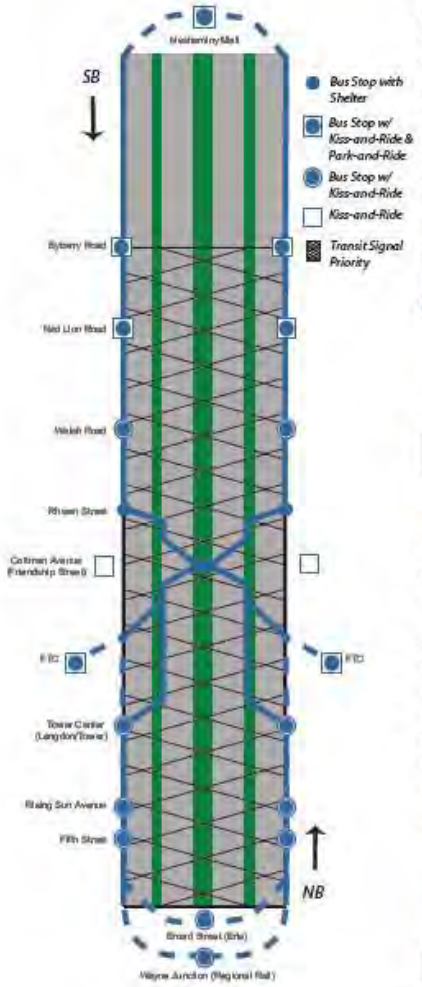
Roosevelt Boulevard Transit Alternatives Development

Fresh look at corridor's transit potential; development of at-grade transit options.

Project outline:

1. Comprehensive evaluation of existing conditions *(shared September 6th)*
2. Project design workshop *(held November 7th)*
3. Development of short-term alternative concepts *(draft shared December 19th)*
4. Next steps: develop detailed conceptual design for Better Bus alternative and evaluate feasibility of separated busway options

STATION AND SERVICE CONCEPT FOR ALTERNATIVE 3



ALTERNATIVE 3: LONG-DISTANCE COMMUTER FOCUS

This alternative focuses on improving service attractiveness and travel times for long-distance commuters. Multiple park-and-ride facilities would be provided to ease drive-up access for inbound commuters from Lower Bucks County and Far Northeast Philadelphia, and kiss-and-ride facilities for easy drop-off access would be provided at these and other stops. Service variations would provide direct connections from these northern park-and-rides to the Broad Street Line (Erie Station), Market-Frankford Line (Frankford T.C.) and frequent Regional Rail (Wayne Junction), enabling high quality rail connections to multiple central job hubs, and free rail transfers would make these connections more attractive. For outbound commuters from Lower North Philadelphia, stops would be located at key transfer nodes like 5th Street as well as at important job centers further north such as Tower Center and Red Lion Road.

Regardless of a rider's direction of commute, wide station spacing, TSP, high quality stations with fare prepayment, and limited inner drive operations as well as queue-jump treatments in select locations will help make their Better Bus trip quick and convenient. Service would operate primarily in the outer lanes of the outer drive, but inner drive operations between Rhawn Street and Tower Center offer some additional travel time savings. The concept shown here reflects the inclusion of one inner median "super station" just south of Cottman Avenue. Service would be available all day but concentrated in the peak period, with each route variant (Erie Station, Frankford T.C., and Wayne Junction) having 10-minute peak headways, resulting in 3-4 minute shared headways at intermediate stops.

CROSS SECTION FOR ALTERNATIVE 3

This cross section below shows the enhanced shelters and high-visibility, branded signage and vehicles with wraps that are envisioned for Alternative 3.

ALTERNATIVE 4: COMMUNITY & ECONOMIC DEVELOPMENT FOCUS

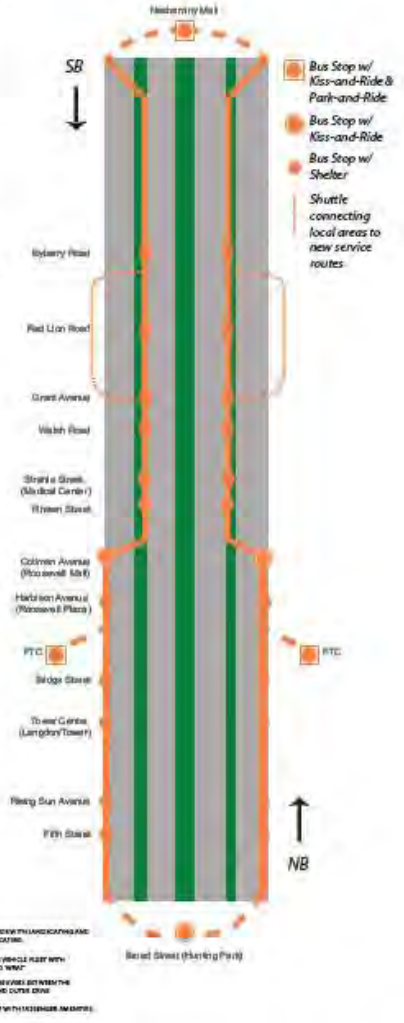
This alternative focuses on community connectivity and local mobility. Stations are more frequently spaced than Alternative 3, in order to increase the number of locations where they can be leveraged for local economic development. Each station also serves as a local pedestrian node, and is supported by complementary pedestrian infrastructure such as enhanced crosswalks.

Similar to Alternative 3, high quality stations with fare prepayment, partial inner drive operabons, and queue-jump treatments in select locations will help make riders' trips along the corridor quick and convenient. Alternative 4 enhances broader corridor mobility by linking stations with off-corridor commercial centers (such as the Northeast Airport) using new circulator/shuttle options or with other local buses that serve this purpose. Service would operate in the outer lanes of the outer drive south of Cottman Avenue, and in the outer lanes of the inner drive further north. Partial inner drive operations offer the potential for some time savings, better service differentiation, and better future proofing for a later phase inner drive fixed guideway. Service levels would be consistently high all day, with each of the service's two southern termini (Hunting Park Station and FTC) having 10-minute all day headways, resulting in roughly 5-minute all day headways for shared stations.

CROSS SECTION FOR ALTERNATIVE 4

This cross section shows the enhanced shelters and high-visibility, branded signage and vehicles (or vehicle wraps) that are envisioned for Alternative 4. Stops are shown in the outer median for this typical cross section for points north of Cottman Avenue.

