DELAWARE VALLEY GOODS MOVEMENT TASK FORCE

Opportunities to Reduce Diesel Emissions from Goods Movement

Sean Greene, DVRPC

April 15, 2015

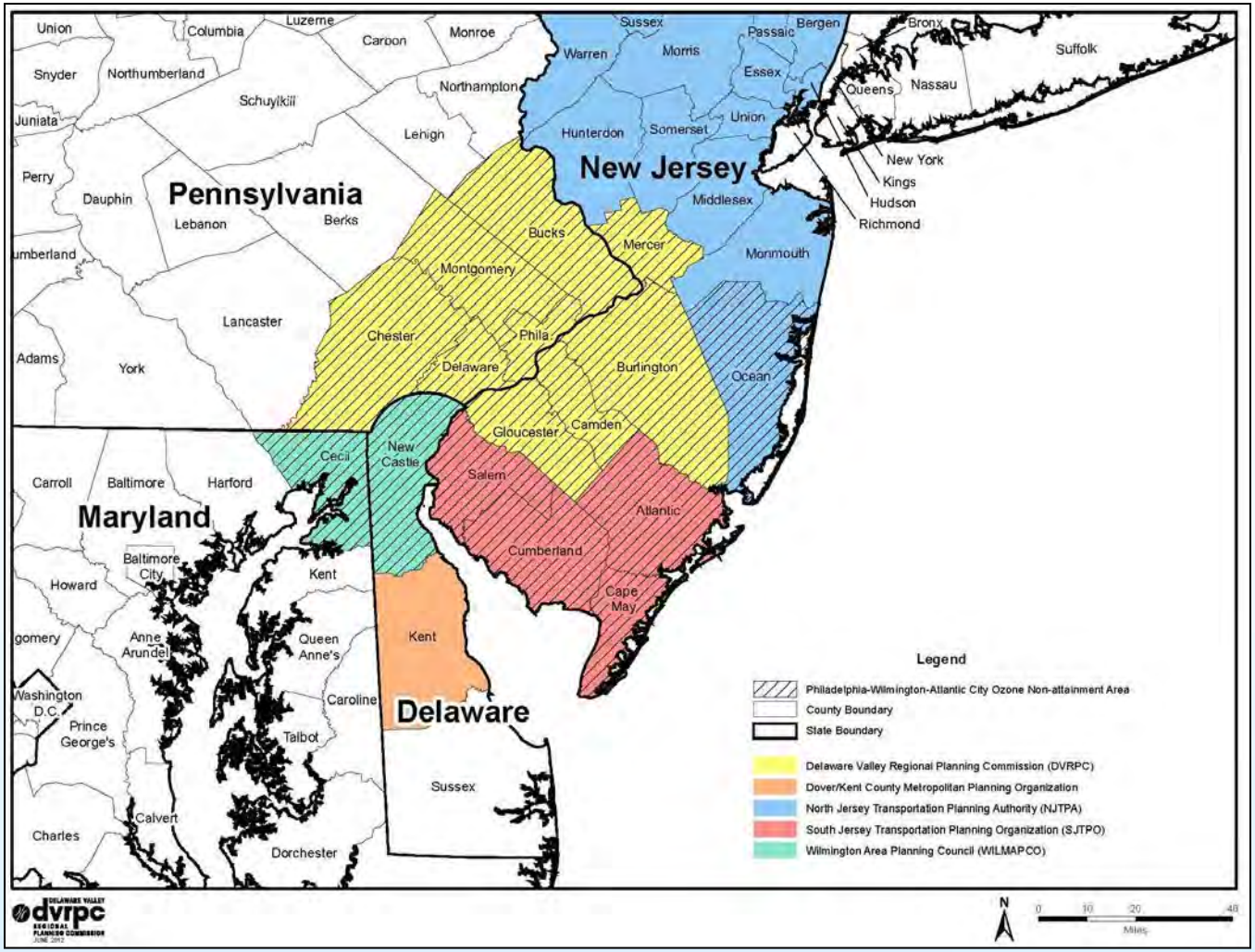
World Class Freight Center

- 9.8 Million Truck VMT Daily
- 2 Class I Railroads and 12 Short Lines
- 31 Port Terminals
- 44 Freight Centers
- $500 Billion worth of freight through the region per year.

Air Quality in the Delaware Valley

- Air quality, across the nation and in the region, has been steadily improving.
- In 2015, the region, with the exception of Delaware County, has been re-designated as attainment for $PM_{2.5}$
- Air quality in the Greater Philadelphia region does not meet the federal health based air quality standards for ground-level ozone.

Ozone Nonattainment Area



Air Quality in the Delaware Valley

- As ambient air quality improves, focus turns to areas around stationary sources and activity centers that are impacted by emissions sources.
- EPA focusing on EJ impacts of emissions sources and Good Movement identified as priority area.(*Plan EJ 2014*)

Health and Demographics

- Studies continue to quantify health risks of diesel emissions exposure.
- WHO lists diesel exhaust as a carcinogen. EPA and NIH lists as likely carcinogen.
- As an example, communities surrounding port facilities in the DVRPC region, show lower incomes, higher rates of poverty, and higher instances of asthma and diabetes than the counties in which they are located.
- Employees continually exposed to diesel emissions.

Health and Demographics

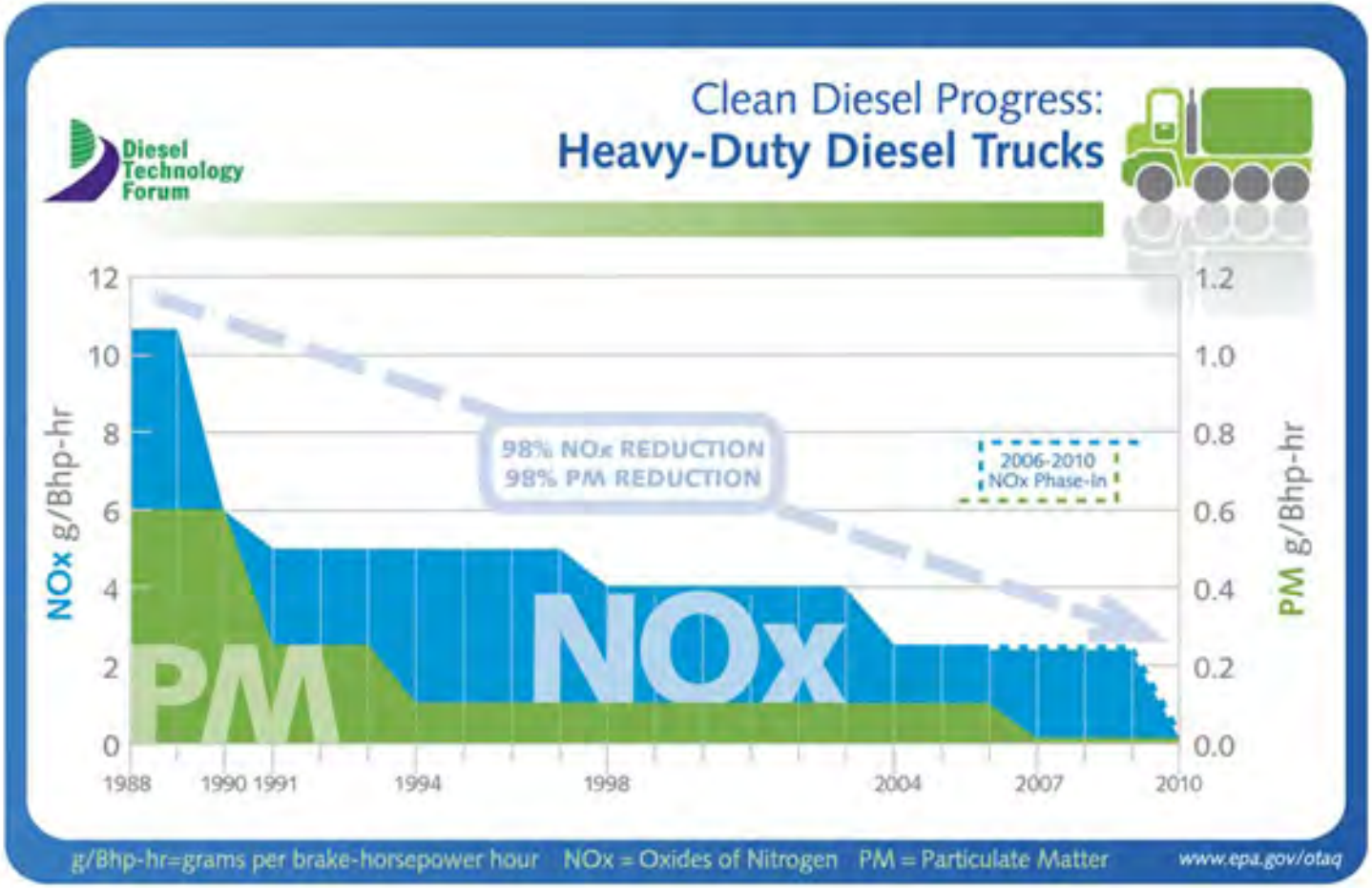
	5 PA Counties	3 Port Counties (PA)	Tracts within 0.5 Mile of Ports
Percent Adults with Asthma	15.5%	16%	17.8%
Percent Asthmatic Elderly (60+)	17%	16.5%	21.7%
Percent Asthmatic Child	23%	24.6%	25.1%

Demographic	DVRPC Region	DVRPC Counties with Port Facilities	Tracts within 0.5 Mile of Ports
Median Household Income	$68,109	$62,556	$47,809
Percent of Families Below Poverty	12%	14%	18%
Percent Receiving SNAP Benefits	11.7%	13.8%	21%
Percent Unemployment	34.6%	35.7%	37.5%

Regulations

- Federal and state governments regulate point (industry, refineries, etc.) and area (dry cleaners, gas stations) sources of emissions.
- Fuel standards and engine standards are set by the federal government with phase-in period.
- Engines standards are enacted for HDDVs, locomotive and marine engines.
- New standards are very effective but fleet turnover is critical to see improvements.

Diesel Engine Standards



What are Other Regions Doing?

- Operations improvements
  - Appointment system and expanded gate hours, priority for newer trucks. (PANYNJ)
  - Roadway enhancement program to promote projects to improve NHS connector efficiency. (PANYNJ)
- Electrification and alternative fuels
  - Refrigerated container electrification. (Wilmington, DE)
  - CNG Cranes. (Port of Virginia)

Clean Operator Programs

- PANYNJ
  - Clean Air Strategy
    - Old truck ban (beginning in 2017)
    - Funding incentives prior to ban
- Port of Virginia
  - Green Operator Program
    - Up to $15K for replacements
    - Retrofit money available
- Port of Maryland
  - Drayage Truck Replacement Program
    - $20K for replacements

Ports with Clean Truck Programs

Model Year	LA/LB	CARB	SEA/TAC	OAKLAND	NY/NJ	HOUSTON
ADOPTED	NOV 2007	DEC 2008	APRIL 2009	JUNE 2009	MAR 2010	JAN 2011
PRE-1994	BANNED JAN 2010	BANNED JAN 2010	BANNED JAN 2011	BANNED JAN 2010	BANNED JAN 2011	10% REDUCTION BY 2014
1994-2003	RETROFIT BY JAN 2010 BANNED JAN 2012	RETROFIT BY JAN 2010 BANNED JAN 2014	BANNED JAN 2018	RETROFIT BY JAN 2010 BANNED JAN 2014	BANNED JAN 2017	-
2004-2006	BANNED JAN 2012	RETROFIT BY JAN 2012 BANNED JAN 2014	BANNED JAN 2018	RETROFIT BY JAN 2012 BANNED JAN 2014	BANNED JAN 2017	-
2007+	REQUIRED JAN 2012	REQUIRED JAN 2014	REQUIRED JAN 2018	REQUIRED JAN 2014	REQUIRED JAN 2017	RECCOMEN-DED BY 2021

Examples of Projects in this Region

- CSX
  - Locomotive Repower – Pavonia Yard, Camden County, NJ
  - Trenton Line Clearance Project
- MARAMA, Philadelphia Diesel Difference and CAC
  - Dray truck replacement program (18 trucks)
  - Wilmington Tug Repower
- SMARTWAY Partnership
  - >30 Carriers in the DVRPC region

What is DVRPC's Role?

- Coordination
  - Raise issues and build coalitions to address issues
    - Goods Movement Task Force, PDD, Camden Community Initiative
- Assist with funding applications for state and federal funding
  - DERA, EPA Ports Initiative, and other transportation, environmental, and economic development funding opportunities
- Coordinate Funding programs
  - CMAQ, TCDI, Transportation Improvements
- DVRPC can help make connections

How Can We Work Together?

- Keys to funding
  - Preparation
    - DVRPC, Philadelphia Diesel Difference, EPA regions and States willing and able to discuss project ideas and applications
  - "Shovel Ready" is the new black
    - Application timeframes are short, well developed ideas key to funding
  - Measuring success
    - Successes need to be quantified and shared
- Data
  - To identify trends
  - Plan for the future
  - Track Progress

Funding and Assistance Sources

- EPA
  - DERA
    - FY2015 RFP coming soon
    - $12-$14 million targeted at goods movement and areas with poor AQ
  - EPA Clean Ports Initiative
    - Anticipated funding announcement in 2015
  - Source Reduction Assistance grants
    - $130,000 in EPA Region 2 and $75,000 max awards in Region 3
    - Applications due May 26, 2015
- CMAQ
  - Potential DVRPC competitive round in PA for FY 2018
  - Round just closed for NJ in April 2015
- State Clean Diesel Funding and SEPs
- TIGER
  - $500 million in 2015, pre-applications due in May

Contacts

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- Peg Hanna, NJ DEP – peg.hanna@dep.nj.gov
- Chris Trostle, PA DEP – dtrostle@pa.gov


Thank You!

