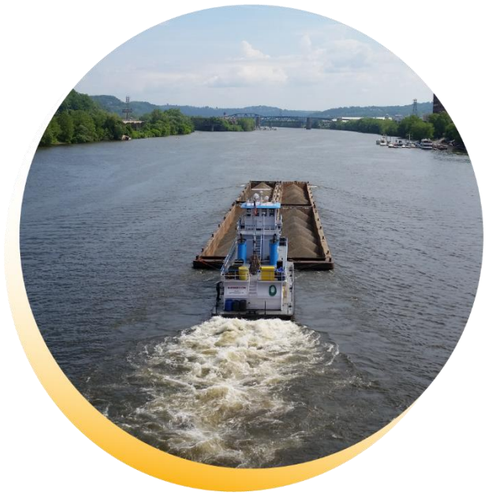

SOUTHWESTERN PENNSYLVANIA REGIONAL FREIGHT PLAN

FINAL DECEMBER 16, 2016

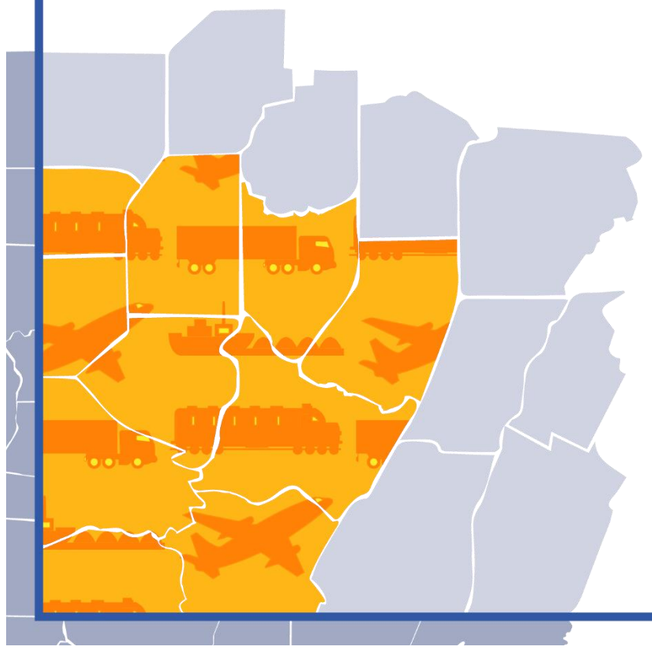

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Table of Contents

List of Exhibits

List of Technical Memorandums

NOTE: The overall freight planning process and development of the Southwestern Pennsylvania Regional Freight Plan was conducted over the course of approximately one year and included a series of eight technical memorandums as interim project submittals to SPC. This Final Plan is a compilation, summary, and refinement of those efforts, with a focus on an overall freight action plan and supporting tools to enhance SPC's freight planning capabilities into the future.

Separate from this Final Plan, additional research, outreach, data, and technical details on many of the freight planning topics addressed herein may be found exclusively within the interim technical memorandum submittals, which are available from SPC (upon request) and include the following:

11/25/2015

Technical Memorandum 1: Freight Transportation Assets, Features, and Attractors

11/25/2015

Technical Memorandum 2: Commodity Flow, Current & Future, for the Regional Planning Area

04/05/2016

Technical Memorandum 3: Freight Transportation Networks and Commodities

04/05/2016, Revised 05/05/2016

Technical Memorandum 4: Freight Challenges and Deficiencies

04/05/2016

Technical Memorandum 5: Identification of Freight Opportunities

05/26/2016

Technical Memorandum 6: National and Statewide Freight Priorities and Performance Management Perspectives

05/26/2016

Technical Memorandum 7: Freight Funding Programs and Opportunities

06/24/2016, Revised 08/02/2016

Technical Memorandum 8: Freight Implementation Recommendations

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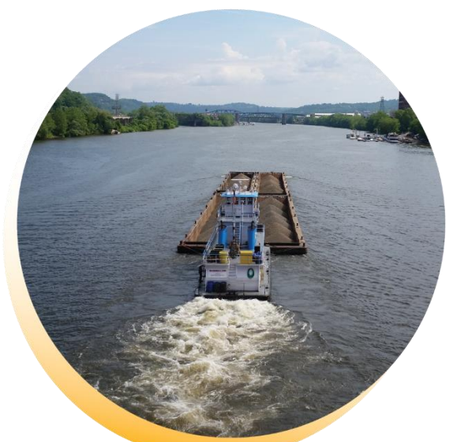

EXECUTIVE SUMMARY

SOUTHWESTERN PENNSYLVANIA REGIONAL FREIGHT PLAN

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Executive Summary

Introduction

Successfully providing for the efficient movement of goods is vital to any region's economy and sustainability. In the Southwestern Pennsylvania region, that task often co-exists alongside a series of complex relationships with the region's topography, past and present industrial trends, critical natural resources, or the quality and availability of its transportation assets.

To explore such relationships, the Southwestern Pennsylvania Commission (SPC), in their capacity as the designated Metropolitan Planning Organization (MPO) for the region, led the development of this *Southwestern Pennsylvania Regional Freight Plan*. Through this effort, SPC targeted strategic freight investigations to:

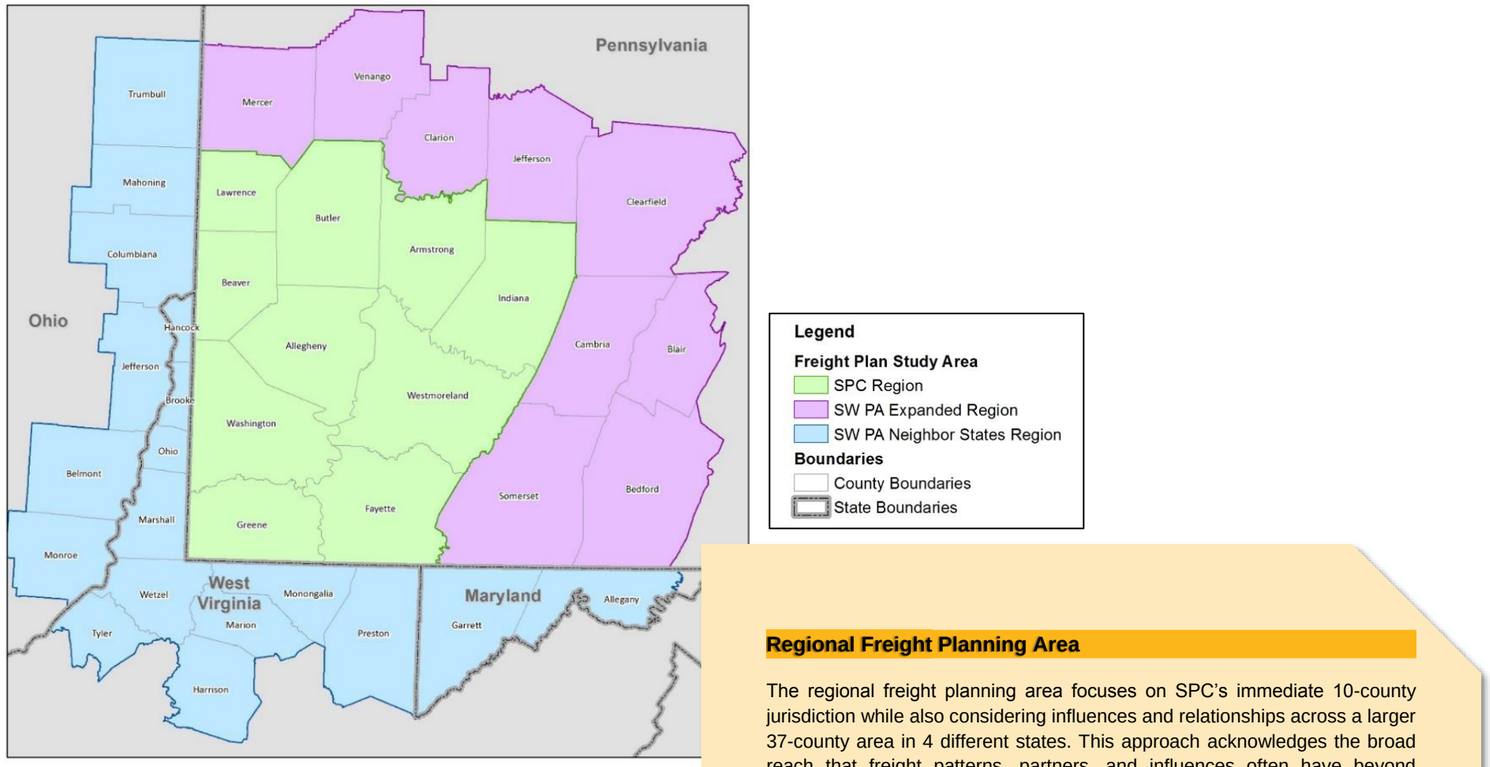
- Define, assess, and develop a more comprehensive understanding of today's multimodal freight transportation systems
- Identify future freight movement needs and opportunities through a horizon year of 2040
- Craft a strategic freight action plan that will assist in efforts to advance the coordinated use of the region's overall transportation resources
- Supplement SPC's long range transportation plan (LRTP), *Mapping the Future: The Southwestern PA Plan*
- Build upon findings from Pennsylvania's latest statewide LRTP, *PA On Track*, and the corresponding statewide *Comprehensive Freight Movement Plan* (CFMP)
- Consider federal freight planning revisions as defined by the *Fixing America's Surface Transportation Act* (FAST Act)

*The Regional Freight Plan complements SPC's **Regional Vision** for "transportation and land use that supports and enhances the regional economy and the communities within it".*

Mapping the Future: The Southwestern PA Plan, http://www.southwesternpaplan.org

This plan incorporates a multimodal freight transportation perspective that encompasses over 25,000 miles of highway; over 30 railroads, including 3 major Class I operators and 2 regional providers; waterway freight along the Allegheny, Monongahela, and Ohio Rivers, and through the Port of Pittsburgh as one of the busiest inland ports in the nation; connections for air cargo service through the Pittsburgh International Airport; and existing or planned intermodal or multimodal freight transfer centers across the region.