STATION AND SERVICE CONCEPT FOR ALTERNATIVE 4

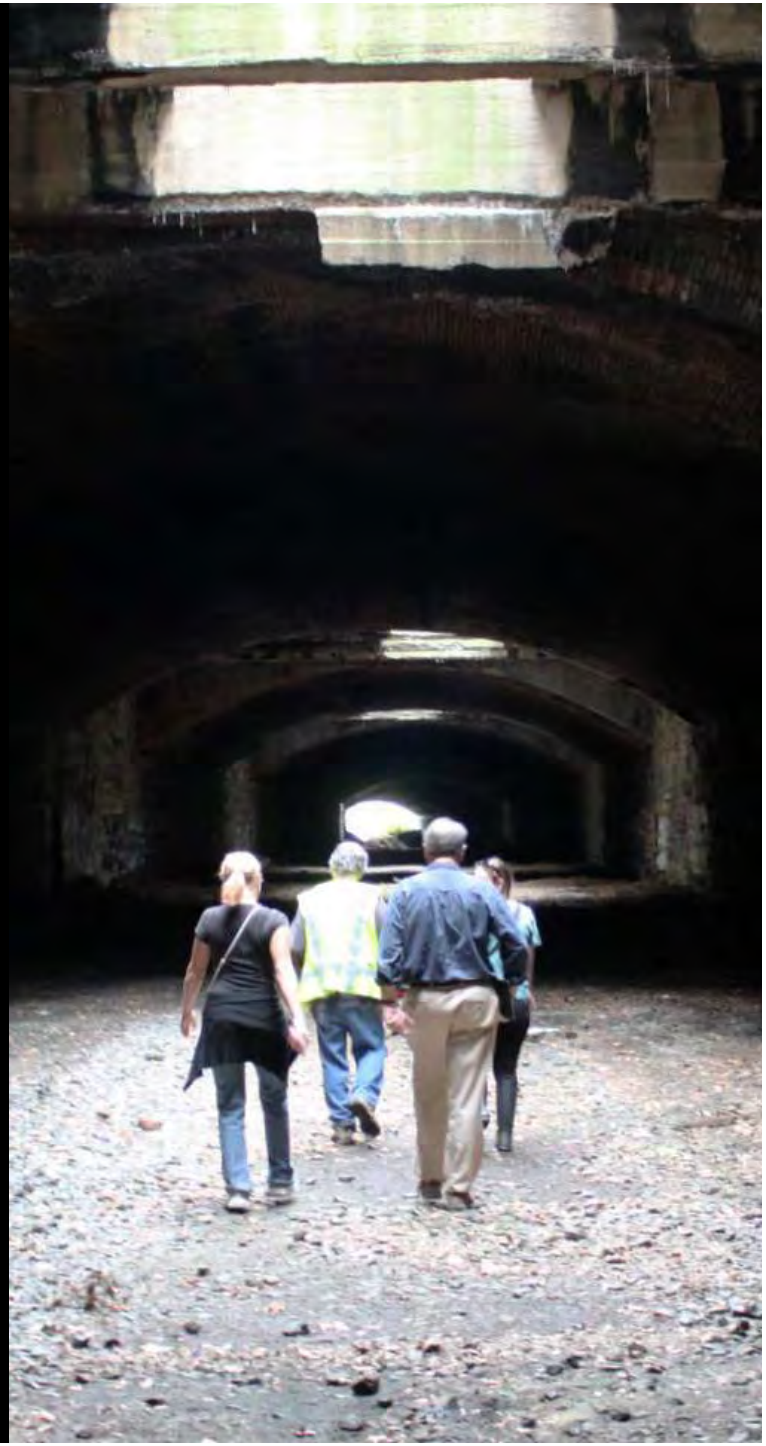


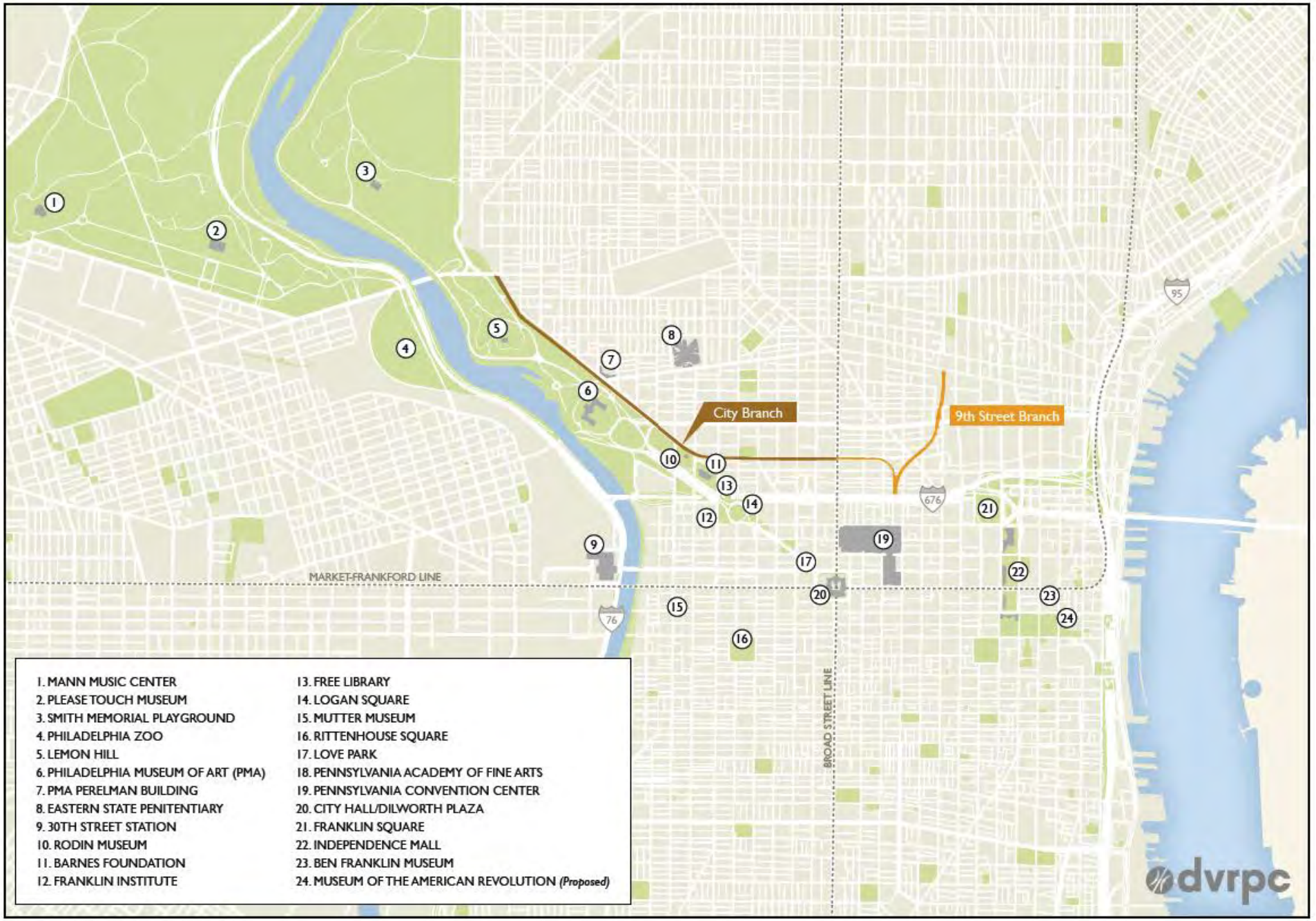
City Branch Transit Feasibility

Evaluate transit usefulness of below-grade SEPTA-owned ROW west of Broad Street.