National Highway System Connector Evaluations

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Acknowledgements

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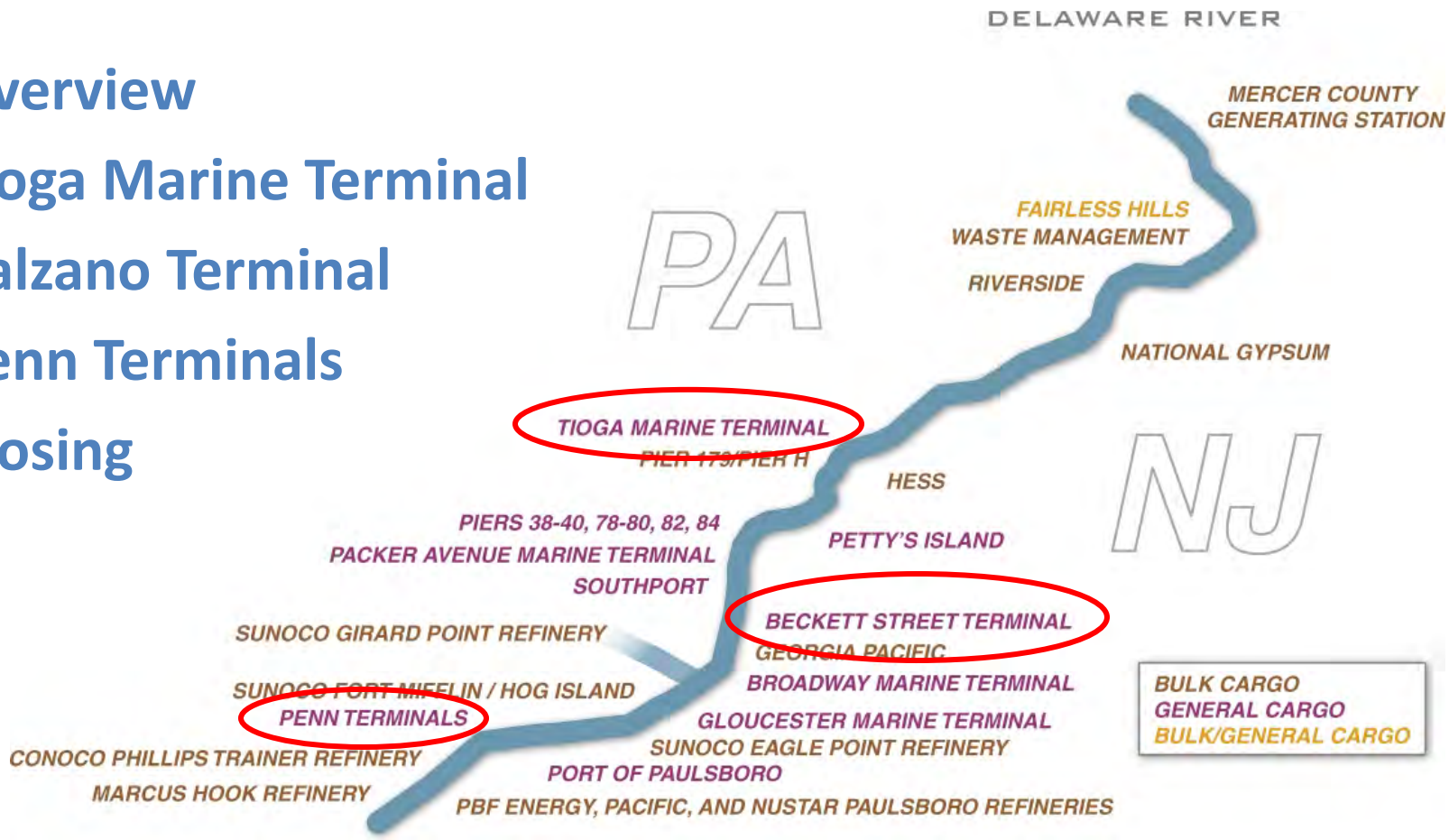
- Jay Jones (Balzano Terminal)
- Nick Walsh and Dave Harvey (Tioga Marine Terminal)
- Jeff Culbertson (Penn Terminals)
- Vicente Morales (PennDOT District 6)
- Susan Gresavage (New Jersey DOT)
- Uzo Ahiarakwe(City of Camden)
- Dan Walston (FHWA Pennsylvania Division)

Outline

- Overview
- Tioga Marine Terminal
- Balzano Terminal
- Penn Terminals
- Closing



All 3 NHS connectors serve additional freight facilities

NHS Connectors

Defined by FHWA as:

"…the public roads leading to major intermodal terminals."

- Key routes for the timely & reliable delivery of goods

- Account for < 1% of the total NHS mileage.

Course Objectives

- Senior-level design course in Civil Engineering
- Complete a “real world” design problem
  - Consider realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and/or sustainability.
- Incorporate & apply current technology used in practice
- Effectively communicate outcomes through final report and presentations

Objectives of Project

- The design solutions for NHS connectors will consider:
  - Both existing and potential future traffic growth,
  - Current infrastructure conditions,
  - Implementation issues and cost considerations,
  - Way-finding and safety along route, and
  - Improve facility for multiple transportation modes.
- Tools: SYNCHRO, Highway Capacity Software, Warrant Analyses, Manual on Uniform Traffic Control Devices, NJDOT & PennDOT standards

Current Technology Used in Practice

Pavement Design

AASHTOWare Pavement ME Design

AASHTO

For state-of-the-art pavement design

Downloads

Tools to Allo between Pa

AASHTOWare Paver

Design Inputs

Design Life

Design Typ

Design St

Layer 1 Flexible

Layer 2 Non-stabi

Layer 3 Non-stabil

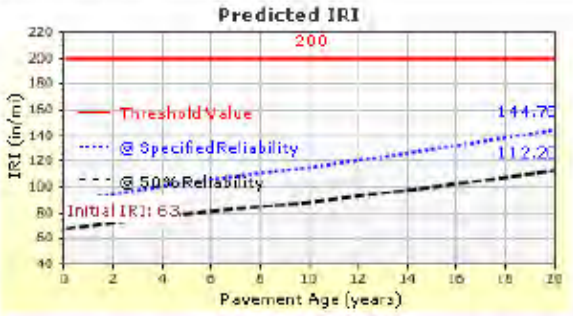
Layer 4 Subgrade

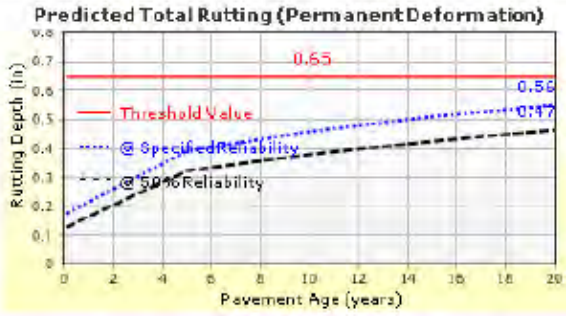
Design Outputs

Distress Prediction Summary

Distress Type	Distress @ Specified Reliability		Reliability (%)		Criterion Satisfied?
	Target	Predicted	Target	Achieved	
Terminal IRI (in./mile)	200.00	144.66	85.00	99.75	Pass
Permanent deformation - total pavement (in.)	0.65	0.56	85.00	98.48	Pass
AC bottom-up fatigue cracking (percent)	35.00	15.10	85.00	99.51	Pass
AC thermal cracking (ft/mile)	700.00	22.17	85.00	100.00	Pass
AC top-down fatigue cracking (ft/mile)	1000.00	2453.82	85.00	61.98	Fail
Permanent deformation - AC only (in.)	0.25	0.18	85.00	99.32	Pass

Distress Charts





FHWA Intermodal Connector Assessment Tool (ICAT)

Compare ICAT score of existing conditions to those of proposed design solutions

Intermodal Connector Assessment Tool (ICAT)

Home Page | Documentation | Model Setup | Data Entry | Results

Model Setup

Assessment Variable Weights for Scoring

	Connector Evaluation Criteria	Default weight	User Specification	Selected Weights	Final Weights
1	Lane Width	4		4	4.0
2	Outer Shoulder Width	3		3	3.0
3	International Roughness Index	14		14	14.0
4	Horizontal Alignment Adequacy	9		9	9.0
5	Vertical Alignment Adequacy	5		5	5.0
6	Bridge Sufficiency Rating	11		11	11.0
7	Bridge Weight Limit	11		11	11.0
8	Tunnel Underpass Clearance	13		13	13.0
9	Peak Hour Volume/Capacity	13		13	13.0
10	Posted Speed	5		5	5.0
11	Crash Rates	12		12	12.0
	TOTAL	100	0	100	100.0

Minimum number of Connector Evaluation Criteria necessary to generate a score for a connector: 4

General Connector Scoring Criteria

Low Value	High Value	Condition Label	Condition Description (for more information see connector evaluation criteria sheets)
0	59	Very Poor	Below criteria for "Poor" condition
60	69	Poor	Up to 35% below urban interstate standards or fourth category in HPMS or other data sour
70	79	Fair	Up to 20% below urban interstate standards or third category in HPMS or other data sourc
80	89	Good	Exceeds urban interstate standards or second category in HPMS or other data source
90	100	Excellent	Exceeds rural interstate standards or top category in HPMS or other data source

Tioga Marine Terminal

Handles break bulk cargo, steel, and containers

AADTT Volume ~ 681 trucks/day

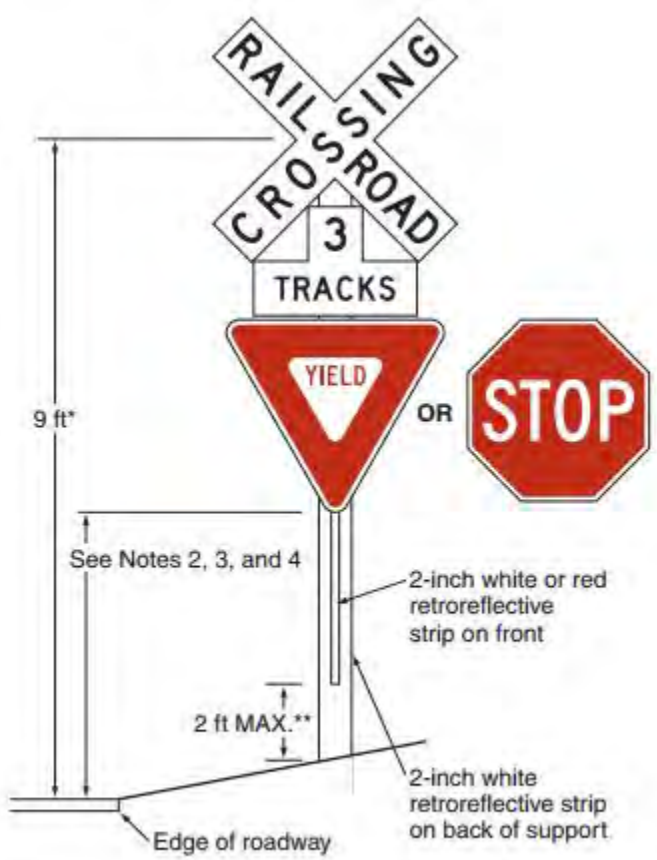
I-95 Project

Before and After - ICAT Scores

ICAT CATEGORY - BEFORE CONSTRUCTION												
NHS Connector Street	Lane Width	Outer Shoulder Width	International Roughness Index	Horizontal Alignment Adequacy	Vertical Alignment Adequacy	National Bridge Inventory Sufficiency	Bridge Weight Limit	Tunnel Underpass Clearance	Peak Hourly Volume/Capacity	Posted Speed	Crash Rates	Overall ICAT Score
Delaware (SR 1005)	100	100	0	100	100	N/A	N/A	N/A	100	55	100	82
Castor (SR 1005)	100	90	71	100	100	N/A	N/A	87	100	45	100	88
Allegheny (SR 2016)	100	100	46	100	100	N/A	N/A	70	100	50	100	85

ICAT CATEGORY - AFTER CONSTRUCTION												
NHS Connector Street	Lane Width	Outer Shoulder Width	International Roughness Index	Horizontal Alignment Adequacy	Vertical Alignment Adequacy	National Bridge Inventory Sufficiency	Bridge Weight Limit	Tunnel Underpass Clearance	Peak Hourly Volume/Capacity	Posted Speed	Crash Rates	Overall ICAT Score
Delaware (SR 1005)	100	100	100	100	100	N/A	N/A	N/A	100	55	100	94
Castor (SR 1005)	100	90	100	100	100	N/A	N/A	87	100	45	100	91
Allegheny (SR 2016)	100	100	100	100	100	N/A	N/A	87	100	50	100	93

Signage and Grade Crossings



- Signage and pavement markings to be added following MUTCD and AASHTO standards
- Railroad crossings are major points of emphasis, since rail capacity into Tioga expected to grow in future
- Pre-signage must be added to give drivers proper warning for clearances, railroad crossings, and other obstacles
- Placement and sizing of signage is extremely important

Pavements

- Overlay sections of NHS Connector where smoothness (IRI) values exceed acceptable standards
- Apply additional milling depth to ensure appropriate clearance for I-95 overpass

Create pavement markings for truck wayfinding to/from Tioga facility, along NHS Connector

Balzano Marine Terminal

- **Breakbulk and Bulk Facility**
  - **Steel, project cargo, wood products, cocoa beans, other bulk cargo**
- **AADTT Volume**
  - **250 Trucks/day**
  - **Includes Class 8 & 9 trailers**

Before and After - ICAT Scores

Existing

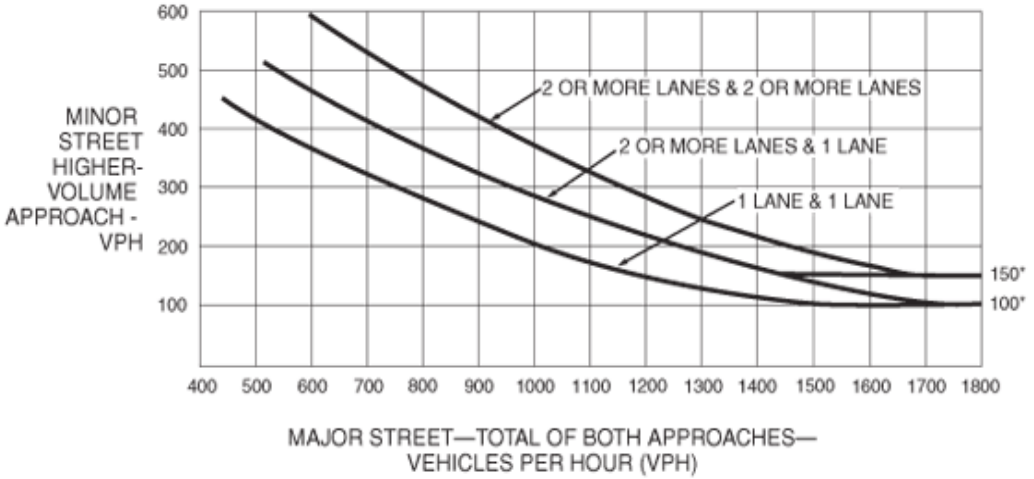
Parameter	Score
Peak Hour Volume/ Capacity	40
Posted Speed	55
Outer Shoulder Width	0
Lane Width	80
Tunnel Underpass Clearance	95
Bridge Weight Limit	N/A
Horizontal Alignment Adequacy	65
International Roughness Index	70
National Bridge Inventory Sufficiency	N/A
Vertical Alignment Adequacy	N/A
Total	405

New

Parameter	Score
Peak Hour Volume/ Capacity	40
Posted Speed	55
Outer Shoulder Width	50
Lane Width	85
Tunnel Underpass Clearance	95
Bridge Weight Limit	N/A
Horizontal Alignment Adequacy	100
International Roughness Index	95
National Bridge Inventory Sufficiency	N/A
Vertical Alignment Adequacy	N/A
Total	520