Exhibit ES-1: Regional Freight Planning Area



Regional Freight Planning Area

The regional freight planning area focuses on SPC's immediate 10-county jurisdiction while also considering influences and relationships across a larger 37-county area in 4 different states. This approach acknowledges the broad reach that freight patterns, partners, and influences often have beyond traditional jurisdictional boundaries. Collectively, this area includes:

Southwestern Pennsylvania / SPC Region: the study's focal area within the 10-county SPC jurisdiction encompassing Allegheny, Armstrong, Beaver, Butler, Fayette, Greene, Indiana, Lawrence, Washington, and Westmoreland Counties. The region covers 7,112 square miles with 548 municipal governments.

Southwestern Pennsylvania / Expanded PA Region: a 19-county area that considers the 10-county SPC Region plus the influence of 9 adjoining Pennsylvania counties including: Bedford, Blair, Cambria, Clarion, Clearfield, Jefferson, Mercer, Somerset, and Venango.

Southwestern Pennsylvania / Neighbor States Region: a broader 18-county addition that considers the multi-state influence of 6 counties in Ohio (Trumbull, Mahoning, Columbiana, Jefferson, Belmont, and Monroe); 10 counties in West Virginia (Hancock, Brooke, Ohio, Marshall, Wetzel, Tyler, Harrison, Marion, Monongalia, and Preston); and 2 counties in Maryland (Garrett and Allegany).

The Region's Freight and Commodities

Commodity Tonnage and Value

Based on IHS Global Insight Transearch data, in 2011 the 10-county SPC region handled over 201 million tons of freight worth approximately $124 billion across all modes. By 2040, projections estimate 40% growth in tonnage to more than 282 million tons, coupled with a 105% increase in value to more than $255 billion.

Exhibit ES-2: 2011-2040 Commodity Tonnage for the SPC 10-County Region

Freight Segment	2011 kTons	2040 kTons	Growth (kTons)	Growth (%)
Internal	48,467	73,386	24,919	51%
Outbound	70,963	105,378	34,415	48%
Inbound	81,935	103,350	21,415	26%
Total	**201,365**	**282,114**	**80,749**	**40%**

Exhibit ES-3: 2011-2040 Commodity Value for the SPC 10-County Region

Freight Segment	2011 Value ($000s)	2040 Value ($000s)	Growth ($000s)	Growth (%)
Internal	$9,144	$17,324	$8,180	89%
Outbound	$52,279	$105,578	$53,299	102%
Inbound	$63,081	$132,129	$69,048	109%
Total	**$124,504**	**$255,031**	**$130,527**	**105%**

Commodity Types

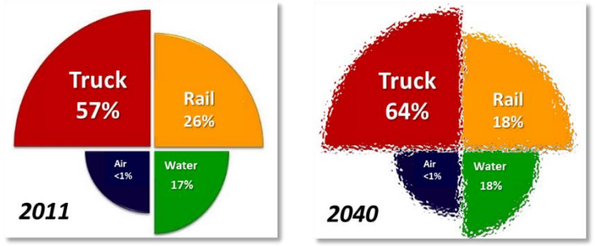
Commodity details by commodity type reveal that approximately 73% of the SPC region's overall tonnage consists of just 5 commodity groups including:

- 35% Coal
- 20% Non-Metallic Minerals
- 8% Petroleum or Coal Products
- 5% Primary Metal Products
- 5% Clay, Concrete, Glass, or Stone

Mode Shares

In 2011, trucks accounted for 57% of the tonnage moved within, to, or from the region, while rail and water also carried substantial amounts. These mode shares, however, vary significantly by commodity. For example, coal is split across modes with 14% by truck, 49% by rail, and 36% by water; whereas metallic ores move predominately by rail (87%), while food or farm products move almost exclusively by truck (98-99%).

Exhibit ES-4: Estimated Mode Shares for the SPC 10-County Region

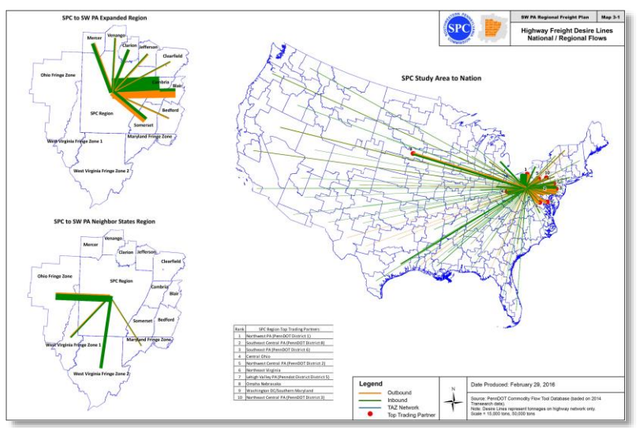


Commodity Flows and Trading Partners

Key trading partners for Southwestern Pennsylvania include most of its neighboring counties as well as more distant areas in the nortwest, central, and southeast portions of the state. Major out-of-state trading partners include Ohio, West Virginia, Maryland, and Viriginia; connections to various East Coast cities (e.g., Philadelphia or Baltimore) that may also serve as broader hubs for port or distribution activity to/from the region; and connections to the Omaha, Nebraska area, which lies directly along I-80 and is thought to reflect a major intermediate collection/distribution point for goods traveling to/from the West Coast.

Directionally, about one quarter of the region's freight tonnage moves internally within the region; 35% moves outbound from the region; and 41% is received inbound from outside the region.

Exhibit ES-5: National and Regional Freight Flow Patterns



County-Specific Details

Though partnered as one overall region, each county also has its own unique character with substantial variations in industries and commodity details. Such variations are explored and documented in Section 4 of the Regional Freight Plan under individual County Freight Profile sets.

Exhibit ES-6: Commodity Tonnage Variations by County

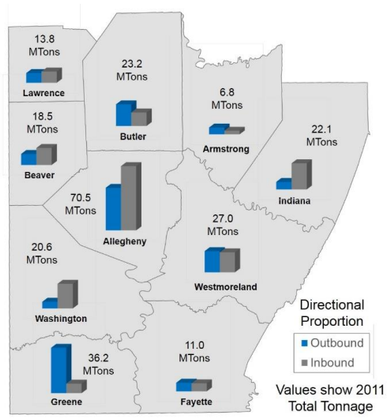
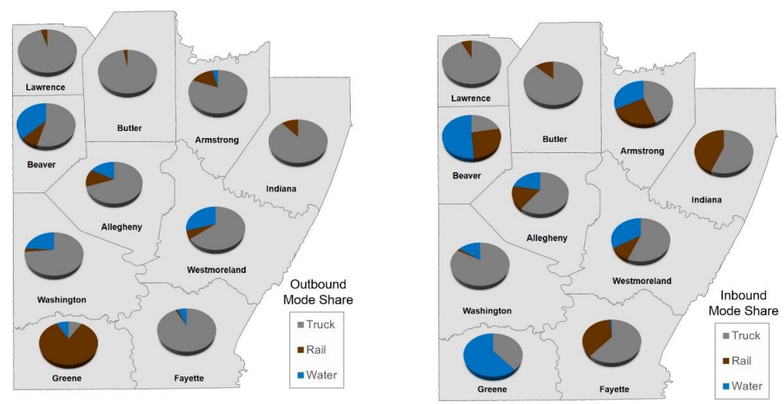


Exhibit ES-7: Mode Share Variations by County (Outbound and Inbound)



The Region's Freight Transportation Systems and Assets

Southwestern Pennsylvania's multimodal freight transportation systems link the region to its trading partners both locally and across the nation. The area is generally well-served with major assets across all modes; though these assets are not without their challenges. Topics such as aging infrastructure and modernization needs; shared-use conflicts and competing demands; or rapidly-changing local, regional, and global market influences all make it imperative that agencies and stakeholders maintain an understanding of how the systems work together, as well as their specific or localized nuances.

Regional Freight Assets At-a-Glance

Highways

- 25k roadway miles (57k in broader regional planning area)
- 10 Interstates (I-70, 76, 79, 80, 99, 279, 376; also I-68, 470, 680)
- 5 NHS Intermodal Connectors

Railroads

- 3 Class I Major Rail Carriers (NS, CSXT, CN)
- 2 Class II Regional Rail Carriers (BPRR, W&LE)
- 26 other Class III local or switching/terminal service providers
- 2 major intermodal sites (NS Pitcairn, CSX Pittsburgh (planned))
- Multiple rail yards, transloading facilities, or industry-specific sites