Project outline:

1. Inventoried existing conditions: prior studies, current bus service, pending development *(shared Jan. 15th)*
2. Series of stakeholder interviews to explore opportunities *(Jan. 15th-24th)*
3. Creating neighborhood and tourist profiles to spatially describe transit needs for affected groups *(ongoing)*
4. Next steps: evaluate re-routing and/or additional limited stop routes that could make use of CB with SEPTA staff




City Branch
9th Street Branch
MARKET-FRANKFORD LINE
BROAD STREET LINE
95
676
76
1. MANN MUSIC CENTER
2. PLEASE TOUCH MUSEUM
3. SMITH MEMORIAL PLAYGROUND
4. PHILADELPHIA ZOO
5. LEMON HILL
6. PHILADELPHIA MUSEUM OF ART (PMA)
7. PMA PERELMAN BUILDING
8. EASTERN STATE PENITENTIARY
9. 30TH STREET STATION
10. RODIN MUSEUM
11. BARNES FOUNDATION
12. FRANKLIN INSTITUTE
13. FREE LIBRARY
14. LOGAN SQUARE
15. MUTTER MUSEUM
16. RITTENHOUSE SQUARE
17. LOVE PARK
18. PENNSYLVANIA ACADEMY OF FINE ARTS
19. PENNSYLVANIA CONVENTION CENTER
20. CITY HALL/DILWORTH PLAZA
21. FRANKLIN SQUARE
22. INDEPENDENCE MALL
23. BEN FRANKLIN MUSEUM
24. MUSEUM OF THE AMERICAN REVOLUTION (Proposed)
dvrpc

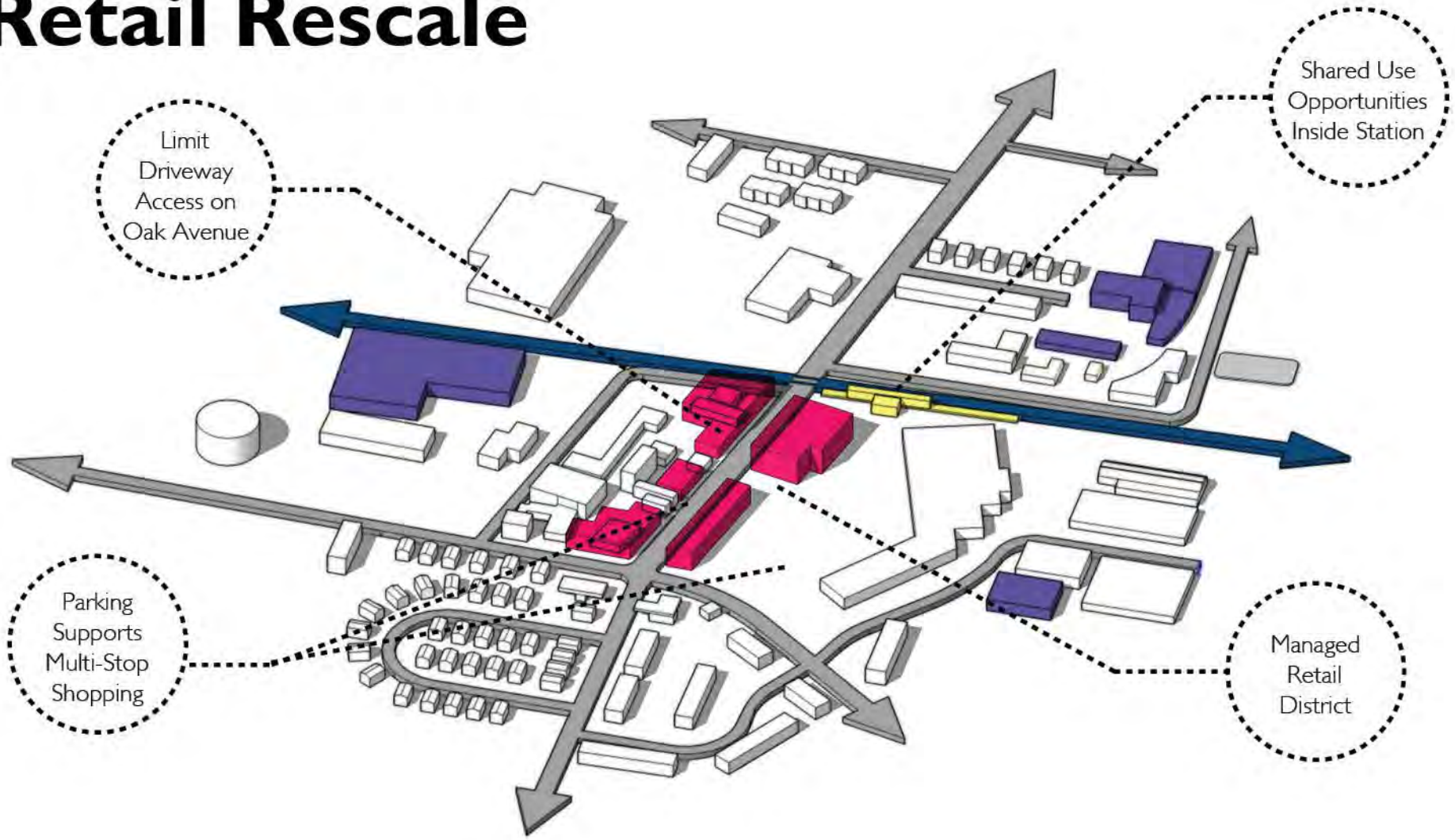
Primos Station Area Access and Development Opportunities

Evaluate station access and safety enhancements as well as area development opportunities; SEPTA has recently added parking and express service.

Project outline:

1. Station shed analysis and project newsletter *(shared Nov. 27th)*
2. Existing conditions analysis and stakeholder visioning workshop *(January 9th)*
3. Development of initial alternatives for discussion *(shared March 7th)*
4. Next steps: Additional outreach to local businesses; develop framework plan as basis for draft report