Warrant Analysis

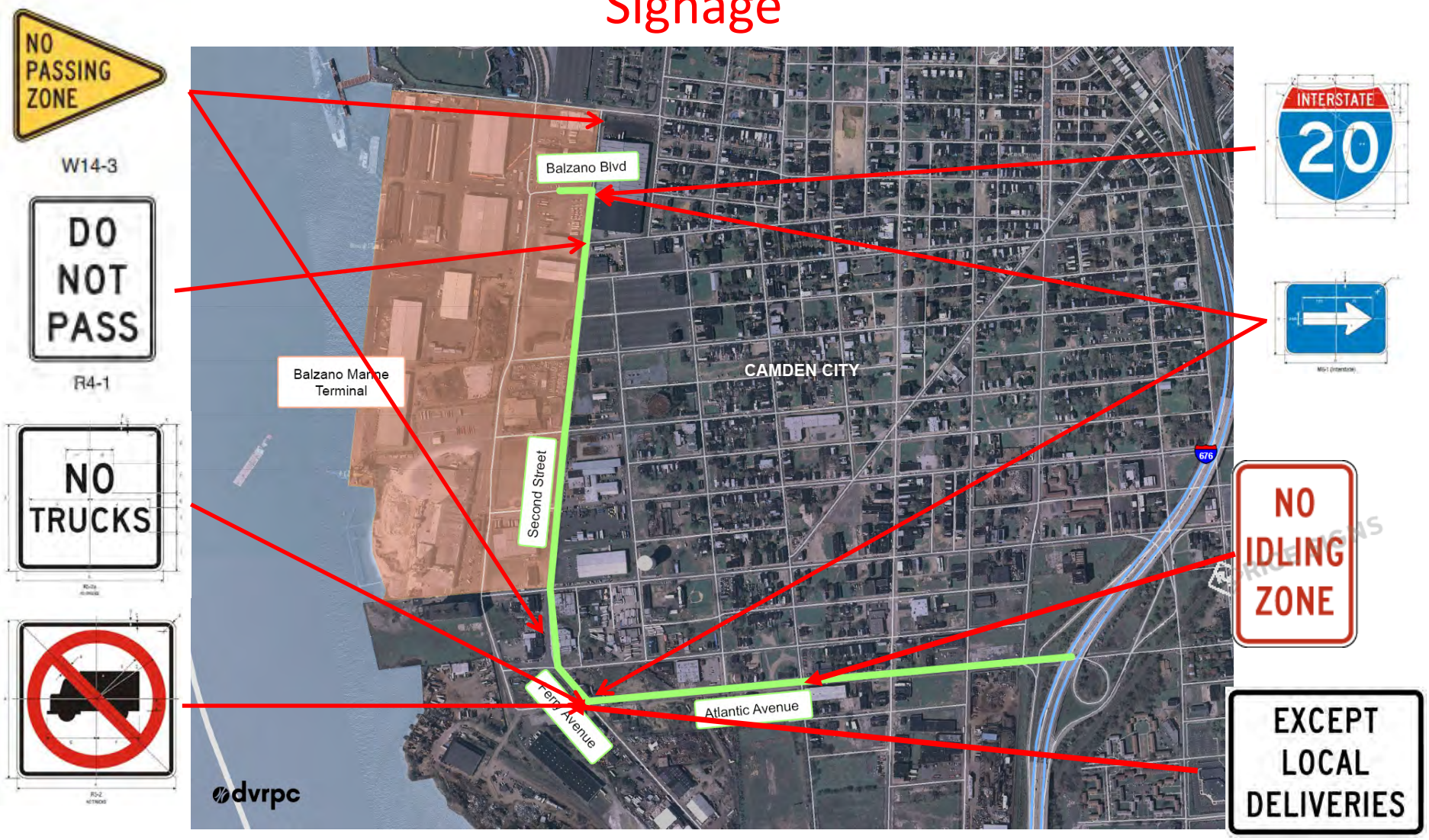
Warrant 3: Peak Hour



Warrant 7: Crash Experience (2006-2012)

- 7 total crashes at Ferry Ave/Mechanic St.
- 18 total crashes at Ferry Ave/Atlantic Ave.
- No fatalities, 14 Property Damage Only

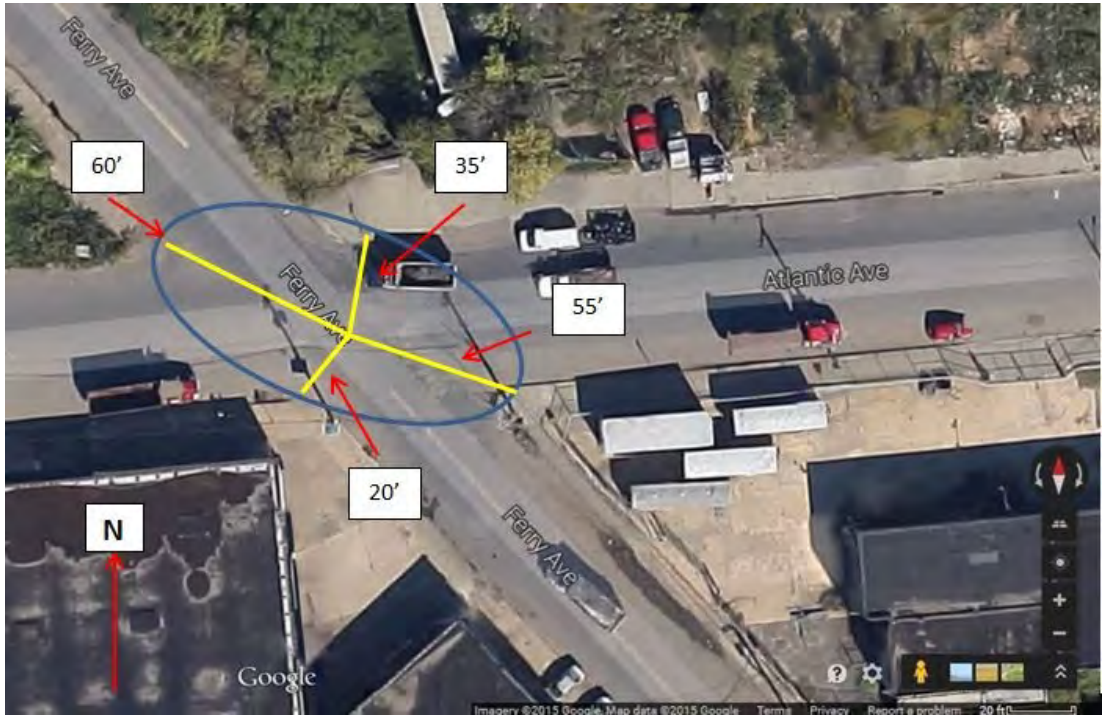
Signage

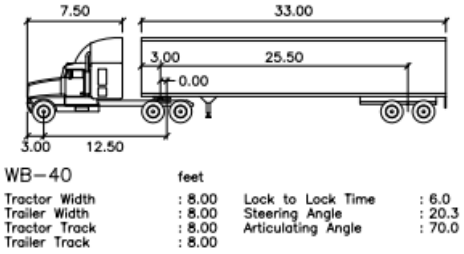

NO PASSING ZONE
W14-3
DO NOT PASS
R4-1
NO TRUCKS
INTERSTATE 20
NO IDLING ZONE
EXCEPT LOCAL DELIVERIES
Balzano Blvd
Balzano Marine Terminal
CAMDEN CITY
Second Street
Ferry Avenue
Atlantic Avenue
676
dvrpc

Connector Geometry

- WB-40 truck – requires 50ft turning radius (NJDOT Roadway Design Manual)
- Actual radius – 35ft.

- Propose to cut into sidewalk to extend radius of the turn
- Smooth out the curve





WB–40 feet

Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.00	Steering Angle	: 20.3
Tractor Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.00		

Pavement Designs

- 3 areas will receive full pavement replacement

- Multiple sections on 2nd Street & underneath I-676 overpass will receive overlays to improve rideability

Penn Terminals

Handles: containers, perishables, steel, pipes, forest products, and other break-bulk

AADTT: ~787 trucks/day

Before and After - ICAT Scores

Existing Conditions

	Stewart Ave	Route 291	Saville Ave
Lane Width	83	83	n/a
Outer Shoulder Width	95	0	0
IRI	95	95	95
Horizontal Alignment Adequacy	100	75	65
Tunnel Underpass Clearance	n/a	85	n/a
Peak Hour Volume/Capacity	43	61	67
Posted Speed	67.5	57.5	35

New Conditions

	Stewart Ave	Route 291	Saville Ave
Lane Width	83	83	85
Outer Shoulder Width	95	0	10
IRI	95	95	100
Horizontal Alignment Adequacy	100	75	75
Tunnel Underpass Clearance	n/a	87.5	n/a
Peak Hour Volume/Capacity	43	61	67
Posted Speed	67.5	57.5	35

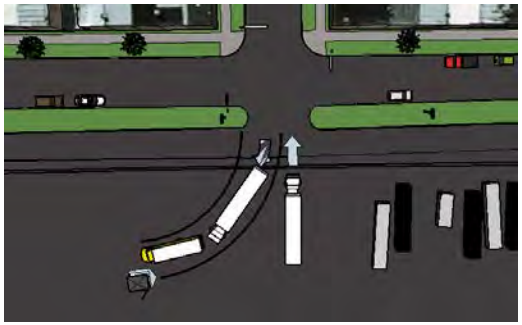
Geometry

Increase railroad bridge clearance from 14’ to 14.5’ for future overlays and potential increased truck size

Signage

Community Impacts

- **Areas of concern:**
  - Noise pollution
  - Safety
  - Loss of vegetation
  - Queueing
- **Mitigation**
  - Limit construction hours
  - Stormwater management
  - **Limit trucks within neighborhood**
  - **Truck queue within terminal**
  - Repair sidewalks
  - Improve aesthetics



- Long-Term Objective: Blueprint for all NHS connectors and Freight Center connectors in the region, adjustable to varying conditions

Thank You

Pennsylvania State Rail Plan

Delaware Valley Goods Movement Task Force
Quarterly Meeting

April 15, 2015

Welcome & Opening Remarks

Pennsylvania State Rail Plan

Study Team

pennsylvania DEPARTMENT OF TRANSPORTATION

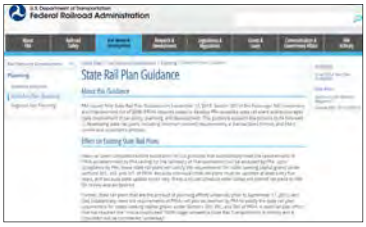
❖ Angela Watson
Acting Director – PennDOT Bureau of Rail Freight

HNTB

❖ Dave Hollis
Project Manager

State Rail Plan Overview

1. Purpose of PA State Rail Plan
2. FRA 2013 State Rail Plan Guidance
3. Key Elements
4. Schedule



Purpose of PA State Rail Plan

Fulfills federal requirements

Creates a vision for the future of rail service throughout PA

The Plan will define key rail projects needed to serve growth in freight markets and improve passenger rail travel

Provides an integrated plan for freight and passenger rail, including 4- and 20-year strategies

New FRA Rail Plan Guidance

Required Plan Contents:

Executive Summary

1. Chapter 1: Role of Rail in Statewide Transportation
2. Chapter 2: The State's Existing Rail System
3. Chapter 3: Proposed Passenger Rail Improvements and Investments
4. Chapter 4: Proposed Freight Rail Improvements and Investments
5. Chapter 5: The State's Rail Service and Investment Program
6. Chapter 6: Coordination and Review

Technical Appendix

SRP Key Elements & Schedule

Existing Conditions (Chapters 1 & 2)
- Fall-Winter 2014

Final Report
- Fall 2015

We are here

Proposed Passenger and Freight Rail Improvements (Chapters 3 & 4)
- Winter 2014-Spring 2015

Rail Service and Investment Program (Chapter 5)
- Spring-Summer 2015

★ Stakeholder Coordination

▲ Public Meeting

PA Passenger and Freight Rail Network

Pennsylvania State Rail Plan

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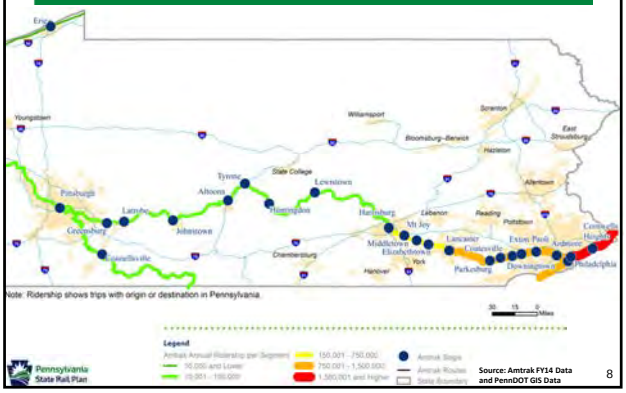
Amtrak Ridership



Source: Amtrak FY14 Data and PennDOT GIS Data

Pennsylvania State Rail Plan

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Northeast Corridor Investment Planning

Source: Amtrak

Pennsylvania State Rail Plan

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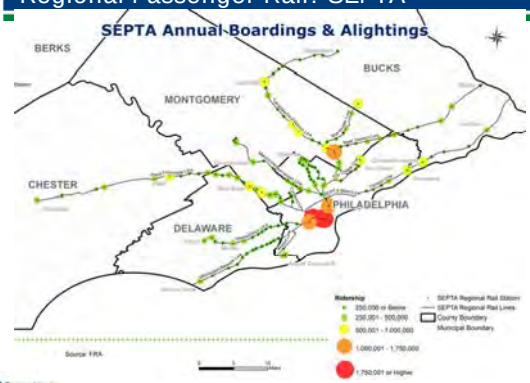
Regional Passenger Rail: SEPTA



Pennsylvania State Rail Plan

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Freight Rail Network

Pennsylvania State Rail Plan

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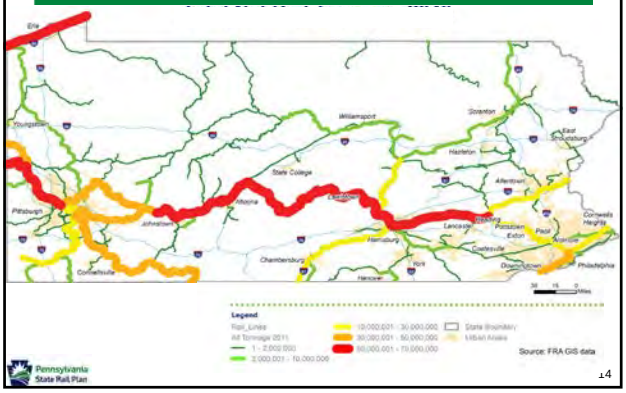
Freight Profile: Commodity Flows

Pennsylvania State Rail Plan

Freight Rail Flows Profile

1. 193 Million Tons of Freight Moved in 2011 (202 Million Tons in 2007)
2. Coal is Leading Shipped Commodity, Followed by Chemicals and Allied Products, and Food Products
3. Coal is also Leading Inbound and Outbound Commodity
4. Increased Crude Oil Shipments Elevate Safety Concerns

Projected Total Freight Rail Tonnage by Rail Line, 2040



Freight Rail Demand

1. Expected Freight Tonnage Growth: Shipments Projected to Grow by 69 million Tons (35%) by 2040
2. Coal as Highest Volume Commodity Although Projected to Decrease Overall (-23% by 2040)
3. Growing Crude Oil Shipments Destined for PA Refineries - Forecasted to Increase 41% by 2040
4. Fast Growth in Waste or Scrap Materials Shipments, 130% Increase from 2011-2040

Freight Rail Demand

5. Intermodal Traffic to Increase 87% by 2040
6. Projected Increases in Line Density (Millions of Gross Tons Carried per Year) Primarily on PA's Major Rail Corridors

Freight Rail: Changing Markets

1. Commodity Flows Increase (oil) and Decline (coal)
2. The Marcellus and Utica Shale: Effects of Hydraulic Fracturing and Natural Gas Extraction on Freight Rail Demand
   a. Sand, water, chemicals, and equipment shipped to sites via rail
   b. Reported congestion at some transloading facilities and yards