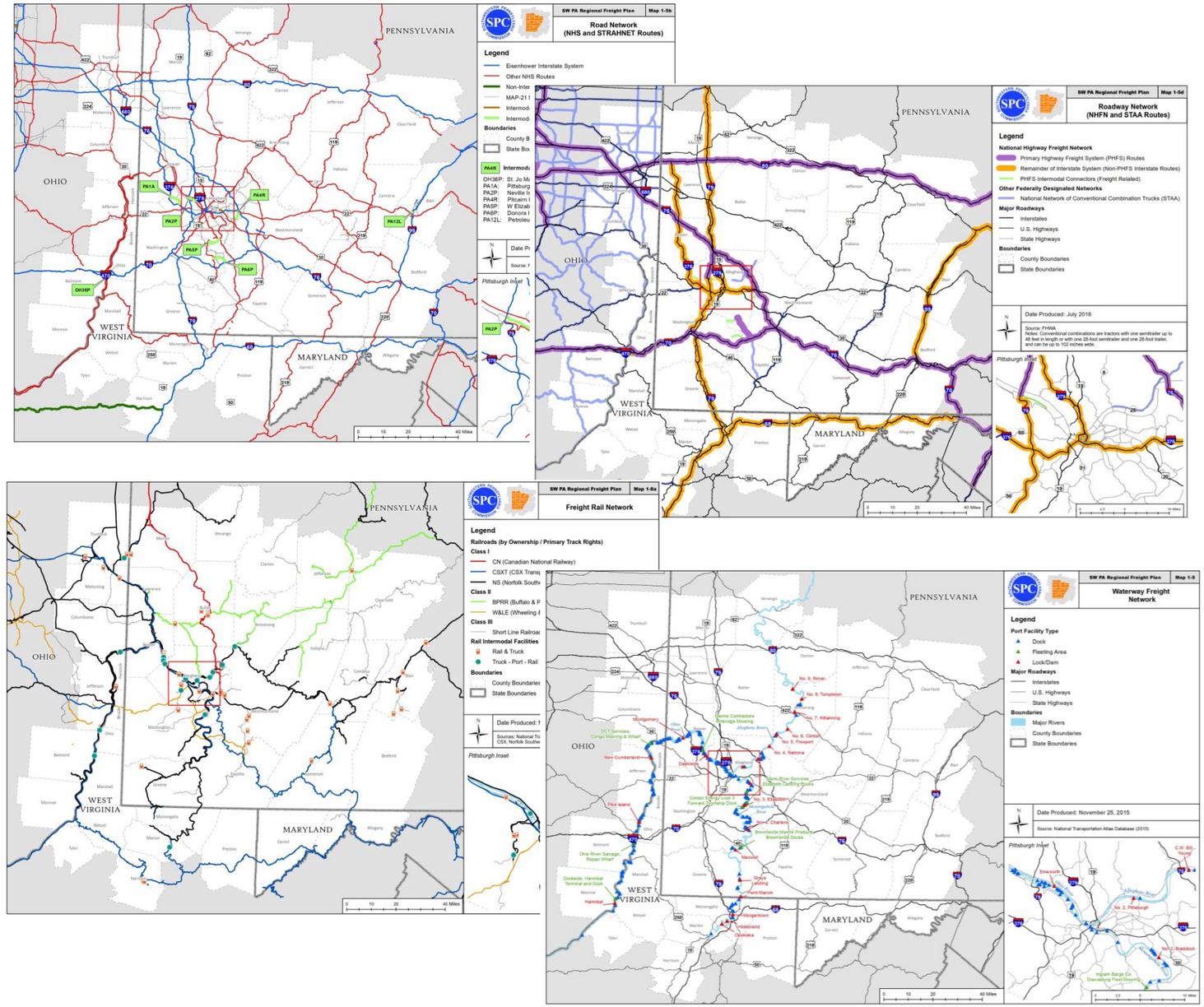
Inland Waterways

- Allegheny, Monongahela, and Ohio Rivers
- 17 lock & dam facilities in Pittsburgh Port District
- Links to Mississippi River and M-70/M-55 Marine Highways
- Links to Great Lakes and East Coast International Ports

Airports

- Pittsburgh International Airport and Air Cargo Terminal
- Numerous Regional/Local and General Aviation Airports

Exhibit ES-8: Sample Highway, Freight Network, Rail, and Waterway Maps included in the Regional Freight Plan



The Regional Freight Narrative

As part of the development of the Regional Freight Plan, relevant insights were drawn from a variety of task efforts that included background research and document reviews, technical data and mapping assessments, select driving tours and site visits, and an outreach/interview process to garner the perspectives of various public/private agencies, stakeholders, and planning partners. These efforts touched upon a broad array of topics and interests, challenges and deficiencies, and existing or future opportunities.

Collectively, these key freight planning insights tell different parts of a story that make up the region's overarching freight narrative – a shortlist of important freight topics or principles with common ground in terms of their notable impacts, influences, or possibilities relative to freight and goods movement across the region.

This narrative generally touches on ten major groups of topics that encompass planning and economic influences, freight transportation systems, and infrastructure conditions. These topics are summarized at right, and help to provide a basis for the formulation of the plan's regionally-relevant freight planning objectives and strategies.

Key Freight Stories in Southwestern Pennsylvania…

Economic effectiveness *through safe and efficient freight transportation systems is integral to successful freight planning.*

Waterway and rail assets *provide an inherent value to the region in terms of their transportation efficiencies and environmental benefits while also supporting modernized industries and products that affect everyday life.*

Freight relationships and partnerships *across a diversity of transportation modes, interests, and geographic scales are essential to exploring anything from first/last mile needs, to regional game-changing projects, to international trade.*

Shortline and regional rail connectivity *provides vital support for localized freight operations and a competitive advantage for freight-related business and industry sites throughout the region.*

Industrial parks and brownfield sites *demonstrate existing successes and future possibilities throughout the region, creating important hubs of freight activity through strategic and intentional development planning.*

Pittsburgh International and other regional airports *provide transportation links for limited high-priority air cargo, as well as crucial business and economic development assets that support key industries such as advanced manufacturing.*

Energy resources and related industry trends *make up a substantial part of the region's past, present, and future freight story, but also present unique challenges and opportunities that will continue to unfold over time.*

Effective asset management programs *that consider an enhanced integration of multimodal freight needs and issues will become more important amidst a reality of aging infrastructure, maintenance backlogs, and related challenges.*

Efficient highway operations *are critical for the movement of freight by truck throughout the region, access to and from individual industry sites, and effective modal integration with the region's rail, water, and air assets.*

Resiliency and redundancy *are critical to ensuring the continued availability of a reliable, robust, and integrated transportation network of roads, rail, waterways, and airports that are essential to freight and manufacturing in the region.*

Regional Freight Planning Objectives and Strategies

To fit within the context of federal and Pennsylvania state freight policy goals, as well as the general transportation planning vision of SPC's LRTP, this Regional Freight Plan supplements those resources through the inclusion of regionally-relevant freight planning objectives and strategies (Exhibit ES-9). The 13 objectives and corresponding sets of strategies were defined specifically to capture the freight needs and interests that were identified throughout the development of this plan.

The regional freight planning objectives outline a road map toward covering the most pertinent freight topics affecting or influencing Southwestern Pennsylvania, while the corresponding freight strategies offer "how-to" steps that SPC and its regional planning partners may consider to support and enhance freight transportation planning and goods movement opportunities across the region.

Exhibit ES-9: Regional Freight Planning Objectives and Strategies

ID	Objective / Strategy
1	**Interregional Freight Coordination**
	a) Multi-state/Megaregion Perspectives b) Regional Freight Partnerships c) Great Lakes Megaregion Interests d) Northeast or Piedmont Atlantic Megaregion Connections e) Regionally Significant Project Mapping/Monitoring
2	**Intraregional Freight Coordination**
	a) SPC Program/Process Coordination b) County Freight Profiles c) Localized Freight Outreach or Driving Tours d) Localized Freight Inventories, Studies, or Monitoring
3	**Freight Market and Economic Influences**
	a) Freight-Centric Population and Employment Growth Monitoring b) Freight-Centric Development Mapping/Database c) Regional Freight Market Focus Areas d) Ethane Cracker Plant Influences e) Post-Coal Market Options f) Planning and Regulatory Influences
4	**Freight Inventory and Mapping Resources**
	a) Freight Activity Area Mapping/Database b) Online Regional Freight Inventory c) Targeted Freight Inventory Research
5	**Freight Data and Analysis Resources**
	a) Truck Volume Data b) PennDOT Sign Database c) PennDOT Commodity Flow Tool d) Big Data Management (e.g., NPMRDS)
6	**Performance-Based Freight Planning Processes**
	a) Coordination with State Freight Performance Measurement Updates b) SPC Regional Freight Performance Monitoring c) SPC Regional Freight Project Screening d) Linking Planning and NEPA
7	**Freight Education and Outreach**
	a) Freight Forums b) Freight Pamphlets and Marketing Materials c) Freight Supply Chain Examples d) Modern Waterway Freight Transportation Summary e) Shortline Railroad's Role in Freight Transportation f) Community Level Freight Access and Mobility Needs

ID	Objective / Strategy
8	**Highway Freight Networks**
	a) Highway Network Connectivity Enhancements b) Regional Freight Network c) NHS Intermodal Connector Opportunities d) CRFC/CUFC Opportunities e) Interstate Emergency Detour Route Assessments
9	**Highway Freight System Operations & Maintenance**
	a) Highway System Operations Enhancements b) Infrastructure Bottleneck Management c) Congestion Bottleneck Management d) Advanced Technology Integration e) Localized Truck Parking/Staging Studies f) Urban Freight Delivery Studies g) Regulatory Influences and Relationships
10	**Rail Freight Systems**
	a) Rail Stakeholder, Planning, and Project Candidate Support b) Multimodal and Intermodal Rail Opportunities and Enhancements c) Shortline Rail Opportunities by County d) Regional Rail System Mapping/Database e) Regional At-Grade Highway/Rail Crossing Inventories and Assessments
11	**Inland Waterway Freight Systems**
	a) Waterway Freight Stakeholder, Planning, and Project Candidate Support b) Multimodal Waterway Freight Opportunities and Landside Connectivity c) River Accessible Industrial Site Preservation d) Lock and Dam Monitoring e) Waterway Needs Monitoring f) Container-on-Barge Trends g) Marine Highway Trends h) Regional Linkages to International Shipping Opportunities
12	**Air Cargo Systems**
	a) National/International Air Cargo Support b) Local/Regional Airport Economic Development Relationships c) Airport Access Enhancements d) Airport Warehousing Enhancements
13	**Modal Integration**
	a) Multimodal Corridor Management b) Multimodal Connectivity Support c) Intermodal Transportation Support

Specific objective statements include the following; strategy details may be found in Section 3 of the overall Regional Freight Plan:

OBJECTIVE 1: Interregional Freight Coordination

Achieve effective interregional freight coordination by coordinating, collaborating, and cooperating across interregional boundaries as well as agency, departmental, and stakeholder jurisdictions to enhance the state of freight transportation and goods movement opportunities to, from, through, and within the region.