Retail Rescale



Infill Development Opportunities

Adaptive Reuse Opportunities

PATCO Concourse Bike Parking Assessment

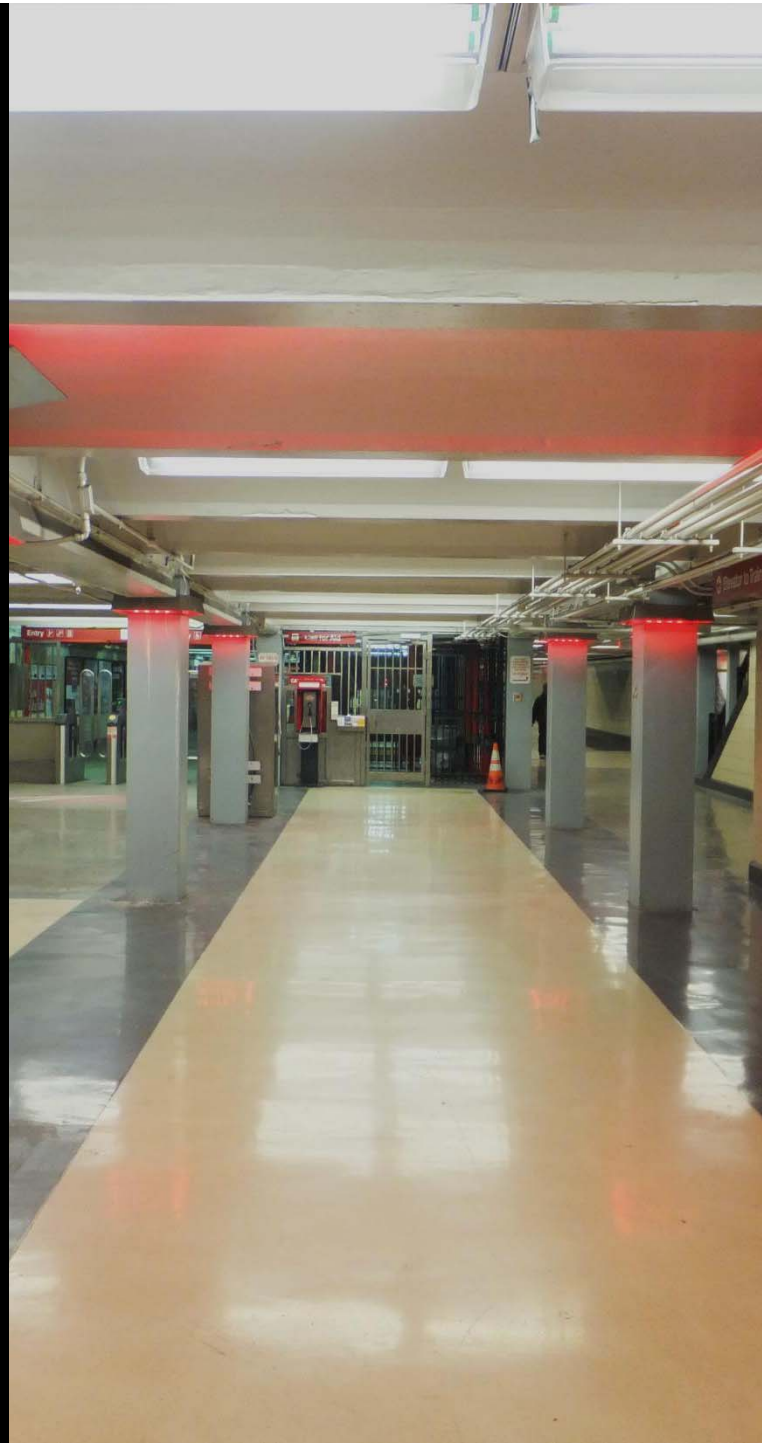
Evaluate the suitability for, and placement of, underground bicycle parking at PATCO's four Center City stations.

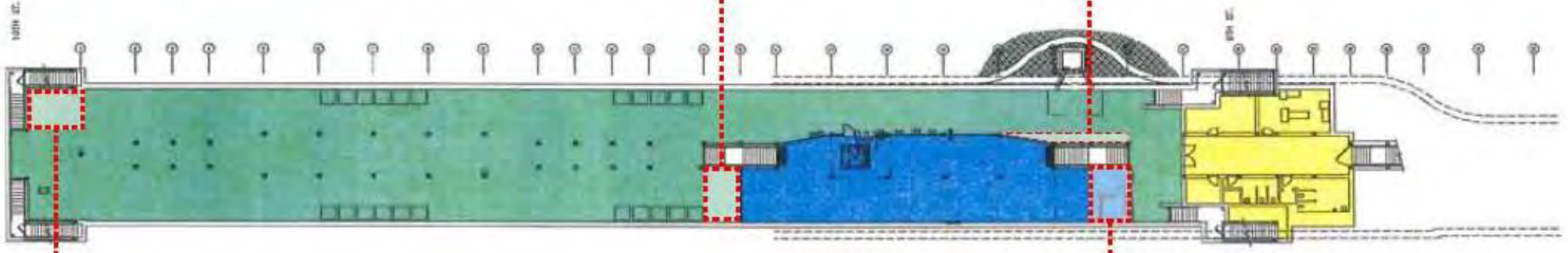
Project outline:

1. Survey PATCO stations and document characteristics including available space, lighting, and location of stairs and elevators (completed).

2. Use characteristics & measurements to recommend where bicycle racks would be most suitable (in process).

3. Next steps: combine recommendations and information about complementary measures into a memo to be used by PATCO to guide bike rack installation.





LEASED SPACE – PATIO MAINTAINED PAD AREA – 2,500 S.F.

LEASED AREA – PATIO MAINTAINED SPACE – CLOSED TO PUBLIC – 1,750 S.F.

LEASED SPACE – PATIO MAINTAINED UNPAD SPACE – 10,870 S.F.

EXTERIOR STAIRS – 130 S.F.

Status of Other FY2014 Work

- South Philly Trackless Trolley Feasibility Assessment
  - Reviewing previous SEPTA analysis along with similar analyses from peer agencies. Will be scheduling a meeting to finalize the scope of analysis soon.

- Improving Nonmotorized Access to Rail Stations on the I95 Corridor
  - Existing conditions of rail corridor and station areas documented, currently evaluating opportunities to improve bicycle and pedestrian connections to five Trenton Line stations.

- Transit First Data Collection
  - Ongoing analysis in support of advancing TSP corridors (Routes 6, 60, 58).

Status of Other FY2014 Work

- Safe Routes to Transit: Princeton Junction, Pennsauken, and Lindenwold
  - Evaluating existing conditions and planned improvements in each station area, and will soon begin identifying deficiencies and formulating recommendations.

- Mercer County Transit Signal Priority Assessment: Phase II
  - Selected a corridor in downtown Trenton for detailed operational analysis; currently collecting data and building an operations model in VISSIM.

- Gloucester County United We Ride (UWR) Plan
  - Coordinated county plan update working with county staff; draft plan is complete and awaiting adoption.

- CHSTP Management & Coordination
  - Reduced role for DVRPC in project selection; transitioning to new role and plan update platform.