Freight Rail: Changing Markets

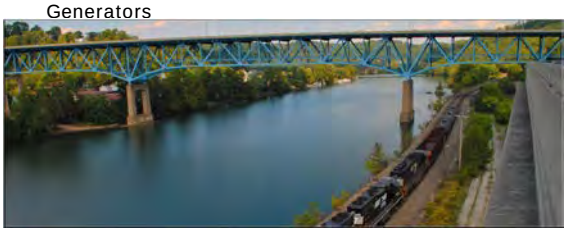
3. North Dakota Bakken Oil Extraction - Crude Oil Flows to Refineries in Philadelphia Area
4. 75 Trains Carrying Crude Oil Pass through PA each Week, Primarily carried by NS and CSX
5. Safety Concerns as Crude Oil Shipments pass Through Urban Areas

Freight Rail: Physical Constraints

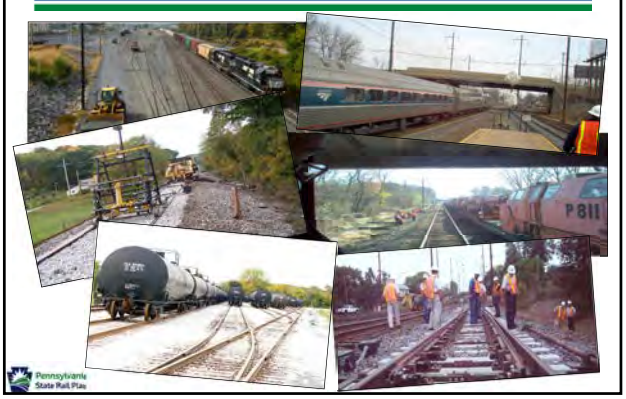
1. Weight Restrictions: 286K Capability
2. Capacity: Vertical Clearance, Double-Stacking
3. Congestion: Philadelphia Greenwich Yard; Delaware-Lackawanna RR; Pittsburgh & Ohio Central RR; Crude Oil Shipment Bottlenecks, and Shared Track Areas

Freight Rail: State of Good Repair

1. Structurally-Deficient Bridges and Tunnels
2. Safety: Upgrading At-Grade Crossings, Minimizing Conflicts, Crude Oil and HAZMAT Shipments
3. Access to Intermodal Facilities and Freight Generators



Draft Rail Improvements and Investments



Projects Summary

1. Identified projects
   a. PennDOT Statewide Transportation Improvement Program
   b. Amtrak's NEC Five-Year Plan
   c. SEPTA's Five-Year Plan
   d. MPO/RPO Long-range Transportation Plans
   e. Freight rail carriers
2. Nearly 500 projects totaling over $11 billion
   a. Passenger Rail: 268 Projects Total $10.6B
   b. Freight Rail: 208 Projects Total $734M – List is NOT Comprehensive, and is based on Available Data Received-to-Date
3. Others?

Next Steps: Draft Improvement Program

1. PRIIA and FRA Guidance Requires that the SRP Include an Investment Program with a Portfolio of Rail Improvement Projects
   a. Short-Term 4-Year Program
   b. Long-Term 20-Year Program
2. Projects can be Prioritized by Corridor, Timing, Service Type, Asset Type, Investment Type, or Improvement Purpose

Questions & Answers

For More Information:
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David Hollis, HNTB, dhollis@hntb.com

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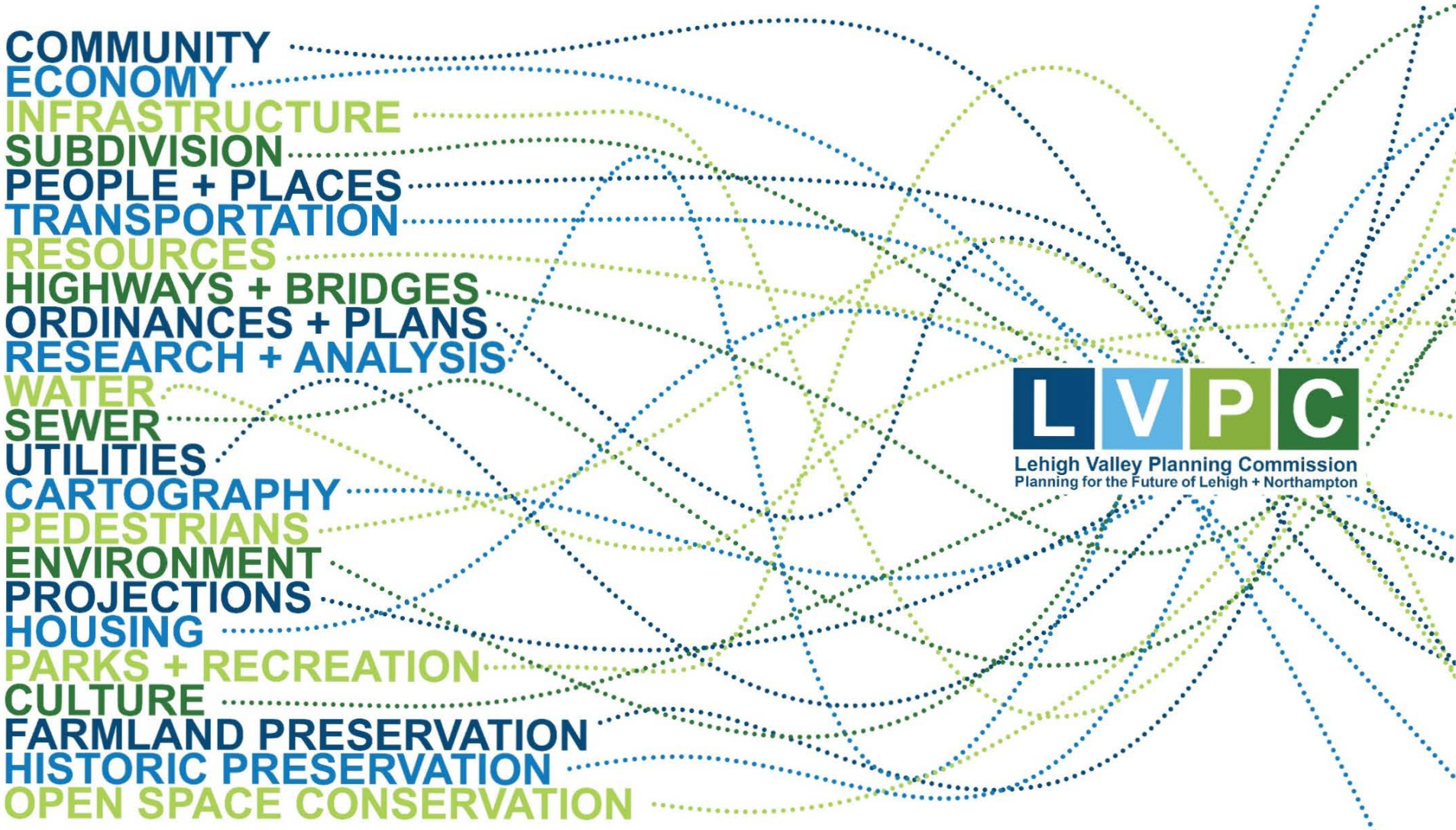
April 15, 2015

Becky A. Bradley, AICP

Secretary, Lehigh Valley Transportation Study

Executive Director, Lehigh Valley Planning Commission


COMMUNITY
ECONOMY
INFRASTRUCTURE
SUBDIVISION
PEOPLE + PLACES
TRANSPORTATION
RESOURCES
HIGHWAYS + BRIDGES
ORDINANCES + PLANS
RESEARCH + ANALYSIS
WATER
SEWER
UTILITIES
CARTOGRAPHY
PEDESTRIANS
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HOUSING
PARKS + RECREATION
CULTURE
FARMLAND PRESERVATION
HISTORIC PRESERVATION
OPEN SPACE CONSERVATION
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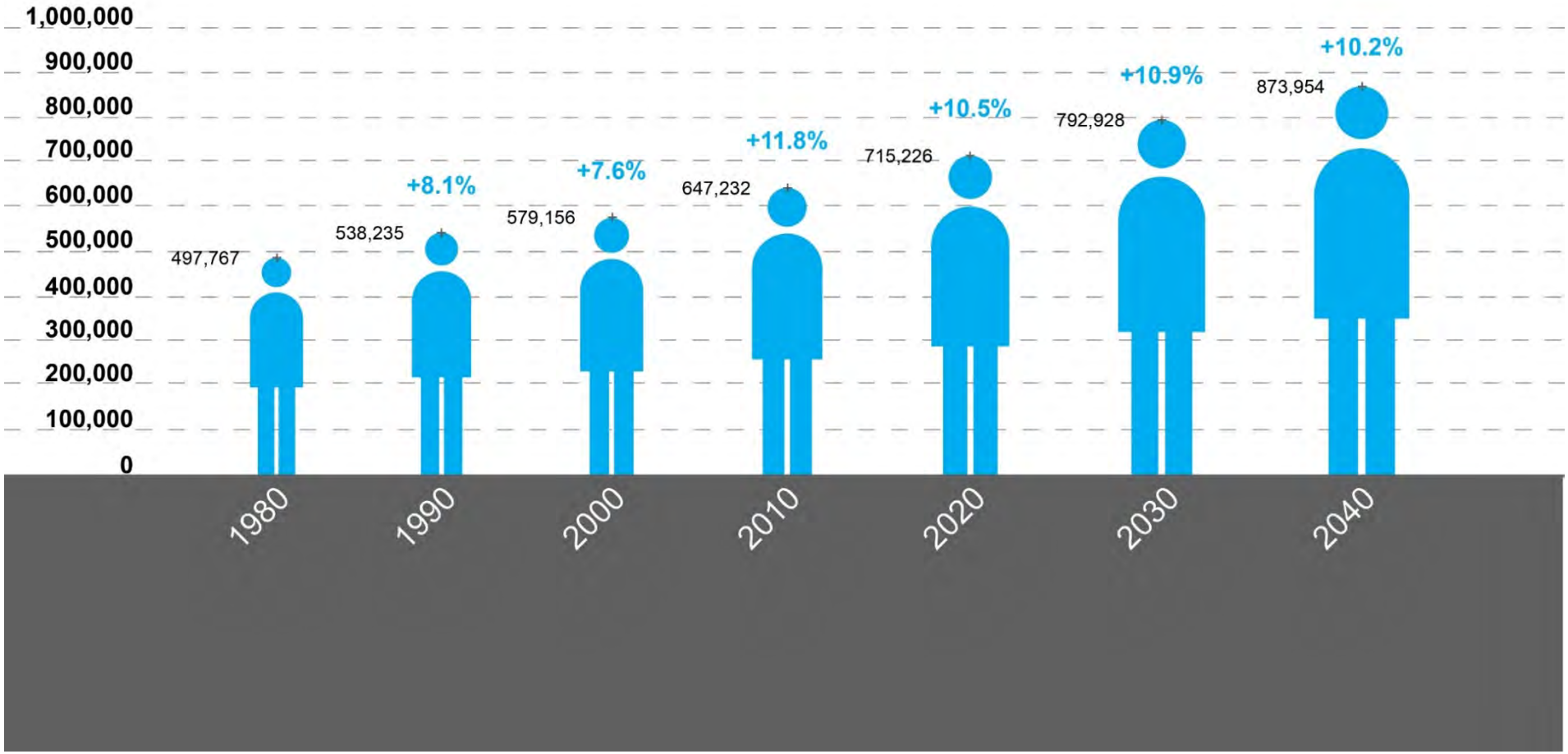
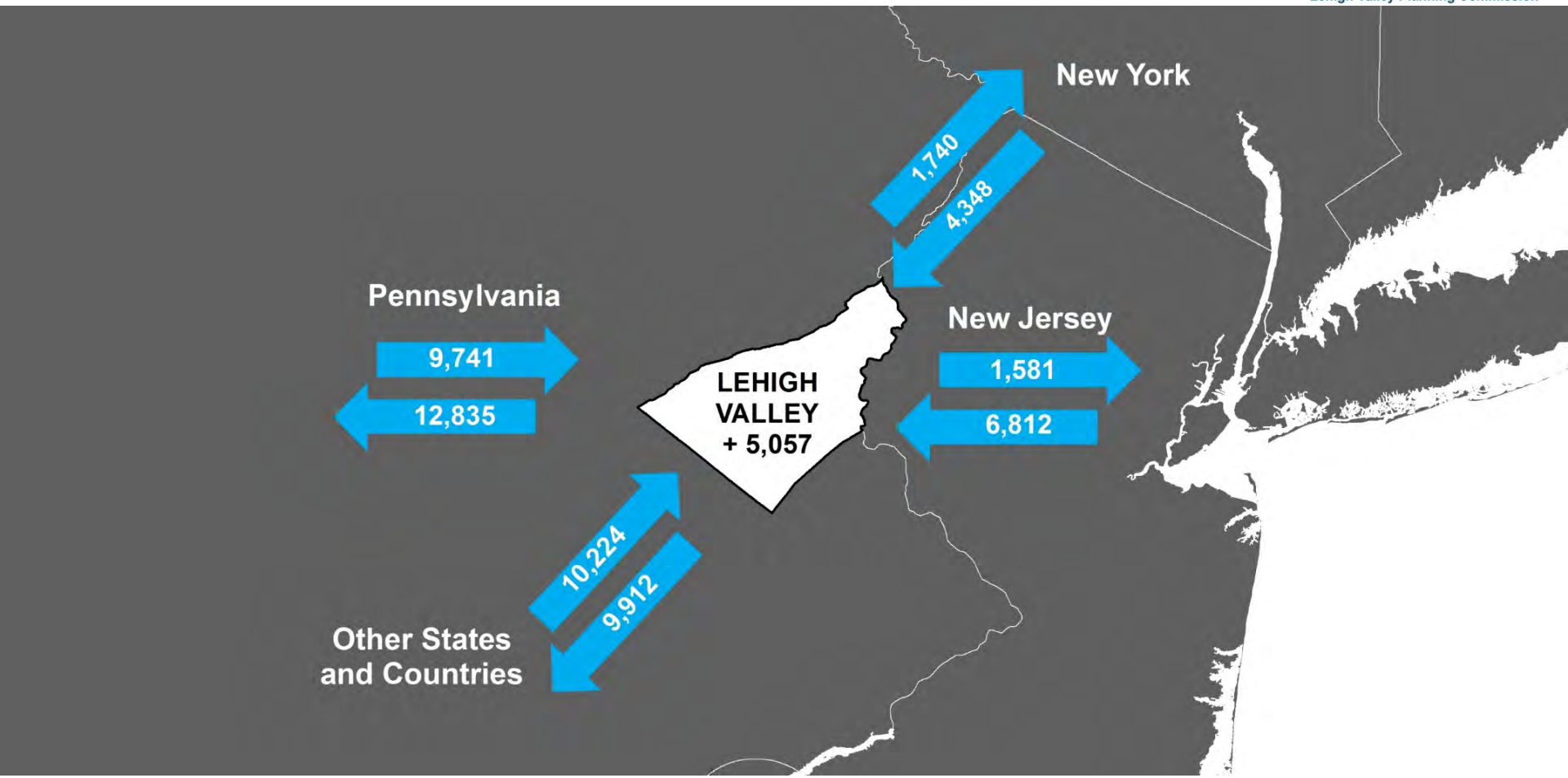
Planning for the Future of Lehigh + Northampton