OBJECTIVE 2: Intraregional Freight Coordination

Achieve effective intraregional freight coordination by coordinating, collaborating, and cooperating across intraregional boundaries as well as agency, departmental, and stakeholder jurisdictions to enhance the state of freight transportation and goods movement opportunities across the region, while also recognizing key variations in the freight needs and interests of the different sub-areas within the region.

OBJECTIVE 3: Freight Market and Economic Influences

Maintain a current perspective and general knowledge base of the potential economic, demographic, planning, or related freight market influences that generally serve as the driving forces behind freight and goods movement trends, opportunities, or supply chain patterns within the SPC region.

OBJECTIVE 4: Freight Inventory and Mapping Resources

Maintain, apply, and continue to enhance a comprehensive set of qualitative and quantitative freight planning processes and capabilities within SPC's staff and technical resources to support ongoing regional efforts relative to freight inventory and mapping resources.

OBJECTIVE 5: Freight Data and Analysis Resources

Maintain, apply, and continue to enhance a comprehensive set of qualitative and quantitative freight planning processes and capabilities within SPC's staff and technical resources to support ongoing regional efforts relative to freight data and analyses.

OBJECTIVE 6: Performance Based Freight Planning Processes

Maintain, apply, and continue to enhance a comprehensive set of qualitative and quantitative freight planning processes and capabilities within SPC's staff and technical resources to support ongoing regional efforts relative to performance-based freight planning/monitoring in coordination with federal and state requirements.

OBJECTIVE 7: Freight Education and Outreach

Develop and facilitate a variety of freight education and outreach opportunities, marketing materials, and related resources in partnership with the region's public and private sector freight experts and as a means to enhance a region-wide understanding of key freight topics, roles, issues, and goals across Southwestern Pennsylvania.

OBJECTIVE 8: Highway Freight Networks

Support the development, maintenance, and enhancement of a robust highway freight network that will help to advance SPC's Regional Vision and link effectively and efficiently to other freight transportation modes to facilitate freight and goods movement to, from, through, and within Southwestern Pennsylvania.

OBJECTIVE 9: Highway Freight System Operations & Maintenance

Support the strategic operation and maintenance of a robust highway freight system that will help to advance SPC's Regional Vision and link effectively, efficiently, and safely to other freight transportation modes to facilitate freight and goods movement to, from, through, and within Southwestern Pennsylvania.

OBJECTIVE 10: Rail Freight Systems

Support the viability and integrity of the region's Class I, II, and III freight rail networks and related systems that will help to advance SPC's Regional Vision and facilitate freight and goods movement to, from, through, and within Southwestern Pennsylvania.

OBJECTIVE 11: Inland Waterway Freight Systems

Support the viability and integrity of the region's inland waterway freight/barge transportation systems that will help to advance SPC's Regional Vision and facilitate freight and goods movement to, from, through, and within Southwestern Pennsylvania.

OBJECTIVE 12: Air Cargo Systems

Support the viability and integrity of the region's air cargo systems, key airports, and airport business opportunities that will help to advance SPC's Regional Vision and facilitate freight and goods movement to, from, through, and within Southwestern Pennsylvania.

OBJECTIVE 13: Modal Integration

Support partnerships, opportunities, and infrastructure improvements that will enhance the region's ability to integrate freight transfer between modes, thereby supporting existing freight markets, expanding new freight market possibilities, and maximizing the multimodal efficiency and utilization of the region's overall freight transportation system.

Additional Freight Planning Resources

In addition to the regional freight context, narrative, objectives and strategies, the Regional Freight Plan also outlines additional resources to help guide or inform future planning efforts by SPC. These resources explore regional freight network concepts, freight funding, freight performance measures, and freight-relevant project or study candidates. Additionally, Section 4 of the overall Regional Freight Plan includes a series of County Freight Profiles that organize much of the plan's content on a county-specific basis to help simplify the presentation of so many details and facilitate ongoing coordination with SPC's county and local planning partners or stakeholders.

Regional Freight Network Concepts

An important component of this Regional Freight Plan is a proposed concept for establishing a Southwestern Pennsylvania Regional Highway Freight Network and Regional Multimodal Freight Corridors that would supplement existing or proposed federal or state designated highway freight networks and multimodal freight networks. It is anticipated that SPC and their planning partners will continue to evolve these concepts over time. During that evolution, it will be important to explore ways in which the regional networks may influence or supplement federally-designated components or regional planning processes in a manner that enhances freight planning capabilities and opportunities in and around Southwestern Pennsylvania.

The Southwestern Pennsylvania Regional Highway Freight Network would build upon federally-designated routes on the National Highway Freight Network (NHFN) established by the FAST Act (see call-out boxes at right). FHWA data for Pennsylvania identify statewide NHFN mileage as:

- **1,872.57** total NHFN miles (3.4% of the national total)
- **1,412.64** centerline miles of PHFS roadway
- **459.92** centerline miles of non-PHFS interstates
- **282.53** maximum allowable CRFC miles (to be identified by the state, in consultation with MPOs)
- **141.26** maximum allowable CUFC miles (to be identified by MPOs, in consultation with the state)

Concepts for a proposed Southwestern Pennsylvania Regional Highway Freight Network and Regional Multimodal Freight Corridors (Exhibits ES-10 and 11) were introduced to supplement established federal networks and ensure a more thorough and robust picture of the region's freight transportation links and how they serve the specific freight transportation, access, and connectivity needs of Southwestern Pennsylvania.

What is the National Highway Freight Network?

The FAST Act repealed both the Primary Freight Network and National Freight Network that were previously designated under MAP-21, and directed the FHWA Administrator to establish a National Highway Freight Network (NHFN) to strategically direct federal resources and policies toward improved performance of highway portions of the U.S. freight transportation system. The NHFN includes the following subsystems of roadways:

- **Primary Highway Freight System (PHFS):** This is a network of highways identified as the most critical highway portions of the U.S. freight transportation system determined by measurable and objective national data. The network consist of 41,518 centerlines miles, including 37,436 centerline miles of Interstate and 4,082 centerline miles of non-Interstate roads.
- **Other Interstate portions not on the PHFS:** These highways consist of the remaining portion of Interstate roads not included in the PHFS. These routes provide important continuity and access to freight transportation facilities. These portions amount to an estimated 9,511 centerline miles of Interstate nationwide, and will fluctuate with additions to and deletions from the Interstate Highway System.
- **Critical Rural Freight Corridors (CRFCs):** These are public roads not in an urbanized area that provide access and connection to the PHFS and the Interstate with other important ports, public transportation facilities, or other intermodal freight facilities.
- **Critical Urban Freight Corridors (CUFCs):** These are public roads in urbanized areas that provide access and connection to the PHFS and the Interstate with other ports, public transportation facilities, or other intermodal transportation facilities.

What is the proposed Southwestern Pennsylvania Regional Highway Freight Network?

The proposed concept for a Southwestern Pennsylvania Regional Highway Freight Network would supplement federal or state designated highway freight networks to provide a more complete inventory of the key corridors and connections that serve the region's freight movement needs. It is anticipated that SPC and their planning partners will evolve this concept over time. The initial concept details a system of corridors according to the following route tiers:

- **NHFN Routes** – as designated on the federal NHFN.
- **Regional Routes** – not on the NHFN, but typically include major corridors that carry freight through the 10-county region and/or provide important linkages to its surrounding areas.
- **Intercounty Routes** – not on the NHFN, but typically include important corridors that link freight flows between counties inside the SPC region, though not necessarily from a through-route perspective as per the Regional Routes.
- **Connector Routes** – not on the NHFN, but typically include important corridors that link the Regional or Intercounty Routes with other parts of the highway system, and/or that serve freight travel to/from larger freight activity sites or clusters.
- **First/Last Mile Connections** – an additional detailed tier of important roadway connections that would typically link specific freight origin/destination sites with connector routes or other components of the freight transportation system. This level of detail was not addressed in the initial concept for the Regional Highway Freight Network, but may be a topic of interest for future planning studies or inventories.