Summary of FY2015 Funding Allocated To Date

- Modern Trolley Stop Design Guidelines (City of Philadelphia) –
  PA TSP: $93,680
- Trail Access to Wawa Regional Rail Station (Delaware County) –
  BPPP: $70,000
- SEPTA Airport Line to PHL Enhancements Study (SEPTA) –
  SEPATA: $80,000
- South Jersey Park-and-Ride Capacity Evaluation (NJ TRANSIT) –
  NJ TSP: $85,000
- South Jersey Transit Signal Priority Analysis (NJ TRANSIT) –
  NJ TSP: $60,000

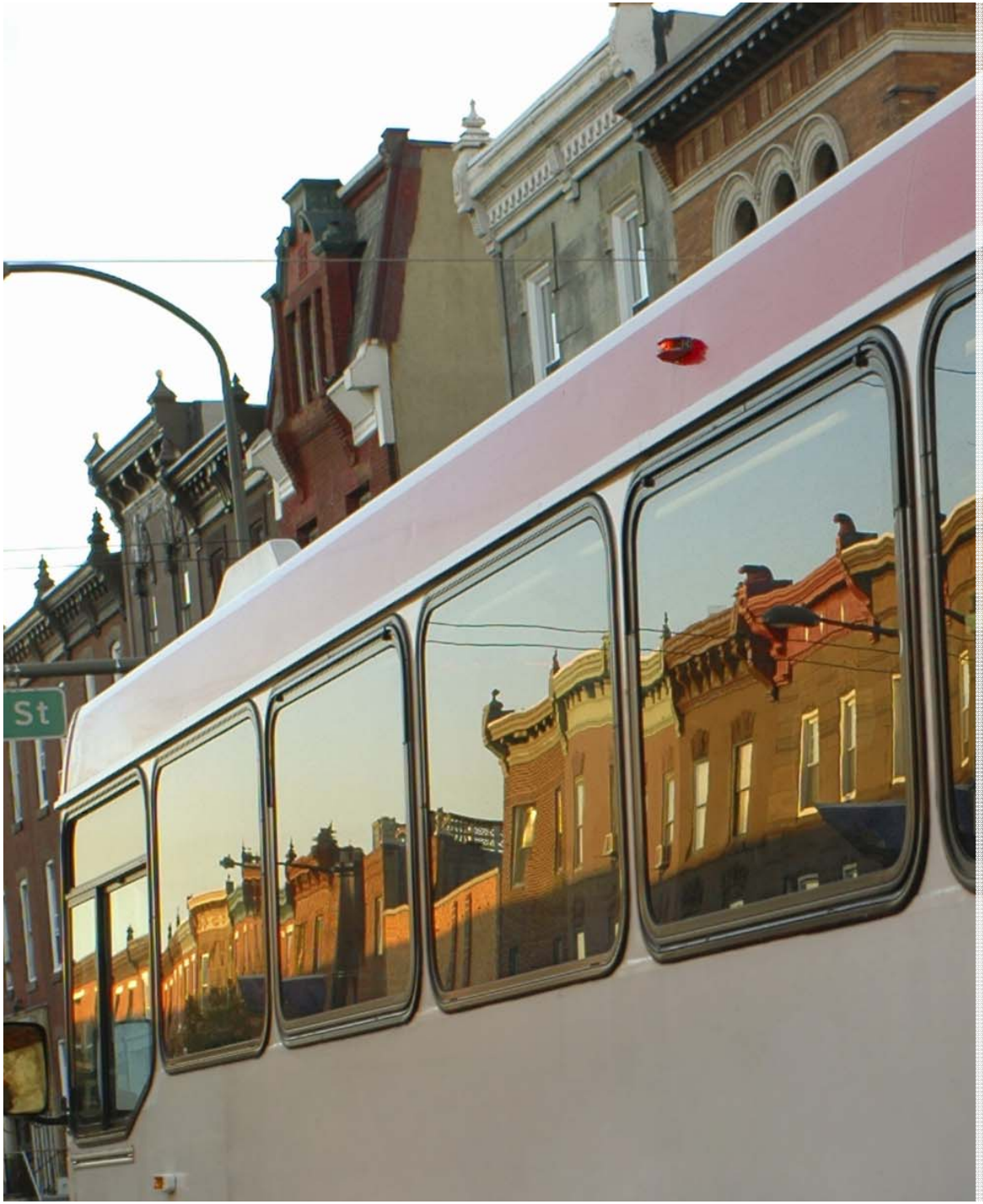
Pending FY2015 RTAC Call for Projects

- RTPP and BPPP can accommodate additional transit-oriented projects to be conducted by DVRPC staff (not pass through)

- Work can range from data collection/analysis to station-area planning, to facility design (can involve staff from across the agency)
  – *when in doubt, submit it!*

- Call for projects will be shared with the RTAC by email on/around May 1st.

- Will work to accommodate as many ideas as possible with balance across the region (selection may require RTAC prioritization).



REGIONAL TRANSIT PLANNING PROGRAM

FY2014 update & FY2015 preview

G. Krykewycz, PP, AICP

RTC/RTAC

March 11, 2014

March 2014

★TIP A-C-T-I-O-N-S

Transportation Improvement Program

New Jersey (FY2014-2017)
Pennsylvania (FY2013-2016)

DELAWARE VALLEY
dvrpc
REGIONAL
PLANNING COMMISSION

Additional State Revenue - PA

a. Approval of Act 89 FY14 Additional State Revenue Projects and Studies, Various Counties

- *Approve list of projects and studies selected as part of additional state revenue (Act 89) for FY14.*
- *Amend the TIP for Pennsylvania by adding new projects and new breakout projects to the TIP in FY14, as well as modify the TIP by adding a project phase, increasing project cost, and advancing a project phase for other projects.*

Additional State Revenue - PA

- *Act 89 of 2013 is the PA transportation funding law that provides much needed funding for the state's roads and bridges as well as transit systems.*
- *Act 89 will generate an additional $2.3 billion annually by the fifth year of the program for the Commonwealth's highway, bridge, public transit, local government, port, aviation, and other intermodal infrastructure systems.*
- *Act 89 eliminated the state retail gas tax paid at the pump starting January 1, 2014 and replaced it with an equivalent increase in the Oil Company Franchise Tax (OCFT).*
- *Removed the cap on the OCFT in thirds over five years.*
- *$99,783,000 made available in FY14(2 years of funding) to advance projects that will be let by the end of 2014.*
- *Projects chosen based on let dates*

Additional State Revenue - PA

- Four new projects totaling $20,000,000 Act 89 State funds for construction in FY14 will be amended to the FY2013-2016 TIP for Pennsylvania:

  1. *Adjacent Box Beam Group J, Bucks, Delaware, and Montgomery Counties, $6,000,000*
  2. *Bridge Rehabilitation Group G, Chester County, $4,000,000*
  3. *Culvert Replacement Group K, Bucks County, $5,000,000*
  4. *Culvert Replacement Group L, Chester, Delaware, and Montgomery Counties, $5,000,000*

- Six new studies in Bucks and Montgomery Counties for Route 611 will be amended to the FY2013-2016 TIP for Pennsylvania using $300,000 Act 89 State funds in FY14:

  1. *Route 611 & County Line Study, Bucks County - $50,000*
  2. *Route 611 & Street Road Study, Bucks County- $50,000*
  3. *Route 611 & Bristol Road Study, Bucks County- $50,000*
  4. *Route 611 & Adaptive Signals Study, Bucks County- $50,000*
  5. *PA Turnpike at Route 611 Study, Montgomery County- $50,000*
  6. *Route 611 Corridor Study, Montgomery County- $50,000*