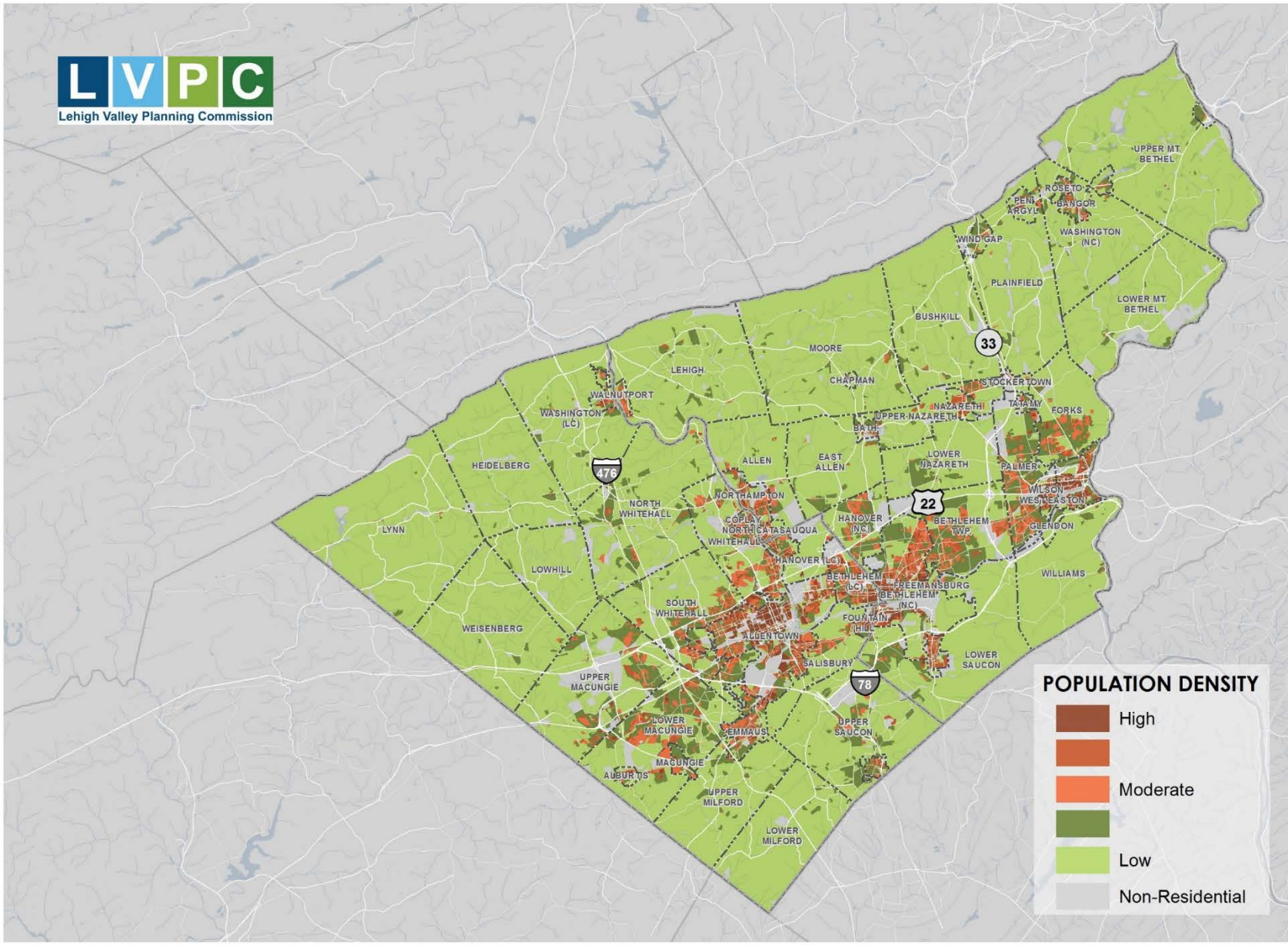
Population Growth



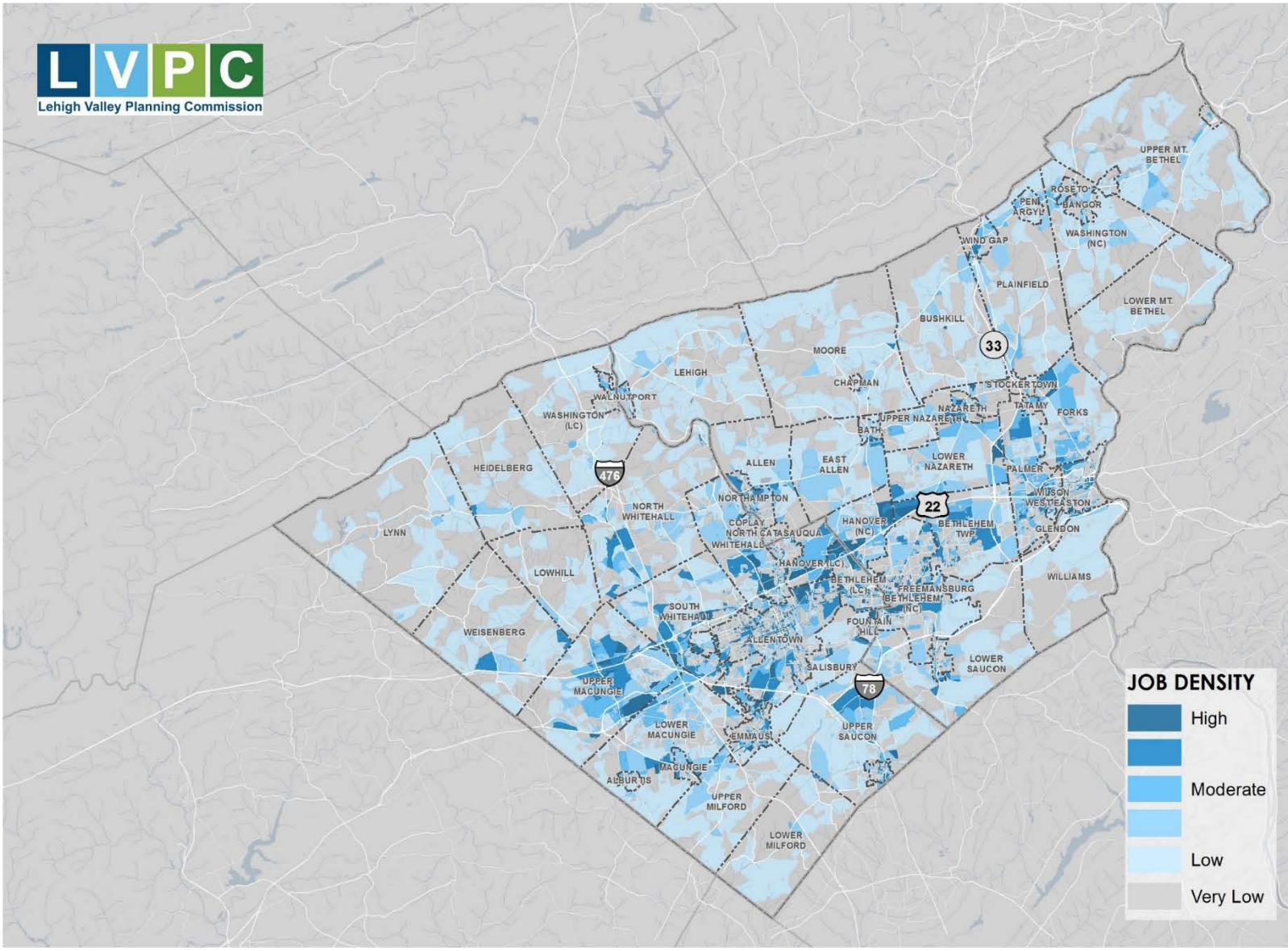
Population Migration (2006 – 2010)



Population Density



Job Density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JOB DENSITY
High
Moderate
Low
Very Low
33
22
78
476
UPPER MT. BETHEL
ROSETO
PEN ARGYL
BANGOR
WASHINGTON (NC)
WIND GAP
PLAINFIELD
LOWER MT. BETHEL
BUSHKILL
MOORE
LEHIGH
CHAPMAN
STOCKERTON
WALNUTPORT
WASHINGTON (LC)
NAZARETH
TATAMY
FORKS
UPPER NAZARETH
BATH
HEIDELBERG
ALLEN
EAST ALLEN
LOWER NAZARETH
PALMER
NORTHAMPTON
NORTH WHITEHALL
WILSON
WEST EASTON
COPLAY
NORTH CATASAUQUA
WHITEHALL
HANOVER (NC)
BETHLEHEM TWP.
GLENDON
LYNN
HANOVER (LC)
LOWHILL
BETHLEHEM (LC)
FREEMANSBURG
BETHLEHEM (NC)
WILLIAMS
SOUTH WHITEHALL
FOUNTAIN HILL
WEISENBERG
ALLENTOWN
SALISBURY
LOWER SAUCON
UPPER MACUNGIE
LOWER MACUNGIE
EMMAUS
UPPER SAUCON
MACUNGIE
ALBURTIS
UPPER MILFORD
LOWER MILFORD

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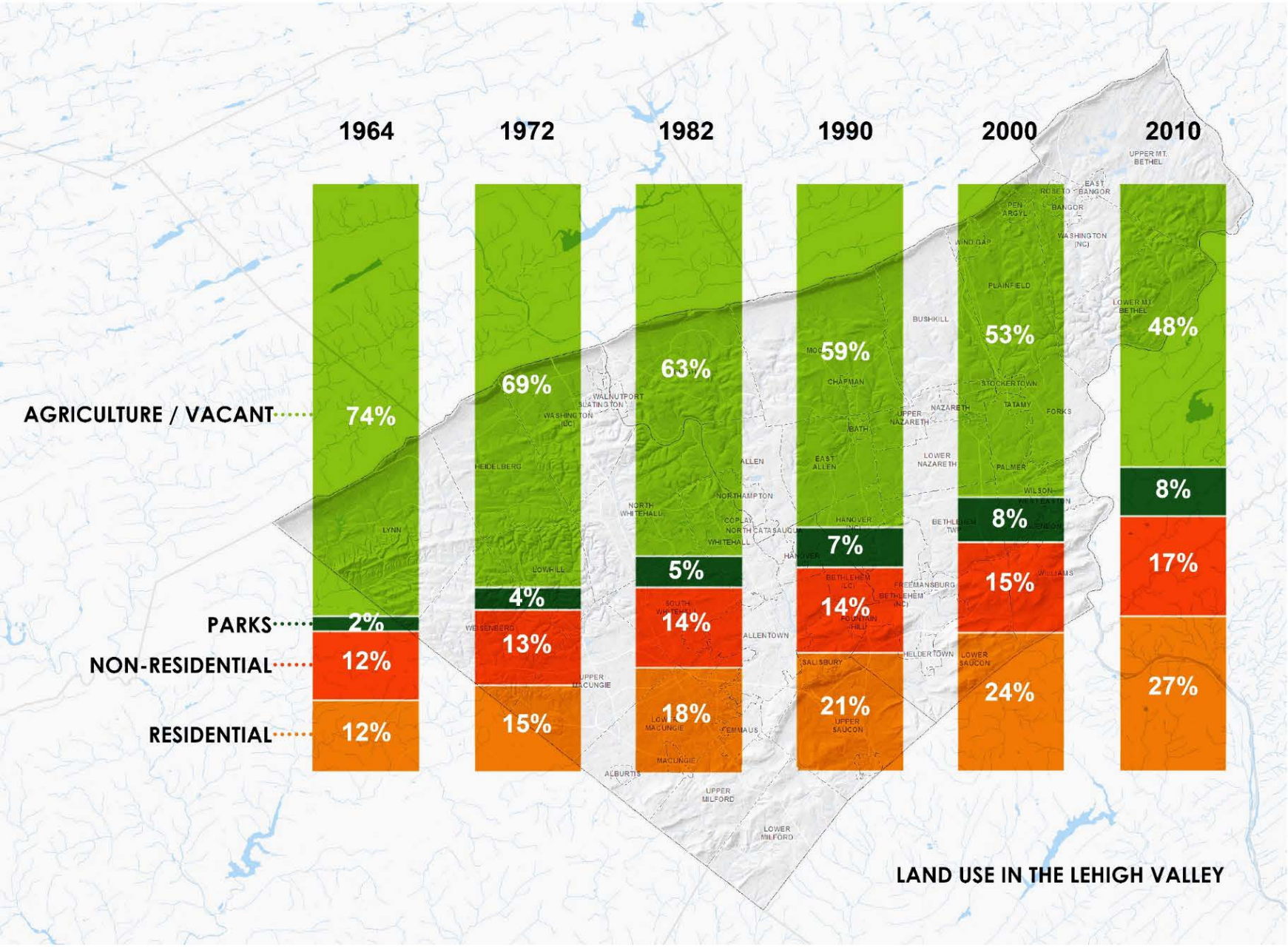
Job Flows



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Land Use

2015 Schedule

- Long Range Transportation Plan
  - Developing in conjunction with the Pennsylvania Long Range Transportation Plan
  - Timed with the development of the Turnpike Authority's LRTP
- Lehigh Valley Freight Movement Plan
  - Developing in conjunction with the Pennsylvania Freight Movement Plan & in conjunction with USDOT Freight efforts
- Both Plan to be released on June 30th at the Annual Transportation Summit in partnership with the Greater Lehigh Valley Chamber of Commerce

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Where are we with the Lehigh Valley Freight Movement Plan?

- Interview/Outreach Summary
- Freight Profile
  - Freight Flows
  - Products and Commodities
  - Freight Infrastructure Network
  - Performance and Conditions
  - Employment
- Options for Incorporating Freight in Project Selection Process
- Multi-Modal Facility Review
- Draft Goals and Policies

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Interview & Outreach Key Points

- 17 Interviews
  - Region well positioned
    - Transportation assets: Rail (including intermodal), Highway, Airport
    - Location and access to markets
  - Traffic congestion, especially in the I-78 & US 22 corridor.
  - Economy improving=increased freight movement=increased congestion.
  - Lack of truck parking.
  - CDL driver shortage.
  - Minimize at-grade crossings help move freight through the region faster.
  - Improve truck moves between intermodal facilities & major transportation corridors.
  - Need for continued coordination on freight issues.
  - Continue discussion of viability of multi-modal facilities.