Exhibit ES-10: Proposed Southwestern Pennsylvania Regional Highway Freight Network Concept

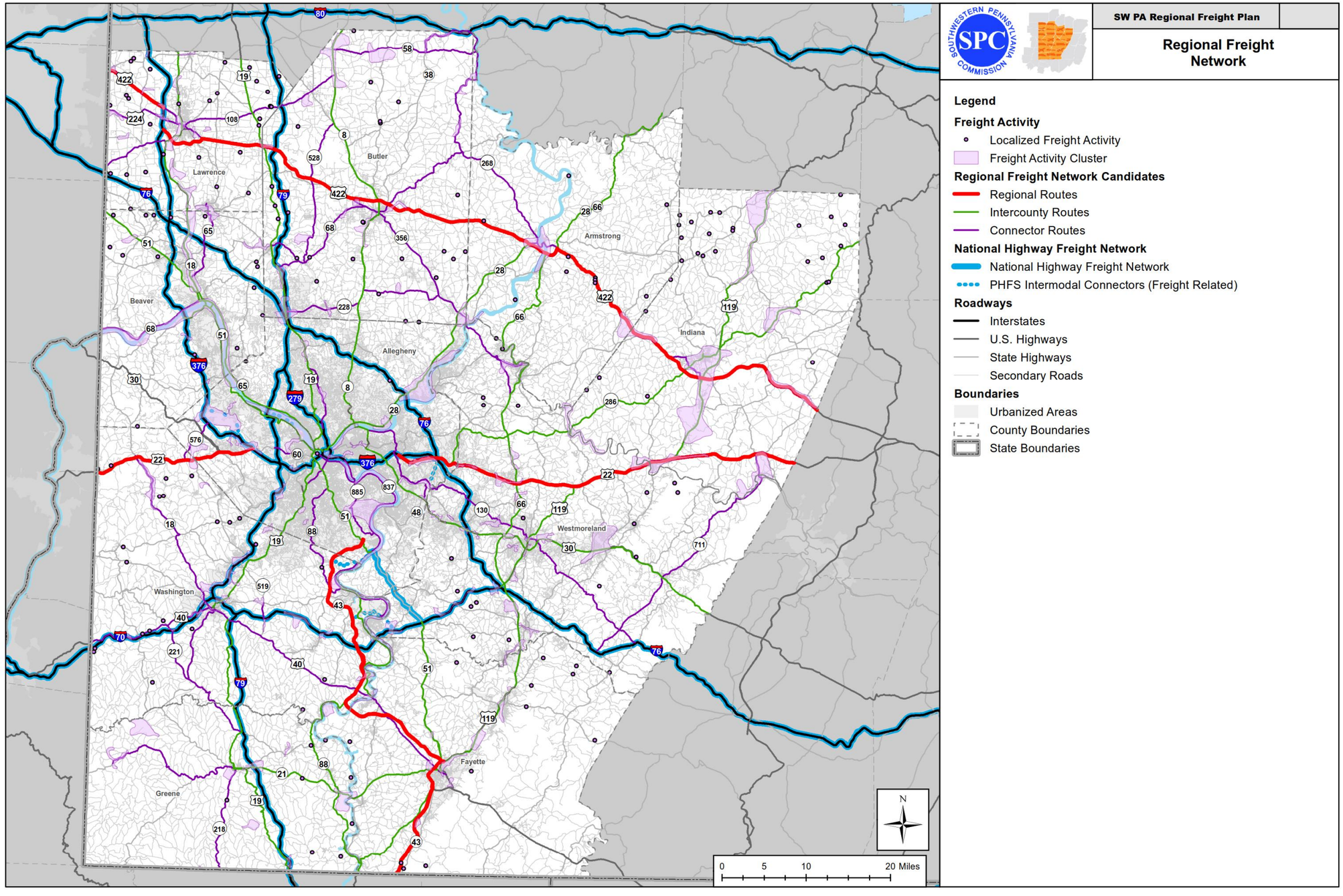
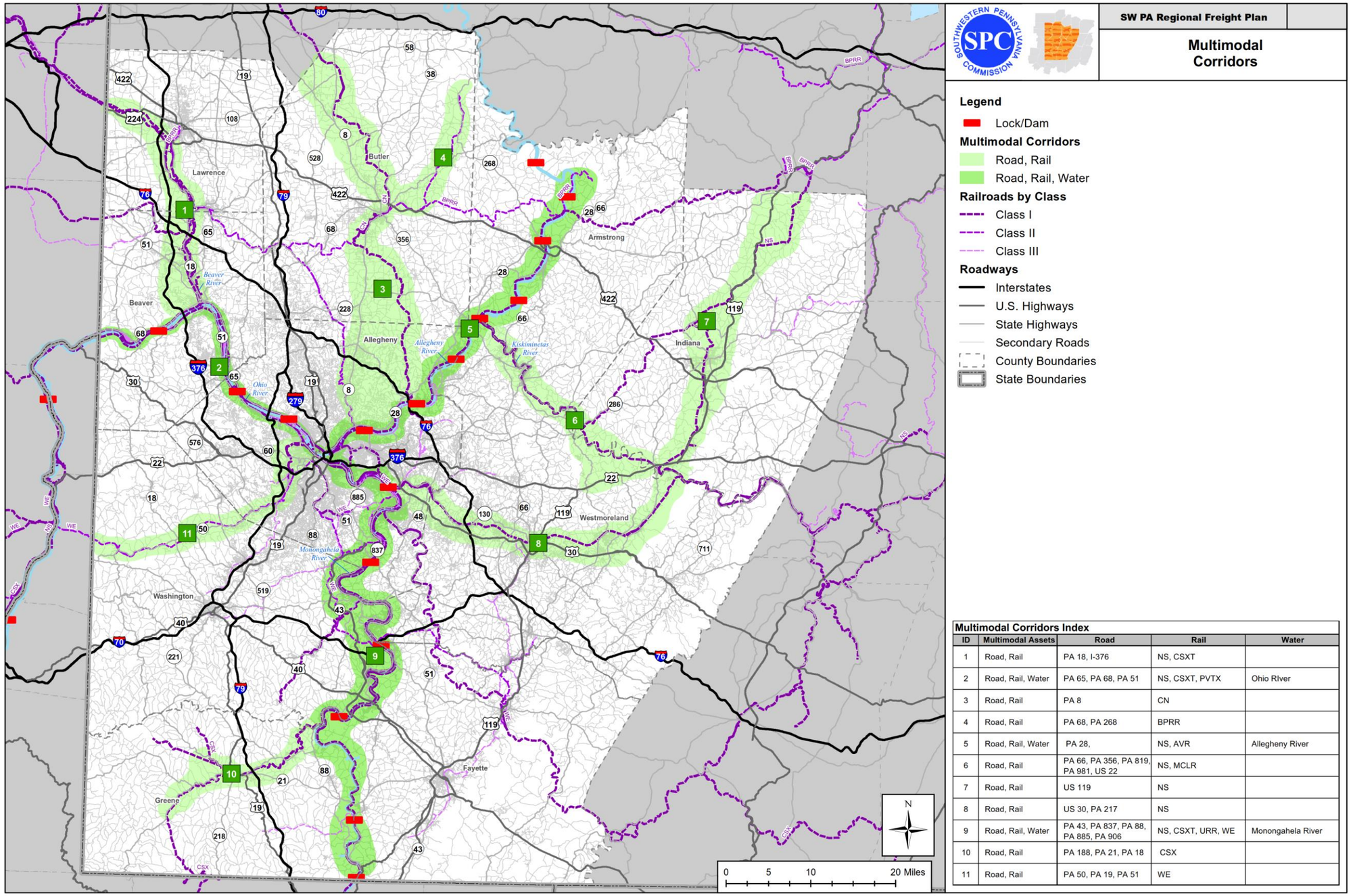


Exhibit ES-11: Proposed Southwestern Pennsylvania Regional Multimodal Freight Corridor Concept



Multimodal Corridors Index

ID	Multimodal Assets	Road	Rail	Water
1	Road, Rail	PA 18, I-376	NS, CSXT	
2	Road, Rail, Water	PA 65, PA 68, PA 51	NS, CSXT, PVTX	Ohio RIver
3	Road, Rail	PA 8	CN	
4	Road, Rail	PA 68, PA 268	BPRR	
5	Road, Rail, Water	PA 28,	NS, AVR	Allegheny River
6	Road, Rail	PA 66, PA 356, PA 819, PA 981, US 22	NS, MCLR	
7	Road, Rail	US 119	NS	
8	Road, Rail	US 30, PA 217	NS	
9	Road, Rail, Water	PA 43, PA 837, PA 88, PA 885, PA 906	NS, CSXT, URR, WE	Monongahela River
10	Road, Rail	PA 188, PA 21, PA 18	CSX	
11	Road, Rail	PA 50, PA 19, PA 51	WE	

Freight Funding Resources

The FAST Act continued or modified many of the traditional or formula-based programs from previous authorizations. These opportunities include federal and state allocations under general highway, bridge, maintenance, congestion, or rail crossing programs that generally provide the resources to fund projects on the four-year Transportation Improvement Program (TIP) and the statewide Twelve Year Plan (TYP). Programmed efforts using these funds typically benefit all general users of the highway system and are not freight-specific.

For the first time, the FAST Act establishes both formula and discretionary grant programs to provide a dedicated source of federal funding for freight projects. These programs include National Freight Program (NFP) funding, which is currently being held in a Pennsylvania statewide line item pending FHWA guidance; and an annual competitive FASTLANE Grant Program, which was previously authorized at $4.5 billion through 2020, and which saw its first round of applications submitted as of April 2016.

In light of the changing and competitive environment surrounding freight-related funding opportunities, continuing to proactively explore, prioritize, and maintain a list of freight project candidates should be an ongoing point of focus for the region.

Freight Performance Management Insights

Fully establishing and developing freight-related performance measures and targets specifically for use by SPC within the Southwestern Pennsylvania regional freight planning area is an ongoing effort that must continue beyond the completion of this plan. Freight performance measurement, in general, is an evolving issue across jurisdictional levels – one that will, at a minimum, require subsequent coordination between SPC and PennDOT relative to consistency between regional and statewide freight planning efforts, as well as compliance with recent federal rulemakings on the subject.

Separate from state or federal coordination, and considering the relative infancy of many of the data sets, inventories, and findings that were newly identified or compiled with the development of this plan, detailed follow-up coordination internally at SPC is also warranted. Conducting a targeted assessment of regional freight performance measurement and management processes independent of this Regional Freight Plan can allow SPC to more thoroughly explore regionally-relevant process needs; internal capabilities; cross-program or cross-jurisdictional opportunities; potential data constraints, costs, or challenges; future statewide freight planning revisions; or similar factors that will ultimately influence the efficiency and effectiveness of the final performance measurement/monitoring process.

Freight-Relevant Project/Study Candidates

Plan development efforts also considered an initial review and compilation of candidate projects and follow-up freight studies that may be beneficial for freight. Candidates were identified based on their potential to influence freight movements or relevant economic development opportunities on a broader level within the 10-county SPC region (see callout box at right).