Additional State Revenue - PA

- Five existing TIP projects in Bucks, Chester, Montgomery, and Philadelphia Counties will be advanced with $79,984,000 State Act 89 funds FY14:

1. *West Maple Avenue Bridge Over Neshaminy Creek, Bucks County, $8,250,000*
2. *US 422, Schuylkill River Bridge Over Schuylkill River (M2A-Stowe), Chester and Montgomery Counties, $51,039,000*
3. *Holme Avenue Bridges (2) Over Roosevelt Boulevard, City of Philadelphia, $11,670,000*
4. *Spring Garden Over Schuylkill (Bridge), City of Philadelphia, $8,525,000*
5. *JFK Boulevard Bridges (3) Over 21st/22nd/23rd Streets, City of Philadelphia, $500,000*

Additional State Revenue - PA

- Two new breakout projects will be added, and advanced with State and Federal funds that are freed up by the additional Act 89 revenue in FY14 funding:

1. *PA 309 Environmental Mitigation, Montgomery County, $650,000*
   - *Breakout project from three PA 309 projects.*
   - *Wetland restoration along the PA 309 corridor in Lower Gwynedd, Upper Dublin, Cheltenham, Springfield, Whitemarsh, Horsham, and Montgomery Townships were not properly restored during the PA 309 projects construction.*
   - *Funds will be used for construction of wetland restoration.*

Additional State Revenue - PA

2. *US 202 Over Amtrak in West Whiteland Township, Chester County, $16,000,000 for FY14, FY15, and FY16 construction*
   - *Breakout project from the US 202, Exton Bypass to Route 29 (Section 330-Mainline),*
   - *Construction programmed in FY14 for $7,086,000 NHPP; in FY15 for $4,665,000 NHPP; and in FY16 for $4,249,000 NHPP.*
   - *Project will involve bridge deck replacement and substructure rehabilitation*

★TIP A-C-T-I-O-N | PROPOSED-PA

a. *Approval of Act 89 FY14 Additional State Revenue Projects and Studies, Various Counties*

- *Approve list of projects and studies selected as part of additional state revenue (Act 89) for FY14 in the amount of $99,783,000.*

- *Amend theTIP for Pennsylvania by adding new projects to the TIP in FY14 funded via Act 89*

- *Adjacent Box Beam Group J, Bucks, Delaware, and Montgomery Counties, $6,000,000*
- *Bridge Rehabilitation Group G, Chester County, $4,000,000*
- *Culvert Replacement Group K, Bucks County, $5,000,000*
- *Culvert Replacement Group L, Chester, Delaware, and Montgomery Counties, $5,000,000*
- *Six new studies in Bucks and Montgomery Counties for Route 611, $300,000*

TIP A-C-T-I-O-N | PROPOSED-PA

- Modify five existing TIP projects in Bucks, Chester, Montgomery Counties and the City of Philadelphia and total $79,984,000 Act 89:
  - *West Maple Avenue Bridge Over Neshaminy Creek, $8,250,000 Act 89*
  - *US 422, Schuylkill River Bridge Over Schuylkill River (M2A-Stowe) $51,039,000 Act 89*
  - *Holme Avenue Bridges (2) Over Roosevelt Boulevard, $11,670,000 Act 89*
  - *Spring Garden Over Schuylkill (Bridge) $8,525,000 Act 89*
  - *JFK Boulevard Bridges (3) Over 21st/22nd/23rd Streets, $500,000 Act 89*

b. Amend two new breakout projects which will be advanced with State and Federal funds that are freed up by the additional Act 89 revenue in FY14 funding previously noted projects:

- *PA 309 Environmental Mitigation, $650,000 State highway funds*
- *US 202 Over Amtrak $16,000,000 NHPP for FY14, FY15, and FY16 construction*

Add Proposed New Project - PA

b. All-Weather Pavement Markings Program 2014, Various Counties

- *Amend the TIP for Pennsylvania by adding a new $380,000 NHPP funded project for construction in FY14.*
- *Region has been allocated $380,000 NHPP funds from the Statewide All-Weather Pavement Markings (AWPM) Reserve Line Item for FY14. These are additional funds to the region. $4,000,000 Statewide.*
- *Installation and maintenance of AWPMs on all Interstate highways and other State roadways at locations determined by PennDOT, including Preformed Wet Reflective Striping tape (PWRST), Grooved in Triple Drop durable markings, as well as Recessed Pavement Markings (RPM) (for existing locations only). Provide critical, visual guidance to all motorists travelling on PA interstates and freeways.*

TIP A-C-T-I-O-N | PROPOSED-PA

b. All-Weather Pavement Markings Program 2014, Various Counties

- Add a new $380,000 NHPP funded project for construction in FY14.

Add Proposed New Projects - PA

c. Statewide Highway Safety Improvement Program (HSIP) Funding, Various Counties

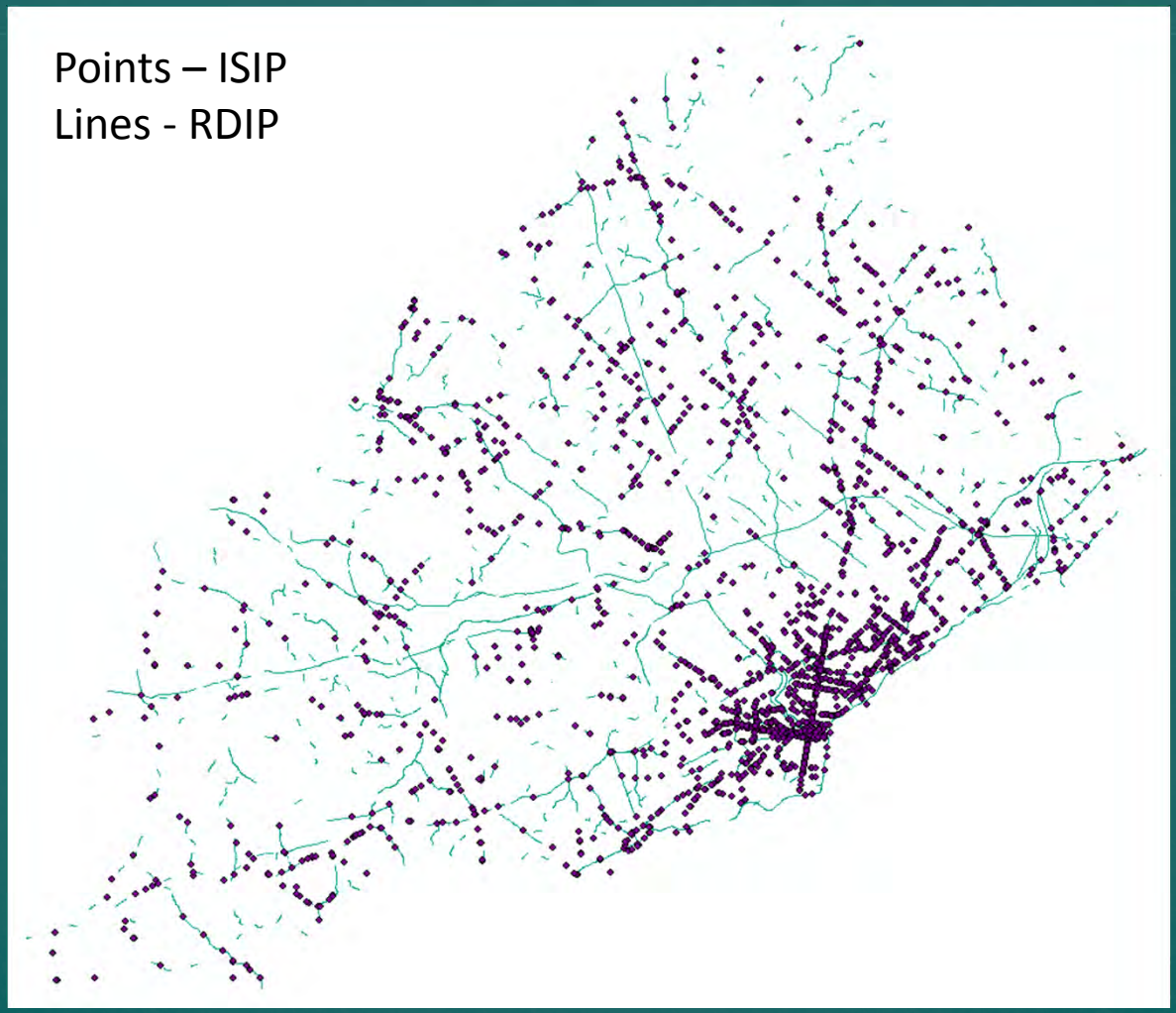
- *Amend the TIP for Pennsylvania by adding 4 new HSIP funded projects totaling $5,500,000 for construction in FY14.*
- *Region has been allocated $5,500,000 HSIP funds out of a total $30,015,146 from the Statewide HSIP Reserve Line Item for FY14. These are additional funds to the region that must be obligated this federal fiscal year.*