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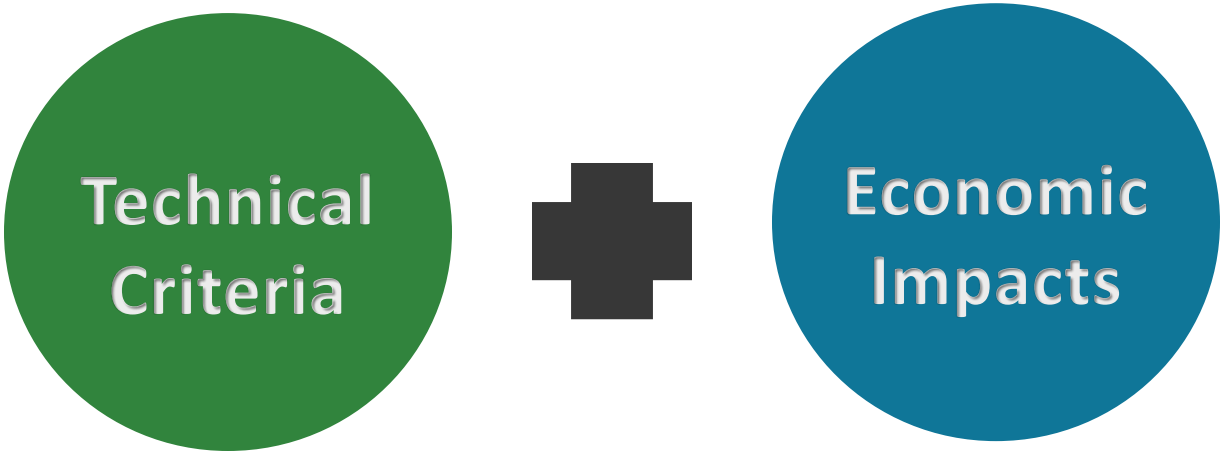
Project Prioritization Process



= Smarter Investment

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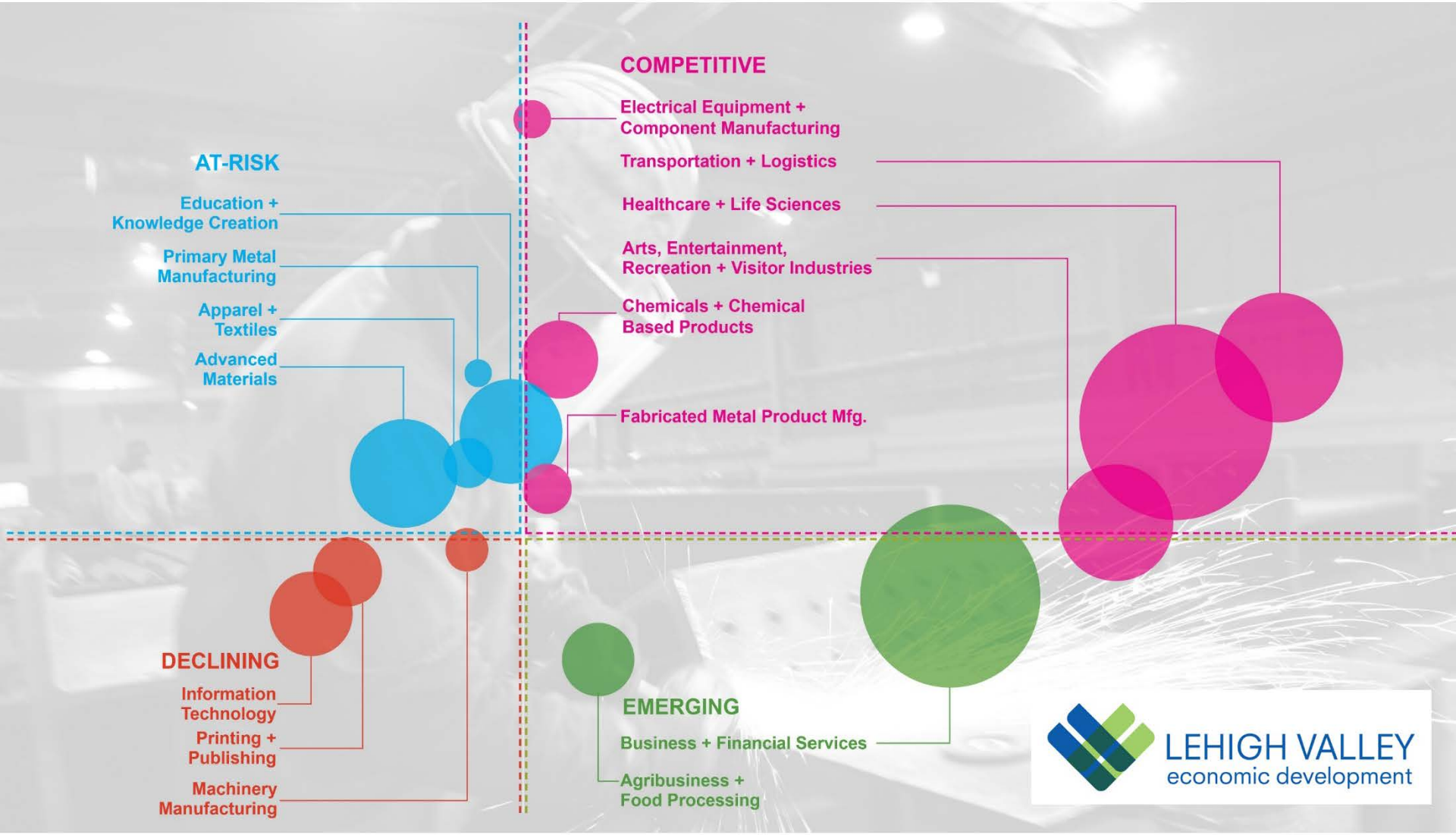
COMPETITIVE
Electrical Equipment + Component Manufacturing
Transportation + Logistics
Healthcare + Life Sciences
Arts, Entertainment, Recreation + Visitor Industries
Chemicals + Chemical Based Products
Fabricated Metal Product Mfg.
AT-RISK
Education + Knowledge Creation
Primary Metal Manufacturing
Apparel + Textiles
Advanced Materials
DECLINING
Information Technology
Printing + Publishing
Machinery Manufacturing
EMERGING
Business + Financial Services
Agribusiness + Food Processing
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MRS BAIRD'S

ORROWEAT

Stroehmann

THOMAS'

GARRETT'S

Crayola

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WAL-MART
WAL-MART


ONE KINGS LANE


TRADER
JOE'S


ULINE
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zulily


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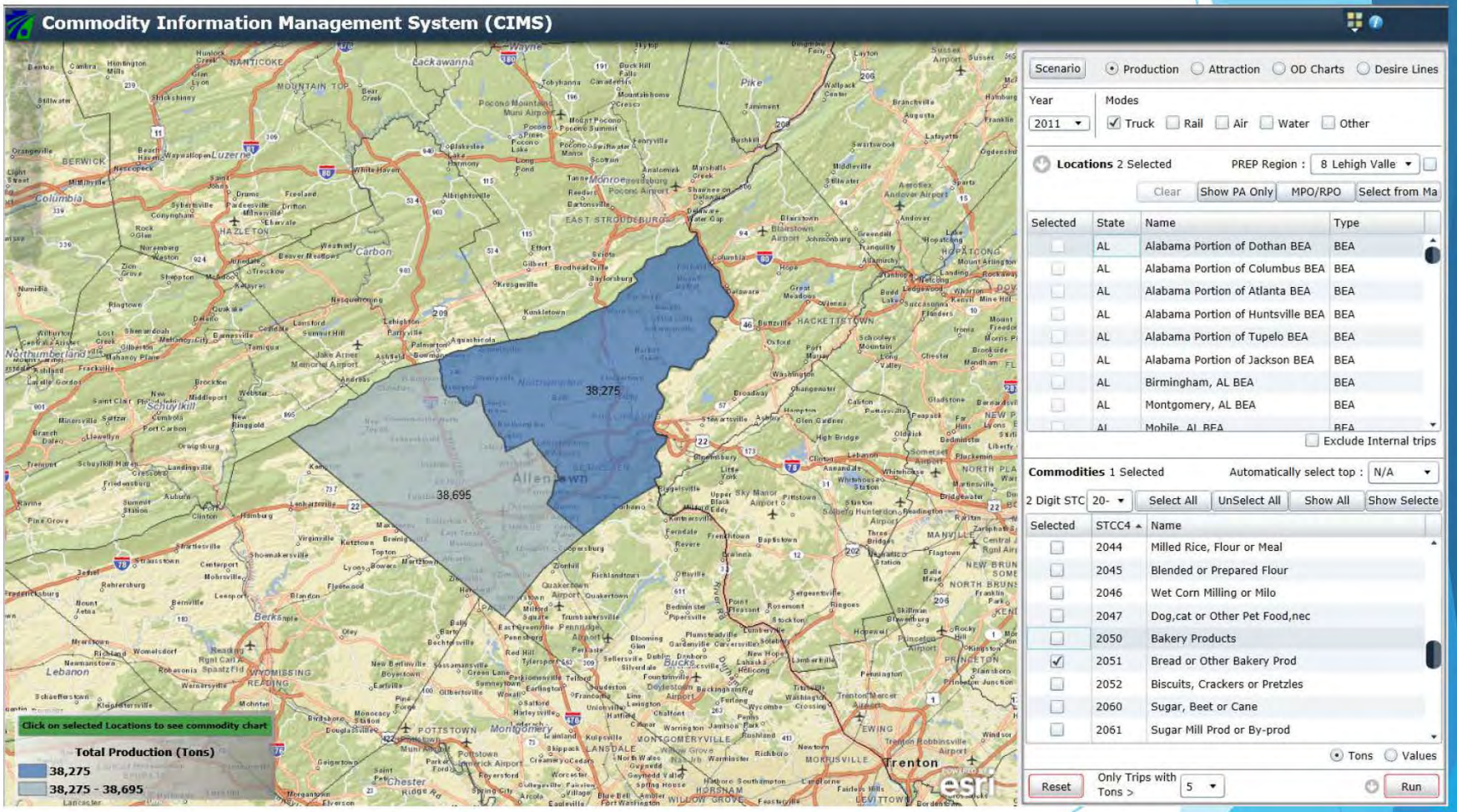
Commodity Information Management System Tool



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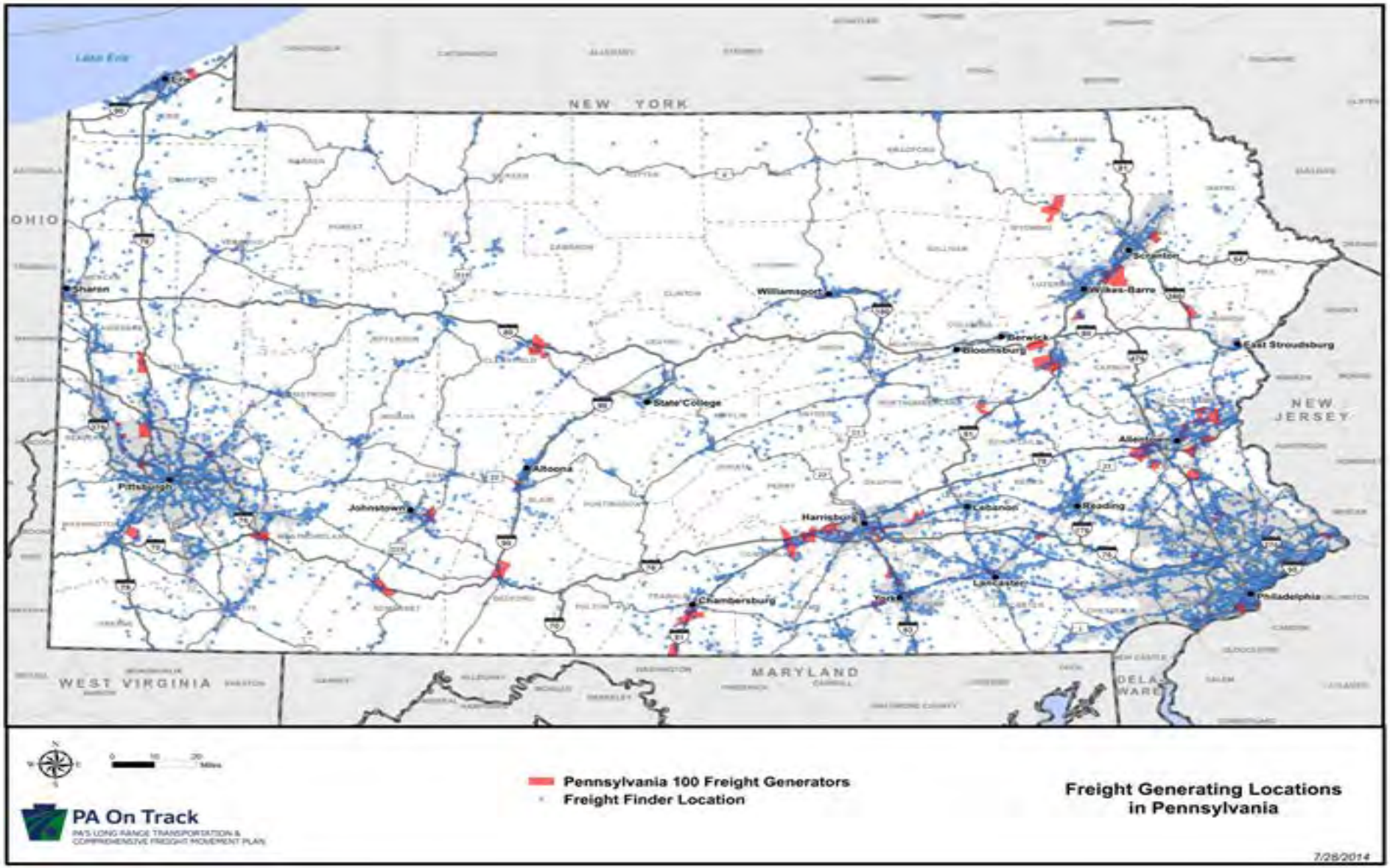
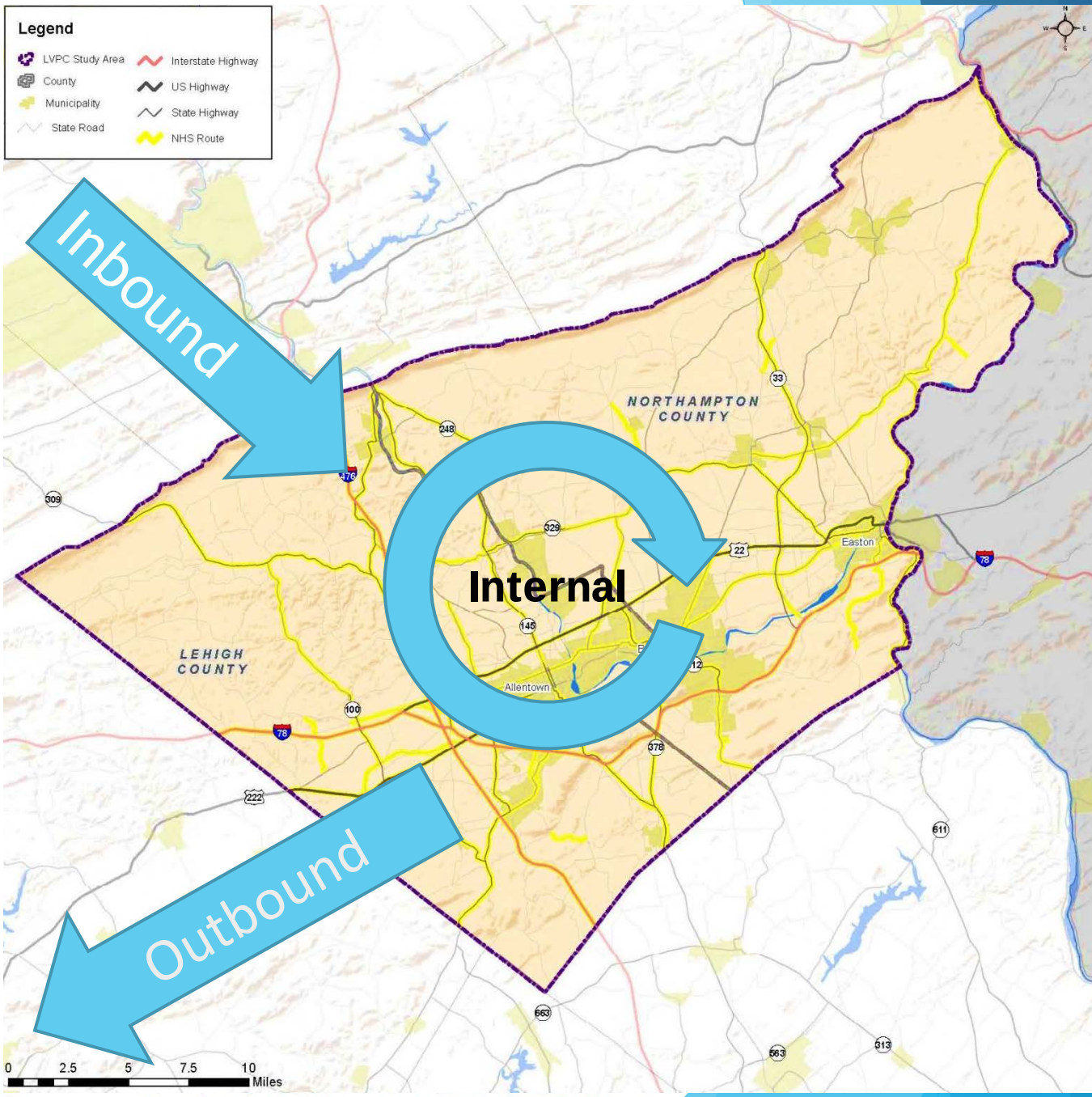
TRANSEARCH/Freight