- The plan lists over 130 freight-relevant project candidates that were extracted from existing planning references such as state or regional TIP listings, 12-year or long-range plan projects and aspirations, statewide rail or freight plan recommendations, or similar sources. They are listed in the plan as samples for reference only and do not imply specific project funding commitments or priorities.

- The plan lists over 30 follow-up freight study candidates that were also compiled based on screenings of freight focus areas identified for each county (as detailed in the Section 4 County Freight Profiles). Focus areas were generally determined based on a quantitative/qualitative review of county-specific freight activity areas with screening considerations for evidence of current or future freight activity, infrastructure needs, operational issues, access or connectivity issues, and relevance to the proposed Regional Freight Network.

Moving beyond this freight plan, a logical next step toward investigating or refining these interim lists of project or study candidates would include additional coordination with their related PennDOT District, county planning or maintenance officials, local municipalities, and key freight stakeholders (e.g., business or industry partners, truck or rail companies, etc.). From such efforts, detailed study needs may be identified for targeted follow-up assessments, from which detailed recommendations and/or additional local project candidates may be developed or refined for inclusion in future updates of the Regional Freight Plan. Follow-up discussions should also consider local, county, or regional highway project types or multimodal efforts relative to future funding or programming opportunities (i.e., to identify candidates for future TIGER grants, FASTLANE grants, or National Highway Freight Program funds).

Interim Freight-Relevant Project Screening

As an interim step (pending future freight project screening or prioritization refinements by SPC), sample project candidates included in the Regional Freight Plan were generally screened from available sources based on the following perspectives:

1. **Regional Significance**: Is the project related to a future regionally-significant development opportunity and/or would it support such opportunities?
2. **Federal Freight Network**: Is the project located on federally designated networks (e.g., NHFN, PHFS, NN)?
3. **Regional Freight Network**: Is the project located on the proposed Southwestern Pennsylvania Regional Highway Freight Network and/or a Regional Multimodal Freight Corridor?
4. **Freight Focus Area**: Is the project related to an identified Freight Focus Area on the County Profile maps (per Section 4 of this plan), and/or would it provide a relevant freight benefit to the Freight Focus Area?
5. **Multimodal Activity**: Does the project promote multimodal connectivity and/or include a non-highway mode?
6. **Corridor Enhancement**: Would the project provide a significant corridor enhancement benefitting freight, such as capacity, safety, or operations (e.g., including reconstruction, restoration, safety, or signals projects)?
7. **Project Scope/Scale**: Could the magnitude of the project (e.g., size, cost, duration, length, economic impact, modes) have significant freight or broader regional impacts?
8. **Planning Support**: Is the project identified in other planning documents by SPC, PennDOT, or related planning partners or stakeholders as important for freight or related economic development opportunities?
9. **State Support**: Is the project specifically identified as a regional highlight on statewide plans (e.g., PennDOT TYP MPO Profiles)?
10. **Outreach Support**: Is the project identified through multiple sources (including freight-related outreach discussions) as a project of regional and/or freight significance?

Freight Action Planning Next Steps

Southwestern Pennsylvania has experienced decades of challenges, but it is becoming recognized around the world as a place that can adapt and renew itself through concerted action. It also has unique assets that will help bring it through significant new challenges being experienced nationally.

Source: Mapping the Future, SPC

Collectively, efforts covered by this plan aim to equip SPC with the freight planning tools and resources needed to guide choices for meeting freight challenges, optimizing freight efficiencies, and advancing freight opportunities into the future.

There are a variety of ongoing or follow-up freight planning efforts linked with the regional freight planning objectives and strategies detailed in Section 3 of the plan. The following list summarizes six important groups of next steps for SPC to consider:

Continue collaboration at all levels.

Continue to build relationships and partnerships across interregional and intraregional boundaries to support and actualize opportunities for Southwestern Pennsylvania to work together and compete on a broader scale. Specific actions may include, for example, interregional outreach, the development of freight educational components, or follow-up collaboration with county planning partners relative to the County Freight Profile summaries.

Refine and/or formalize the Southwestern Pennsylvania Regional Highway Freight Network and Regional Multimodal Freight Corridor concepts.

Continue to review, refine, or formalize the proposed Southwestern Pennsylvania Regional Highway Freight Network and Regional Multimodal Freight Corridor concepts in a manner that will better enable regional significance while also providing a tool to enhance local project support. Specific actions may include, for example, further review and/or analysis of NHS intermodal connector opportunities, Critical Urban Freight Connector (CUFC) or Critical Rural Freight Connector (CRFC) eligibility, or first/last mile components.

Continue to explore freight performance measure requirements and needs.

Continue efforts toward interpreting the implications of freight-related performance management policies, guidelines, and requirements released in the latest federal NPRM, while also continuing to explore performance measure details that may be needed to more effectively monitor key freight transportation components within the region. Specific actions may include, for example, follow-up coordination with PennDOT to ensure statewide and MPO consistency and compliance relative to federal requirements.

Pursue and/or support freight-relevant project prioritization.

In parallel with the development of freight performance measures, or independently through the development of separate freight project screening methodologies, build upon the planning resources and project candidate lists included in this plan to identify key freight projects or freight-relevant project priorities. Specific actions may include, for example, reviews of SPC's recent *Livability throughout Smart Transportation Program* as a case-study in project scoring and ranking processes; reviews of project candidates by project category or relative to special funding or grant opportunities (e.g., future TIGER or FASTLANE Grant candidates); or discussions of how to further integrate freight priorities into other existing SPC planning processes (e.g., TIP, LRTP, CMP, etc.).

Pursue the completion of follow-up freight studies or planning actions.

In collaboration with PennDOT, county, and local planning partners, pursue and/or prioritize follow-up freight planning studies relative to the initial list of candidates and focus areas identified in this plan. Include considerations for an approach that would use such studies as a medium to supporting local project delivery alongside safety, efficiency, or operational enhancements. Specific actions may include, for example, area or facility specific coordination meetings and/or field views to validate or further define specific study issues, study areas, study scopes, etc. SPC efforts may also consider the integration of larger studies as part of their Unified Planning Work Program (UPWP) or via independent projects.

Enhance in-house freight data management, inventories, and capabilities.

Continue ongoing compilation, refinements, and/or additions related to managing the variety of freight related data explored during the development of this plan, as well as discussions of how to best apply this data to future freight planning updates. Specific actions may include, for example, further refining GIS inventories, enhancing regionally-specific rail or river terminal data, or pursuing online data compilations similar to DVRPC's Philly Freight Finder tool. Data management discussions may also review approaches to maintaining or updating the County Freight Profile sets, preparing for future NPMRDS analyses relative to future performance monitoring needs, or further exploring resources such as PennDOT's sign maintenance database or Pennsylvania Commodity Flow Tool.

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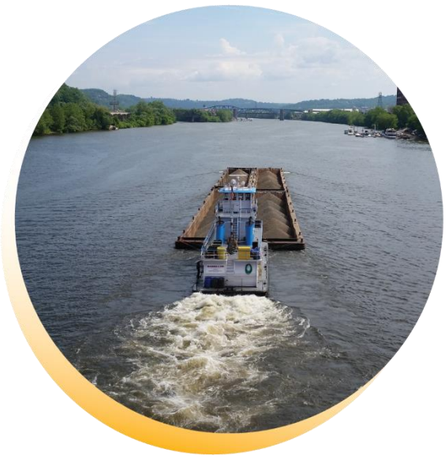

SECTION 1: INTRODUCTION

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Section 1: Introduction

Successfully providing for the efficient movement of goods is vital to any region's economy and sustainability. In the Southwestern Pennsylvania region, that task often co-exists alongside a series of complex relationships with the region's topography, past and present industrial trends, critical natural resources, or the quality and availability of its transportation assets.

To explore such relationships, the Southwestern Pennsylvania Commission (SPC), in their capacity as the designated Metropolitan Planning Organization (MPO) for the region, led the development of this *Southwestern Pennsylvania Regional Freight Plan*. Through this effort, SPC targeted strategic freight investigations to:

- Define, assess, and develop a more comprehensive understanding of today's multimodal freight transportation systems
- Identify future freight movement needs and opportunities through a horizon year of 2040
- Craft a strategic freight action plan that will assist in efforts to advance the coordinated use of the region's overall transportation resources

This plan incorporates a multimodal freight transportation perspective that encompasses over 25,000 miles of highway; over 30 railroads, including 3 major Class I operators and 2 regional providers; waterway freight along the Allegheny, Monongahela, and Ohio Rivers, and through the Port of Pittsburgh as one of the busiest inland ports in the nation; connections for air cargo service through the Pittsburgh International Airport; and existing or planned intermodal or multimodal freight transfer centers across the region.

This Regional Freight Plan also serves as a supplement to *Mapping the Future: The Southwestern PA Plan* – SPC's regional long-range transportation plan (LRTP) from June 2015 – by providing a more in-depth look at freight systems, issues, and interests across the region. It contains summary inventories and recommendations for future freight planning objectives, strategies, and actions that are collectively aimed at enhancing SPC's overall freight planning capabilities. The path forward looks to improve and promote the region's locational advantages and transportation assets in a manner that can help to catalyze public and private development around the goods movement and logistics economies.

*The Regional Freight Plan complements SPC's **Regional Vision** for "transportation and land use that supports and enhances the regional economy and the communities within it".*

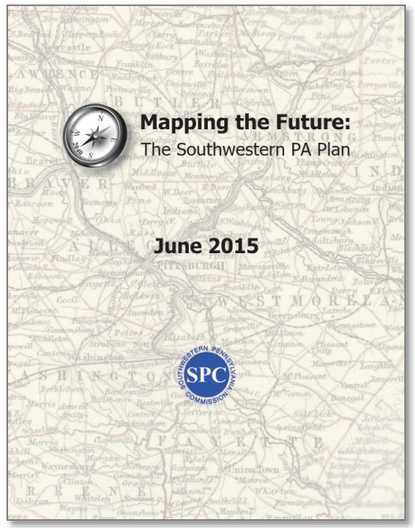
Mapping the Future: The Southwestern PA Plan, http://www.southwesternpaplan.org

The Pittsburgh Region Then…

Southwestern Pennsylvania has experienced decades of challenges, but it is becoming recognized around the world as a place that can adapt and renew itself through concerted action. It also has unique assets that will help bring it through significant new challenges being experienced nationally.