- *$2,600,000 HSIP funded District-wide Intersection Safety Implementation Plan (ISIP) to address the top ranked feasible locations within following safety countermeasures:*
  1. *Stop controlled intersection sign and marking*
  2. *Signal controlled intersection signal and sign improvements*
  3. *Change to Left-turn protected phase only at signalized intersections*
  4. *Pedestrian enhancements*
  5. *Speed reduction enhancements*

Add Proposed New Projects - PA

- *$300,000 HSIP funded District-wide enhanced "WRONG WAY Entry" Signing/ Pavement Marking Program for upgrades at 37 District expressway off-ramps with high occurrences of wrong way entries.*
- *$750,000 HSIP funded Cable Median Improvement Project to close the currently open median on the US 1 limited access highway in southern Chester County.*
- *$1,850,000 HSIP funded District-wide Roadway Departure Implementation Plan (RDIP) to address the top ranked feasible locations within of the following countermeasures:*
  1. *Centerline Rumble Strips*
  2. *Edgeline & Shoulder Rumble Strips*
  3. *Shoulder widening for Edgeline Rumble Strips & Edgeline Pavement Markings*
  4. *Curve Signing & Pavement Markings*
  5. *Alignment & Delineation, Lighting*
  6. *Guiderail Safety Enhancement*
  7. *Tree Removal*

Potential ISIP & RDIP Locations



★TIP A-C-T-I-O-N | PROPOSED-PA

c. Statewide Highway Safety Improvement Program (HSIP) Funding, Various Counties

- Add 4 new HSIP funded projects totaling $5,500,000 for construction in FY14.
  - *$2,600,000 HSIP funded District-wide Intersection Safety Implementation Plan (ISIP)*
  - *$300,000 HSIP funded District-wide enhanced "WRONG WAY Entry" Signing/Pavement Marking Program*
  - *$750,000 HSIP funded Cable Median Improvement Project*
  - *$1,850,000 HSIP funded District-wide Roadway Departure Implementation Plan (RDIP)*

Add Proposed New Project - NJ

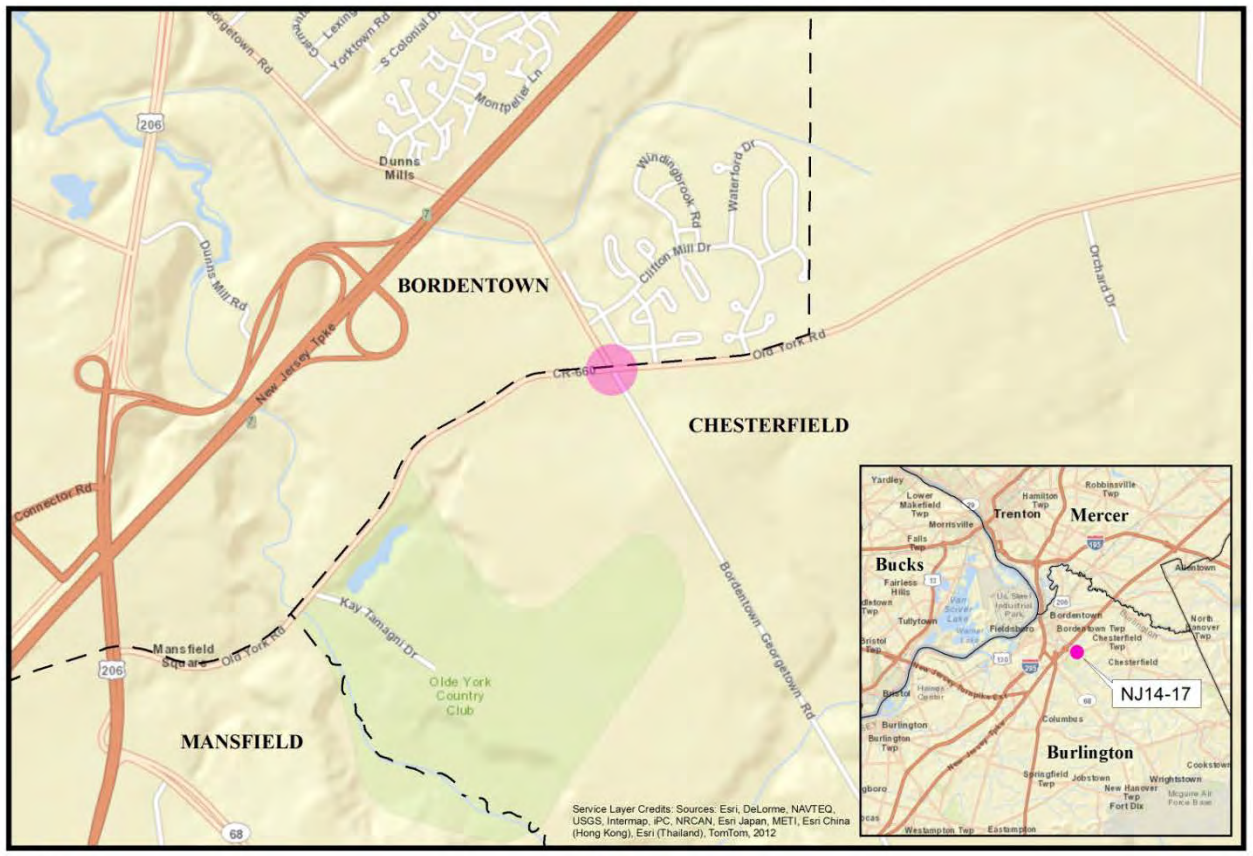
d. CR 545 and Old York Road (CR 660), Roundabout, Burlington County