Total Freight Today

	Tonnage (1,000)	
	Total	% Share
Truck	36,649.5	90%
Rail	4,208.4	10%
Air	10.2	<1%
Other	<1	<1%
Total	40,868.2	100%

	Value (millions)	
	Total	% Share
Truck	$43,679	85%
Rail	$5,743	11%
Air	$1,668	3%
Other	$0	<1%
Total	$51,090	100%



2040 Freight Forecast (Tonnage)

	Tonnage (thousands)							
	Inbound		Within		Outbound		**Total**	
	2011	***2040***	**2011**	***2040***	**2011**	***2040***	**2011**	***2040***
Truck	20,850.10	*36,015.95*	882.16	*2,490.58*	14,917.29	*35,384.75*	**36,649.55**	***73,891.28***
Rail	3,425.02	*4,758.13*	14.44	*18.84*	768.91	*1,504.56*	**4,208.38**	***6,281.53***
Air	8.51	*17.19*	-	-	1.67	*2.98*	**10.18**	***20.17***
Other	0.01	*.04*	-	-	0.08	*0.27*	**0.09**	***0.31***
Grand Total	**24,283.64**	***40,791.31***	**896.61**	***2,509.41***	**15,687.95**	***36,892.57***	**40,868.20**	***80,193.29***

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2040 Freight Forecast (Value)

	Value (millions)							
	Inbound		Within		Outbound		**Total**	
	2011	***2040***	**2011**	***2040***	**2011**	***2040***	**2011**	***2040***
Truck	$21,708	*$48,984*	$2,640	*$7,644*	$19,329	*$58,764*	$43,679	*$115,394*
Rail	$4,806	*$8,380*	$7	*$8*	$930	*$1,954*	$5,743	*$10,342*
Air	$1,426	*$3,408*	-	-	$242	*$437*	$1,668	*$3,845*
Other	-	-	-	-	-	*$1*	-	*$1*
Grand Total	**$27,940**	***$60,773***	**$2,647**	***$7,652***	**$20,501**	***$61,156***	**$51,090**	***$129,583***

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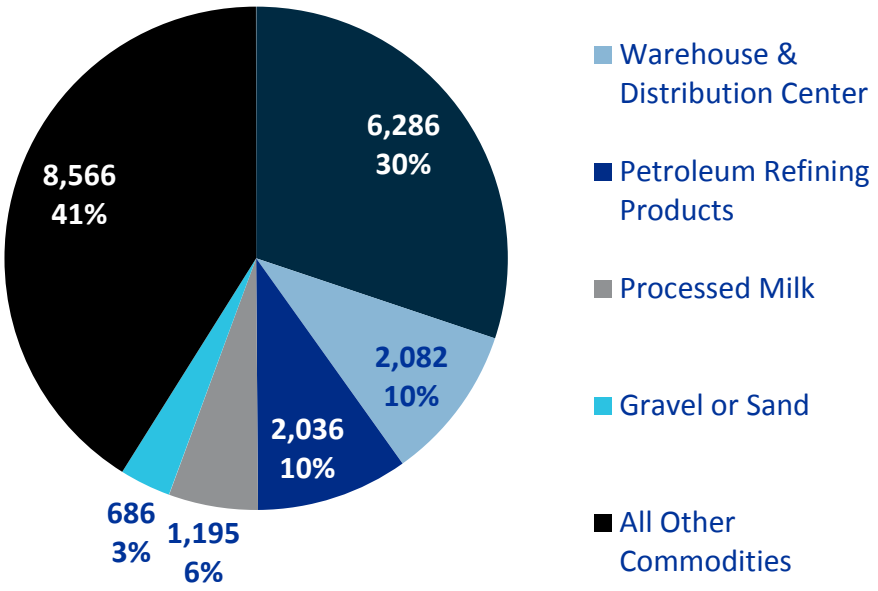
Top Five Lehigh Valley Inbound Truck Products by Tonnage

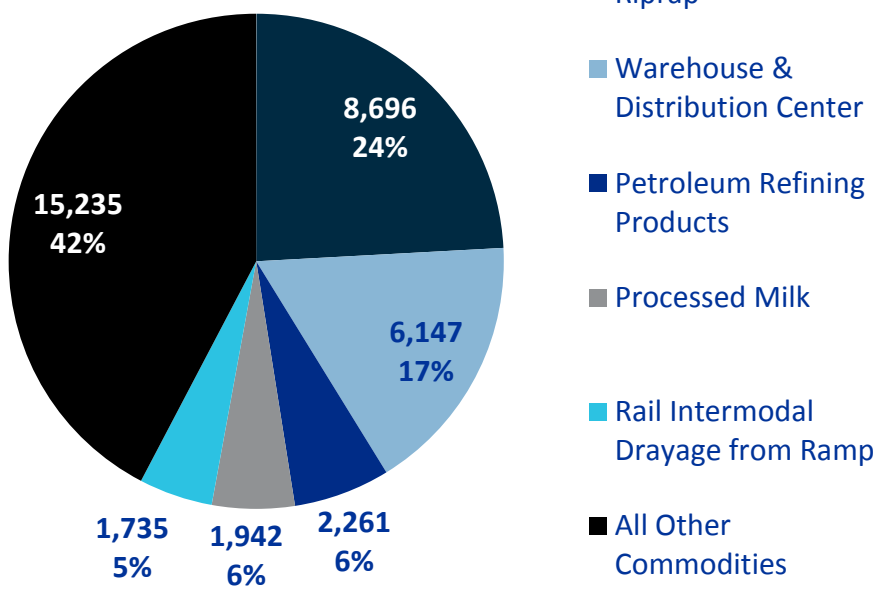
2011

Tons (1000s)



2040

Tons (1,000s)



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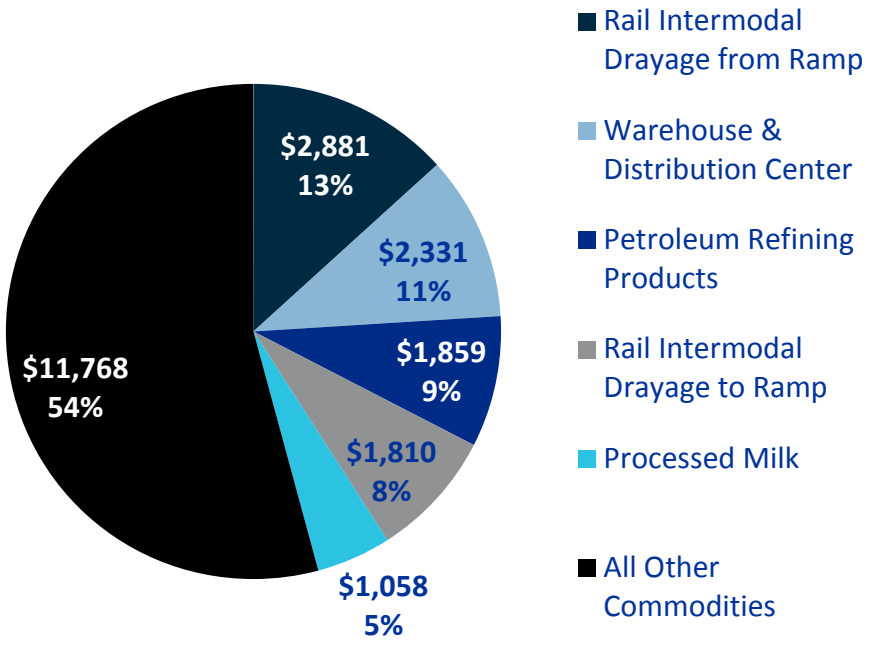
Top Five Lehigh Valley Inbound Truck Products by Tonnage and Value (2040)

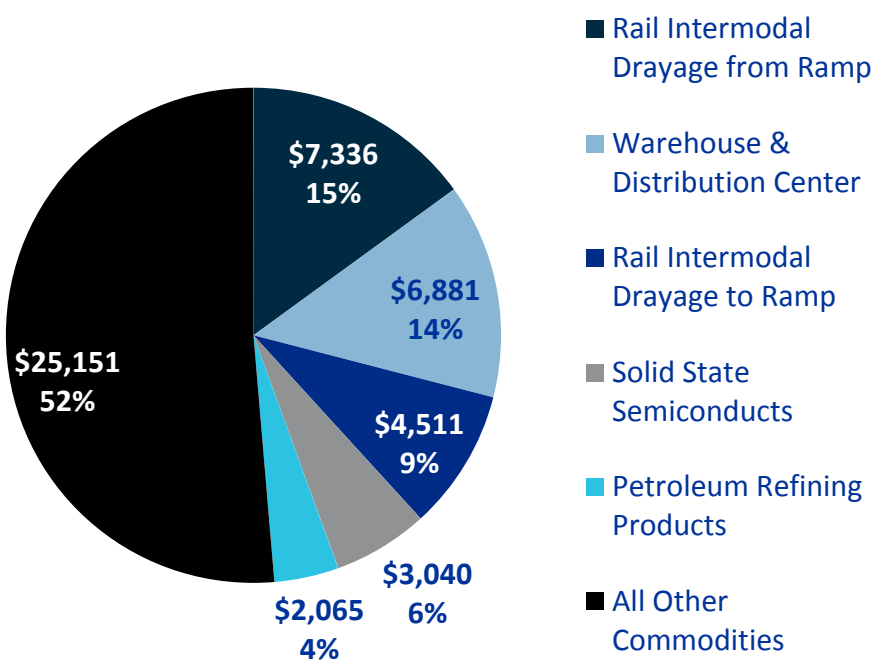
2011

Value (Millions)



2040

Value (Millions)



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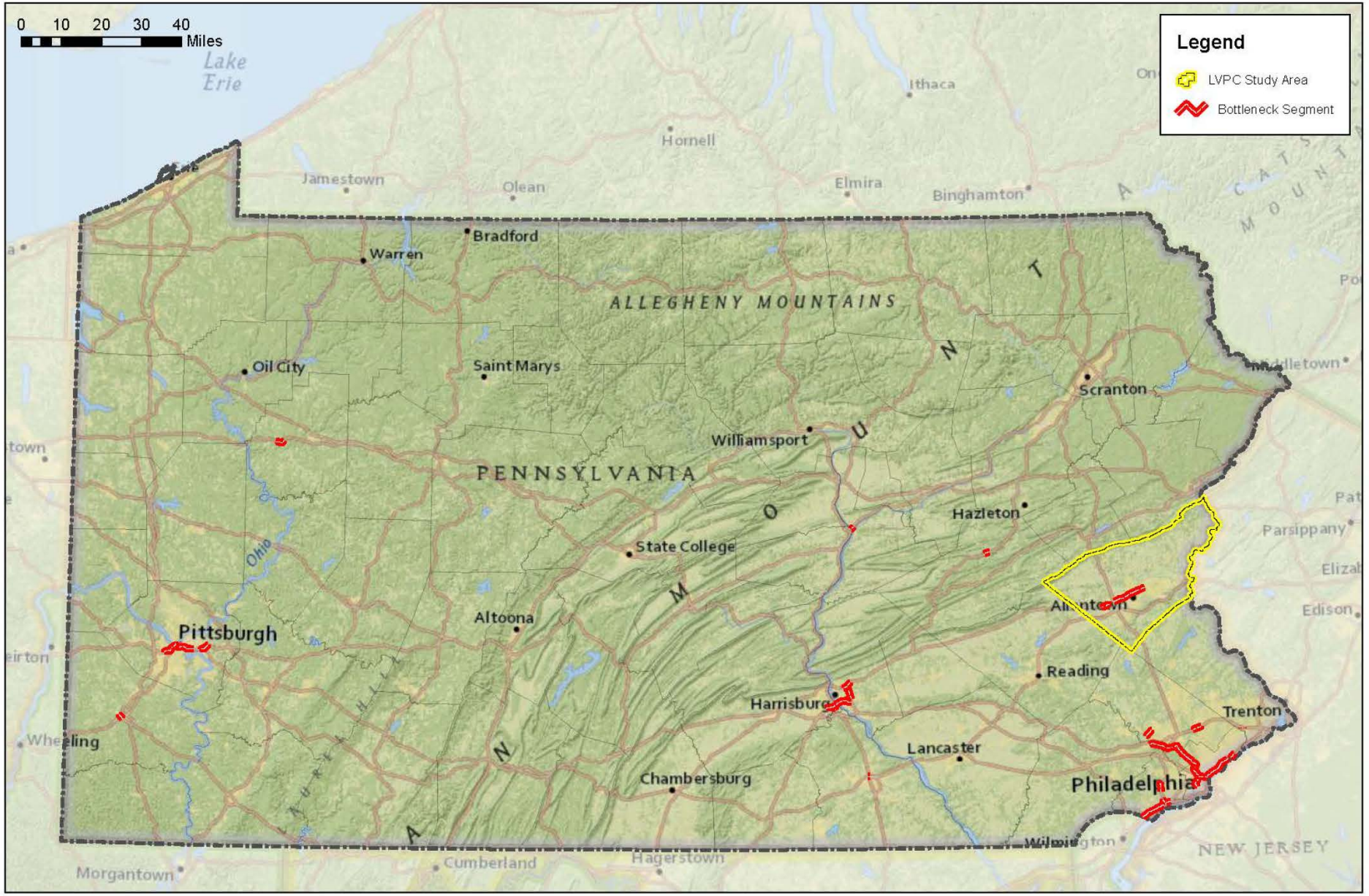
Source: IHS Transearch Global Insight