Historically, it is well known that the region's economy relied heavily on the steel manufacturing industry, which sustained nearly 100,000 workers and their families throughout the Monongahela and Beaver River valleys until the mid-1970s. The sharp contraction of the steel industry in this region directly contributed to the significant population losses and decline of its urban centers. Hardest hit were the historic industrial centers where the proportion of residents living in the region's boroughs and cities began to decrease after 1960, and the percentage of urban dwellers in 2000 had declined to the levels in the 1930s.

Mapping the Future, The Southwestern PA Plan, http:www.southwesternpaplan.org



The Pittsburgh Region Now…

SPC's 2016 Comprehensive Economic Development Strategy (CEDS) for Southwestern Pennsylvania included a SWOT analysis (Strengths, Weaknesses, Opportunities and Threats) that outlined many of the region's economic strengths.

Regional Strengths

- *Strong regional partnerships for economic development*
- *Strong regional transportation network*
- *Strong location in the North East*
- *Abundant water supply*
- *Natural resources*
- *Cultural and recreational amenities with professional sports*
- *Major healthcare companies*
- *Education and research institutions*
- *Diverse economy*
- *Work ethic*

Regional Opportunities

- *Shale gas development*
- *Construction of Shell Cracker Plant*
- *Downstream opportunities for industrial development, potential for petrochemical development*
- *Development of brownfields using existing rail access*
- *Regional presence in medicine, education, research and the potential for technology development*
- *Develop more young people, develop more smart leadership and innovative projects*

Source: Comprehensive Economic Development Strategy for Southwestern Pennsylvania, December 2016 (DRAFT)

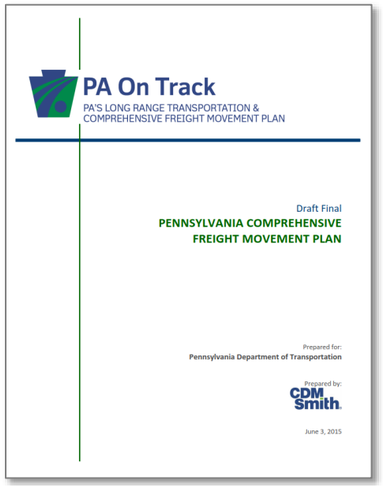
Relative to statewide planning, this Regional Freight Plan likewise provides additional region-specific detail to build upon the findings of *PA On Track* – Pennsylvania's latest statewide LRTP – and the corresponding statewide *Comprehensive Freight Movement Plan* (CFMP). The findings and insights of the Regional Freight Plan provide an additional resource to help further the integration of specific freight needs and interests into overall project planning and programming efforts, including collaboration between SPC and the Pennsylvania Department of Transportation (PennDOT).

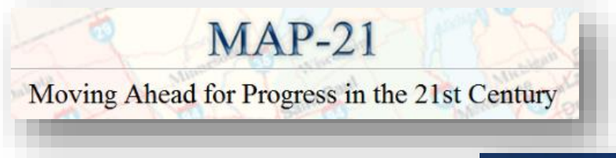
At a much broader level, development of this plan also considers federal freight planning provisions as defined by the *Fixing America's Surface Transportation Act* (FAST Act), which was signed into law in December 2015. The FAST Act specifically addresses national freight policies and related statewide freight planning requirements, including refinements and additions to significant freight provisions that were initiated by its predecessor, the *Moving Ahead for Progress in the 21st Century Act* (MAP-21). Meshing within these federal guidelines at the regional and/or MPO planning levels support a more consistent, efficient, and effective overall process. In short, this approach allows the plan to be customized for local and regional relevance, while also working within a procedural context that reflects state and national perspectives, and potentially maximizes opportunities for future investment planning and implementation successes.

Plan content is organized into the following sections:

- *Section 1 – Introduction*, including a description of the regional planning area, and a list of technical memorandums previously completed as part of the plan development process.
- *Section 2 – Regional Freight Context*, compiling key background details, multimodal freight transportation system insights, and relevant outreach perspectives; culminating in a summary freight narrative for the region.
- *Section 3 – Regional Freight Action Plan*, including a review of existing federal, state, and regional policy perspectives to arrive at a set of regionally-relevant freight planning objectives and strategies. Section 3 also outlines additional planning resources and next steps to help explore regional freight network concepts, freight funding, freight performance measures, and freight-relevant project or study candidates.
- *Section 4 – County Freight Profiles*, which organizes much of the plan's content on a county-specific basis to help simplify the presentation of details and facilitate ongoing coordination with SPC's state, district, county, and local planning partners or stakeholders.

Source: PA On Track, http://www.paontrack.com/





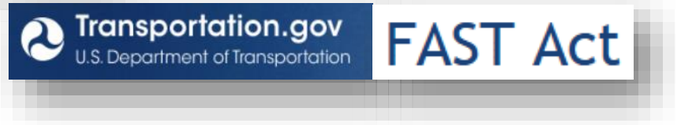
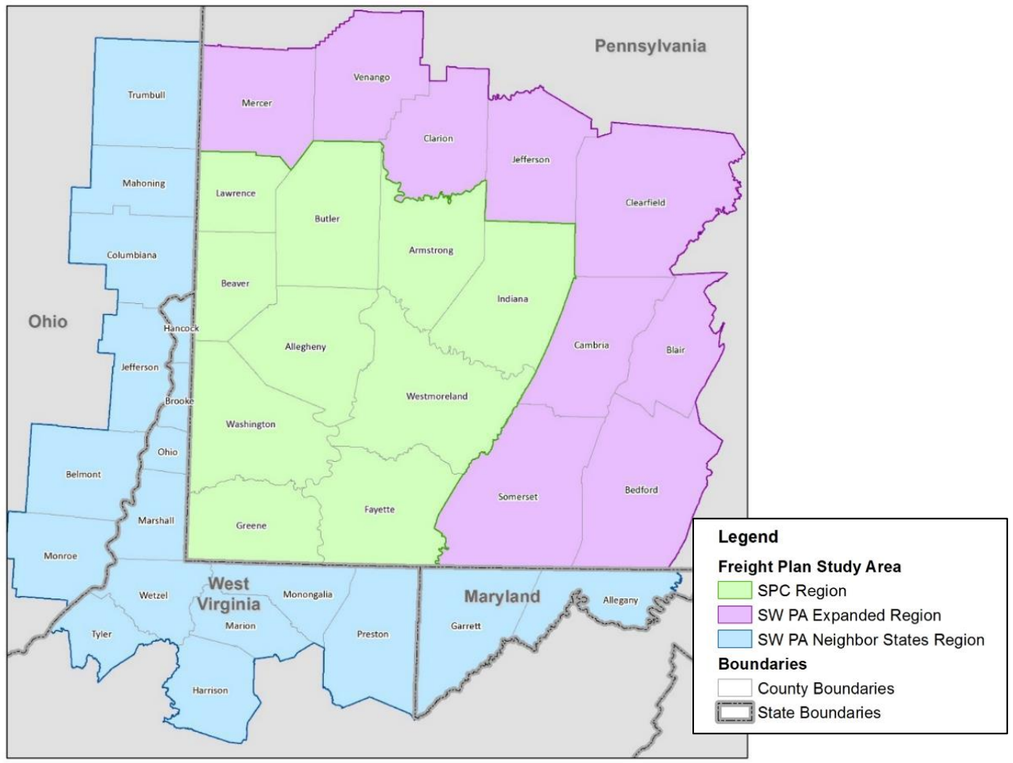


Exhibit 1: Regional Freight Planning Area



Regional Freight Planning Area

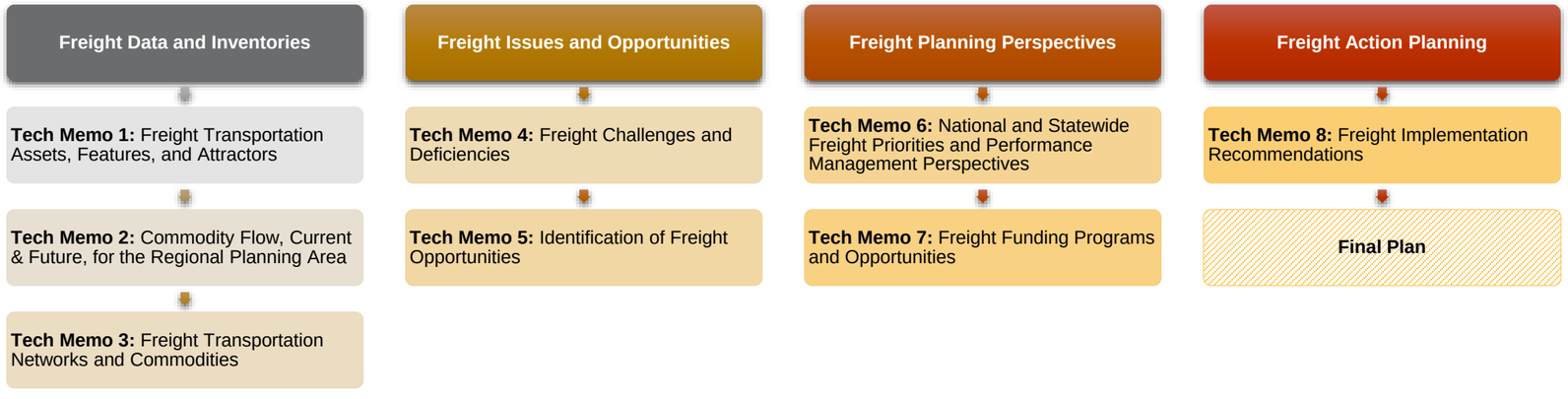
The regional freight planning area focuses on SPC's immediate 10-county jurisdiction while also considering influences and relationships across a larger 37-county area in 4 different states. This approach acknowledges the broad reach that freight patterns, partners, and influences often have beyond traditional jurisdictional boundaries. Collectively, this area includes:

Southwestern Pennsylvania / SPC Region: the study's focal area within the 10-county SPC jurisdiction encompassing Allegheny, Armstrong, Beaver, Butler, Fayette, Greene, Indiana, Lawrence, Washington, and Westmoreland Counties. The region covers 7,112 square miles with 548 municipal governments.