- *Amend the TIP for New Jersey by adding a new $1,900,000 HSIP funded project, for construction in FY14.*
- *These funds are additional to the region and are provided from New Jersey's Department of Transportation Statewide HSIP funds.*
- *Burlington County is proposing to construct a modern roundabout at the intersection which ranks 17th in the DVRPC NJ region and 7th in Burlington County on the new Rutgers high crash locations screening, & has a history of right angle crashes. New drainage facilities will also be constructed.*
- *The proposed roundabout would replace the existing skewed intersection alignment which is STOP controlled on the Old York Road approaches.*
- *The existing roadway geometry promotes higher speeds than are appropriate for the adjacent land use which is a mix of both suburban and rural. The posted speed limit on all approaches to the intersection is 45 MPH.*

Add a Proposed New Project - NJ

- *A roundabout is the only alternative which will reduce vehicle speeds approaching the intersection and reduce conflicts between turning vehicles.*
  - *Roundabouts reduce crashes by up to 40%*
  - *Roundabouts reduce injury crashes by up to 80%*
- *This roundabout will serve to calm traffic while maintaining traffic flow, and will eliminate the possibility of intersection crossover crashes.*

NJ14-17: CR 545 and CR 660, Roundabout



N W E S

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

0 0.25 0.5
Miles

★TIP A-C-T-I-O-N | PROPOSED-NJ

d. CR 545 and CR 660, Roundabout, Burlington County

- *Add a new $1,900,000 HSIP funded roundabout project for construction in FY14.*

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Add a Proposed New Project - NJ

e. Route 45, Mullica Road to US 322, Gloucester County

- *Amend the TIP for New Jersey by adding a new $800,000 STP-STU funded project, for construction in FY14.*
- *Non-complex construction project screened for readiness.*
- *This is a resurfacing and safety improvement project that will consist of mill & paving of North Main Street (Route 45) through the village of Mullica Hill in Harrison Township.*
- *The project will also rehabilitate any deteriorated concrete base course.*
- *Pavement resurfacing will occur from approximately the Swedesboro Road/Mullica Hill By-Pass (Route US 322/CR 536) intersection to the Mill Road intersection (local Route US 322/CR 536) within Mullica Hill.*
- *Curb ramps will be replaced in kind to meet current ADA standards.*

Add a Proposed New Project - NJ

- *Long life traffic stripes and raised pavement markers will also be installed on the new pavement surface.*
- *Two pedestrian warning beacons will be added at the intersection of Woodland Avenue that crosses North Main Street due to the frequency of pedestrian crossing.*

- *Source of funds is from reduced estimates for 2 Gloucester County projects: Resurfacing and Safety Improvements on Tuckahoe Road (CR 557), and Resurfacing and Safety Improvements on Woodbury-Glassboro Road (CR 553).*
  - *3 projects for the price of 2.*

★TIP A-C-T-I-O-N | PROPOSED-NJ

e. Route 45, Mullica Road to US 322, Gloucester County

- *Add a new $800,000 STP-STU funded project for construction in FY14.*

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THANK YOU

DELAWARE VALLEY
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REGIONAL
PLANNING COMMISSION

FY 2015 Pennsylvania Transportation Management Association Assistance Grant Program

Presentation to the DVRPC RTC March 11, 2014

PENNDOT

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

FY 2015 Pennsylvania TMA Assistance Grant Program

Program initiated in 1995

Funds are available from PennDOT as follows:

- $192,000 per qualified TMA: TMAs must have proper organizational structure, must demonstrate adequate non-grant funding, must demonstrate involvement of both public and private sector entities, must have Strategic Plan
- Work Program must be approved by County Planning Commission staff in advance of submission to PennDOT and DVRPC for consideration
- Comment period concluded February 21, 2014.

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Application Requirements

- Must show financial capacity to match grant (20% = $38,400)

  All TMAs meet match requirement
- Must submit monthly progress reports to PennDOT and DVRPC staff
- Must submit Strategic Plan
- Must attend quarterly Contractors' Meetings with DVRPC and PennDOT staff.

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Program Elements Selected by DVRPC TMA Policy Committee:

- Be a Travel Demand Management information resource for municipalities, institutions, and the general public
- Promote increased transit use through a variety of means for Access to Jobs and other initiatives
- Act as coalition builders and advocates for regional transportation programs and capital projects
- Act as Liaison between PennDOT and Business Community for Construction Project Mitigation

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FY 15 TMA Performance Reports

- Beginning in FY 15, TMAs will be e-filing performance reports
- Reporting Policy and Protocol adopted by PennDOT and DVRPC staff
- Data will be consistent across all TMAs allowing aggregation
- Consultant will determine annual program benefit

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FY 2015 Funding Request

- Bucks County TMA: $ 192,000
- TMA of Chester County: $ 192,000
- Delaware County TMA: $ 192,000
- Greater Valley Forge TMA: $ 192,000
- Partnership TMA: $ 192,000
- Central Phila TMA/ MOTU*: $ 192,000
- Program Total $1,152,000

($921,600 CMAQ; $230,400 TMA Match)

- **Central Philadelphia TMA will subcontract work program elements to City of Philadelphia Mayor's Office of Transportation and Utilities.*

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Additional TMA Facts and Considerations

- TMA program ongoing for more than 20 years
- All TMAs are membership organizations
- Scopes of Work match needs of their constituencies
- All have a strong commitment to improving transportation conditions in their area, the region as a whole, and statewide
- All are committed to providing measurable results
- TMAs all have support from District 6 Executive

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FY 15 TMA Assistance Grant

- Comment Period now open – Closes Feb 21 at 4PM.
- Any RTC member is welcome to comment.
- TMA Policy Committee met Feb 7 to discuss work programs and staff comments
- Action to approve the work programs and applications will be requested in March

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Comments/Questions

If you would like to comment on any TMA's Draft FY 15 TMA Grant Scope of Work

Please contact:

Sarah Oaks

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215-238-2856

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Action Recommended

- To approve the FY 2015 TMA Assistance Grant applications for a total of $1,152,000 ($921,600 CMAQ, $230,400 TMA match) and to forward this approval to PennDOT.

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Action Requested

- To approve and recommend DVRPC Board approval of the FY 2015 TMA Assistance Grant applications for a total of $1,152,000 ($921,600 CMAQ, $230,400 TMA match).

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