Statewide Bottlenecks



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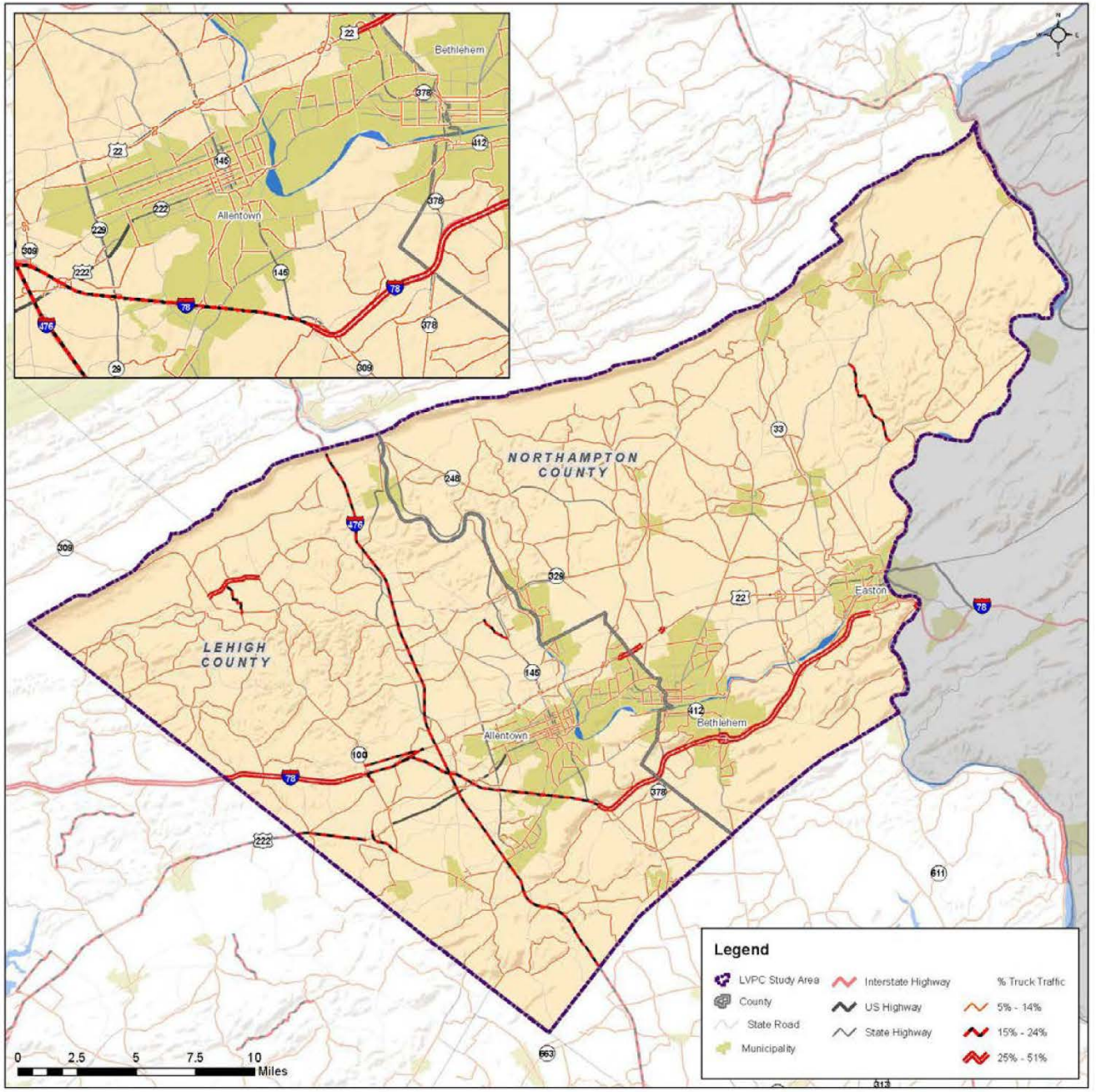
% Truck Traffic



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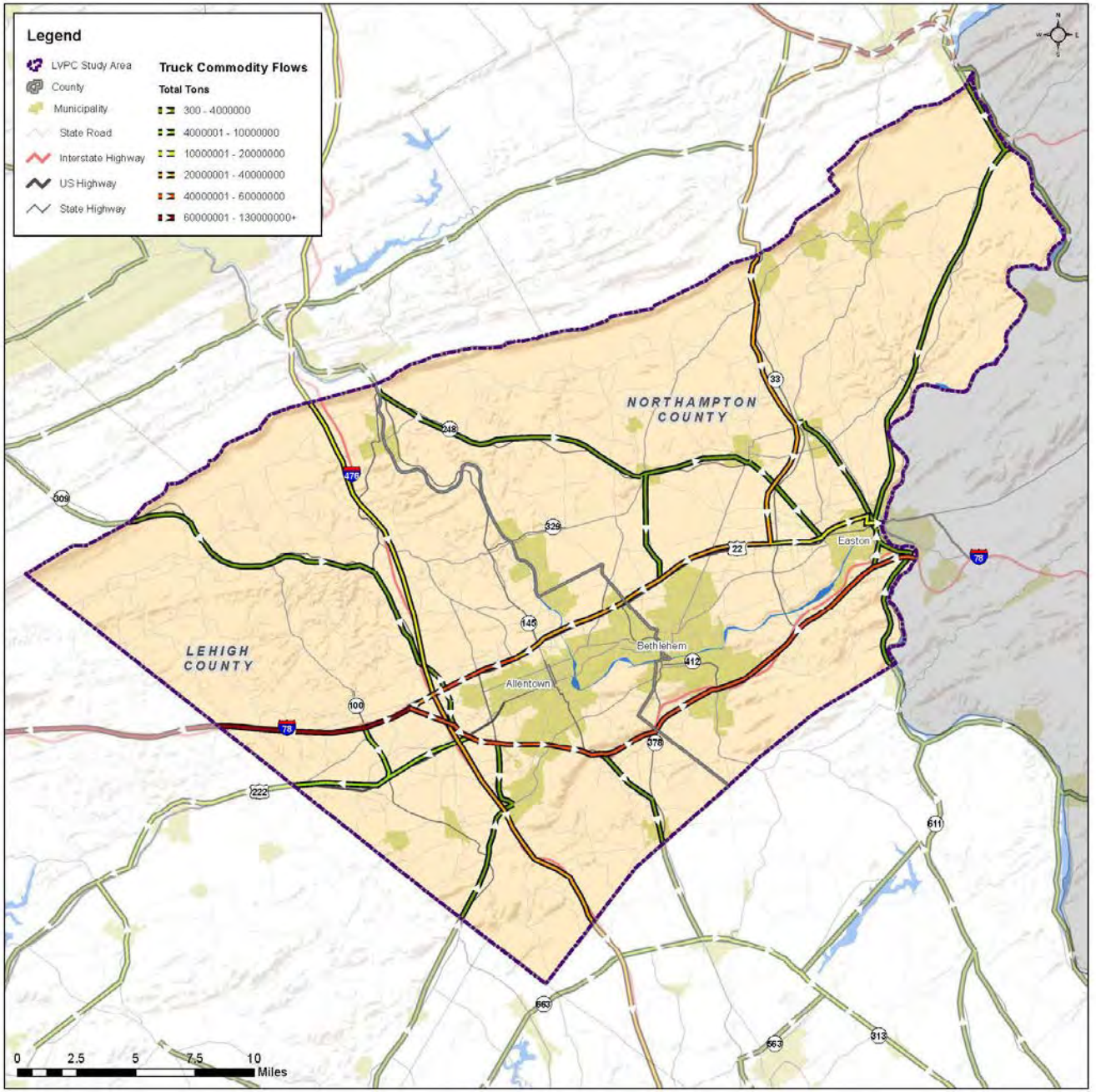
Tonnage Flow



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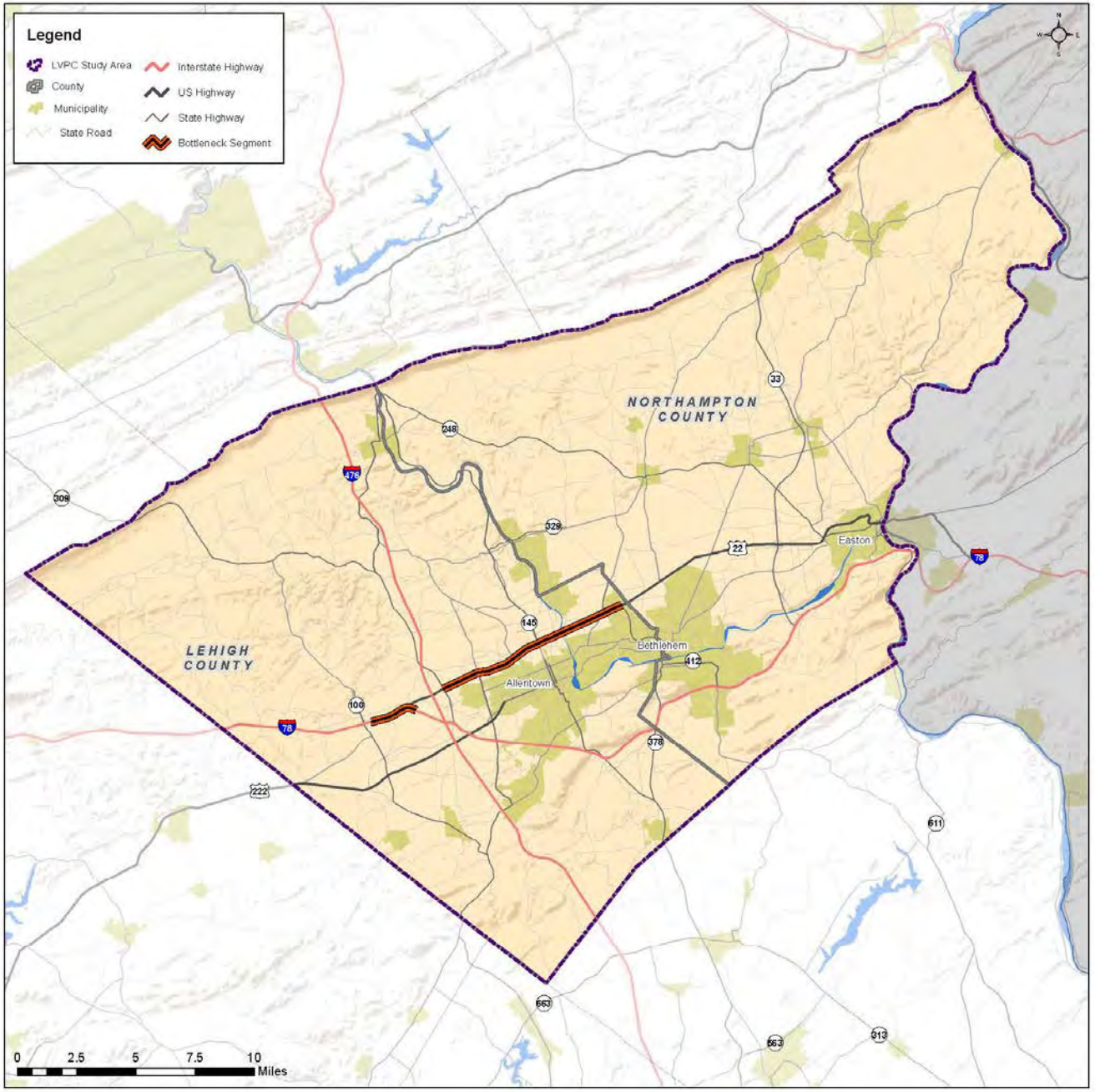
Regional Bottlenecks



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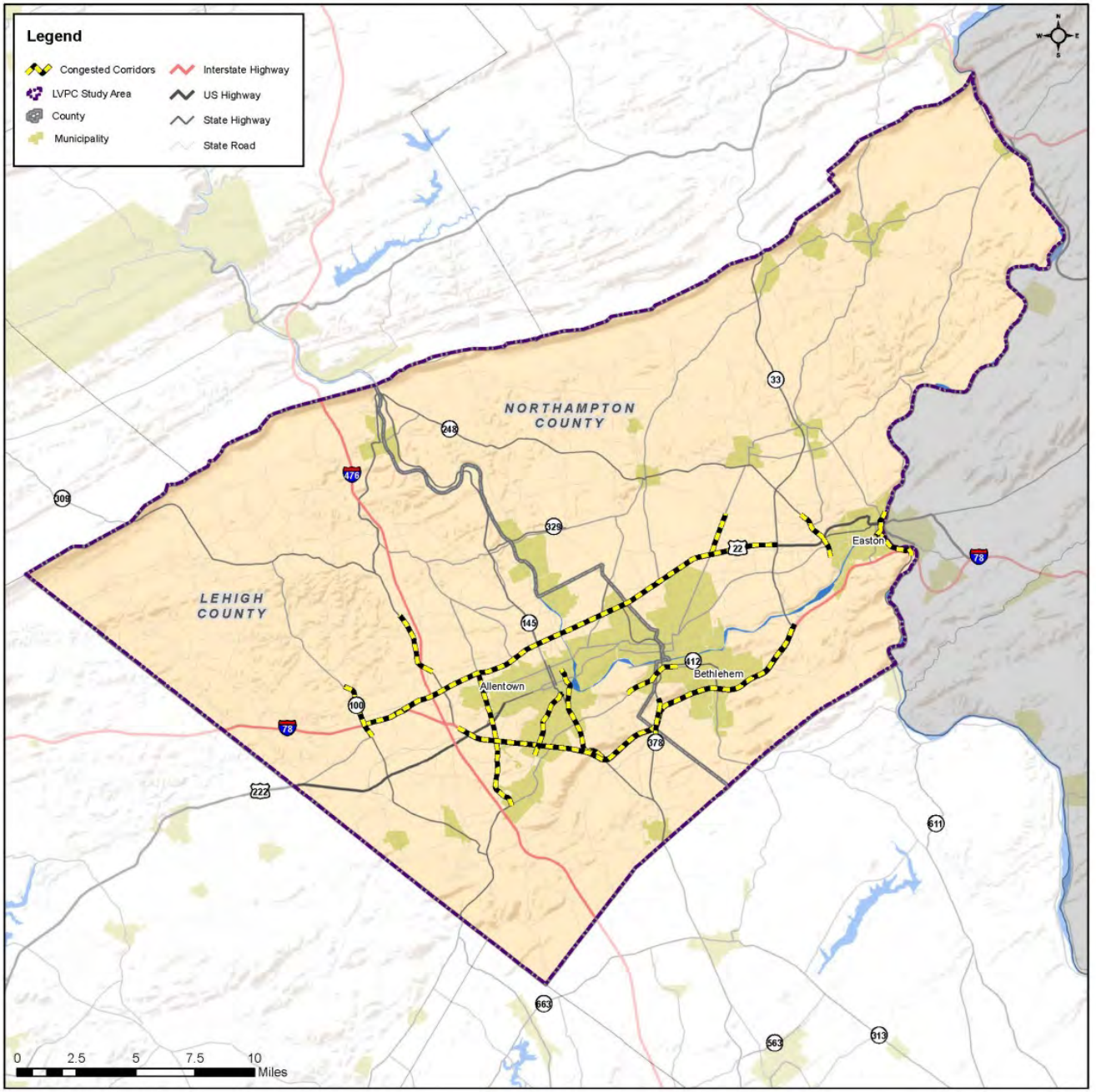
Congested Corridors



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PennDesign

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Next Steps

- Develop goals and policies for infrastructure investment prioritization
- Develop fiscal constraint plan totaling $3.3 billion
- Develop unmet needs chart for projects in excess of $3.3 billion cap
- Identify options for meeting unmet needs
- Complete and release both the Long-Range Transportation Plan and the Lehigh Valley Freight Movement Plan

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