Southwestern Pennsylvania / Expanded PA Region: a 19-county area that considers the 10-county SPC region plus the influence of 9 adjoining Pennsylvania counties including: Bedford, Blair, Cambria, Clarion, Clearfield, Jefferson, Mercer, Somerset, and Venango.

Southwestern Pennsylvania / Neighbor States Region: a broader 18-county addition that considers the multi-state influence of 6 counties in Ohio (Trumbull, Mahoning, Columbiana, Jefferson, Belmont, and Monroe); 10 counties in West Virginia (Hancock, Brooke, Ohio, Marshall, Wetzel, Tyler, Harrison, Marion, Monongalia, and Preston); and 2 counties in Maryland (Garrett and Allegany).

Exhibit 2: Regional Freight Planning Process



Freight Planning Process

Plan development was conducted over the course of approximately one year and included a series of eight technical memorandums. This final plan is a compilation, summary, and refinement of those efforts, with a focus on an overall freight action plan and supporting tools to enhance SPC's freight planning capabilities into the future. Additional research, outreach, data, and technical details on many of the freight planning topics addressed by this plan may be found exclusively within the various technical memorandums.

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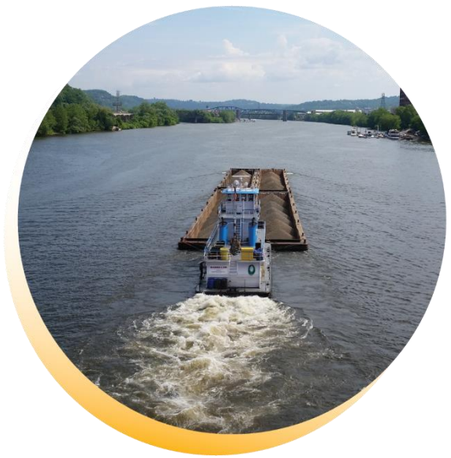

SECTION 2: REGIONAL FREIGHT CONTEXT

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Section 2: Regional Freight Context

The Region's Key Planning Partners

As freight movements and the influence of freight-related economic drivers do not stop at county or state borders, an important component of regional freight planning is to look beyond those borders to recognize key interregional factors and partnership opportunities. In today's transportation climate with substantial infrastructure needs, funding constraints, and an increasing level of interest in newer freight-related project funding opportunities under the FAST Act, working cooperatively across agency, geographic, or public/private jurisdictions to manage and enhance our overall multimodal transportation systems may be more important than ever.

Effective regional freight planning offers a unique opportunity to build and nurture strategic interregional and intraregional partnerships that may help Southwestern Pennsylvania and the surrounding multi-state area compete on a larger national stage for future freight-related developments or competitive funding opportunities.

Key regional planning partners specific to Southwestern Pennsylvania and the SPC region include internal and neighboring departments of transportation, metropolitan planning organizations (MPOs), and rural planning organizations (RPOs), as well as specific county, economic development, or private sector organizations. Broader connections include the Appalachian Regional Commission (ARC) or associations with the Great Lakes Megaregion. Relative to the SPC region, cross-state initiatives with neighboring partners will be important as different jurisdictions all work to address common freight deficiencies and connectivity issues.

Exhibit 1: Regional Planning Partners (Map)

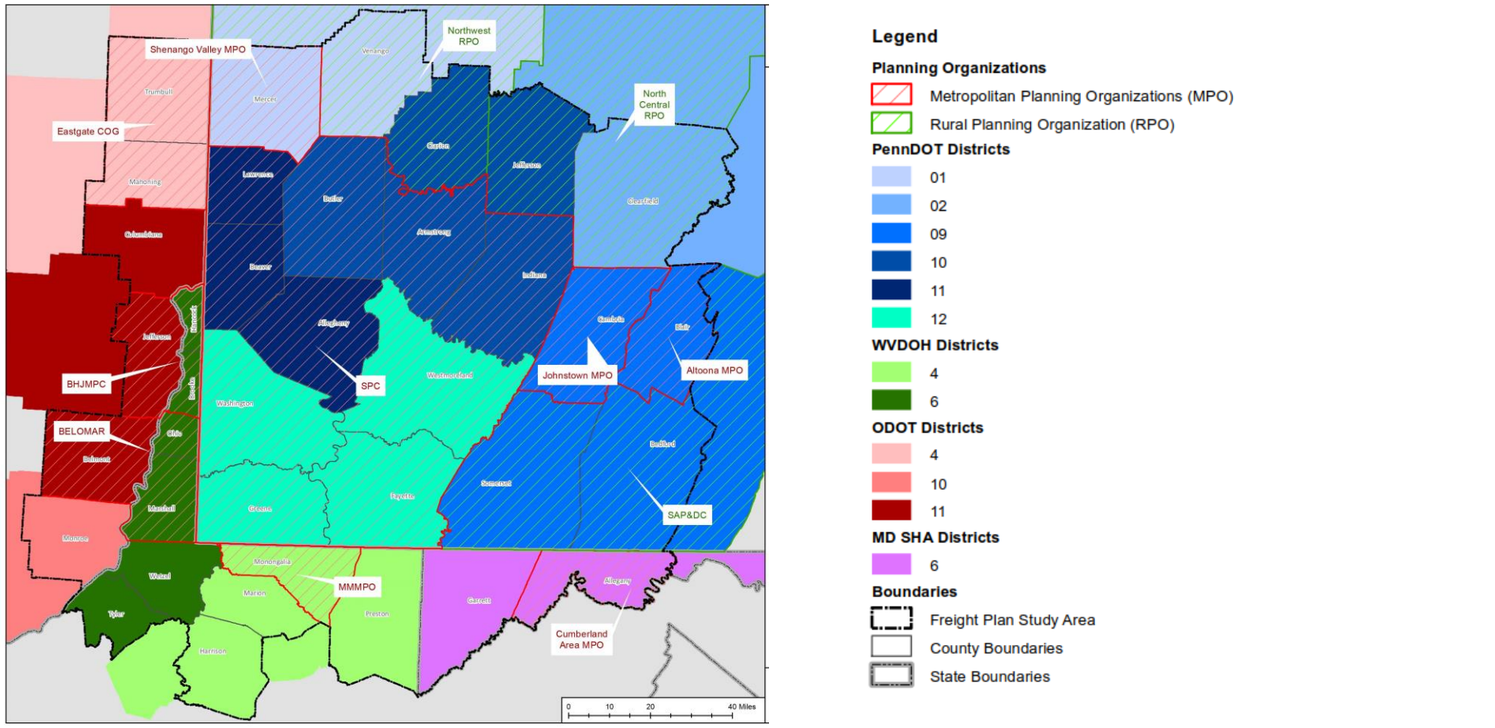
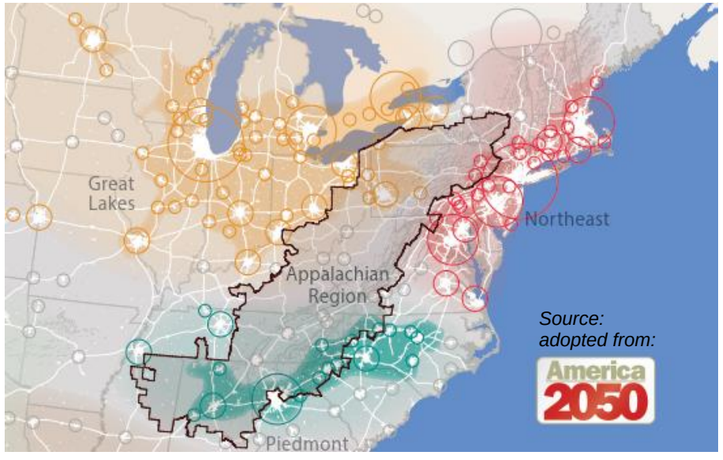


Exhibit 2: Appalachian Region and Surrounding Megaregions



Appalachian Regional Commission

Much of western and central Pennsylvania, as well as large portions of the multi-state buffer area considered in this Regional Freight Plan, are included in the 13-state area covered by the Appalachian Regional Commission (ARC).

ARC's mission is to innovate, partner, and invest to build community capacity and strengthen economic growth in Appalachia. Goals focus on economic opportunities, a ready workforce, critical infrastructure, natural and cultural assets, and leadership and community capacity.

Source: http://www.arc.gov/

Megaregions

Eleven megaregions have been identified in the U.S. by the Regional Plan Association in "America 2050: A Prospectus." These megaregions account for only 30 percent of the geographical area but account for 77 percent of both population and employment, 81 percent of gross regional product, and 92 percent of Fortune 500 Companies' revenue (all 2008). Pennsylvania is part of two of the nation's ten growing megaregions (Northeast and Great Lakes). With shifts in population to "megaregions," Pennsylvania's urban and suburban centers will see increases in freight flows. These metropolitan areas are already the locations of the top truck bottlenecks, and congestion along these corridors will continue to increase unless it is addressed.

Source: PA On Track

Exhibit 3: Regional Planning Partners (List)

State	Agency or Regional Planning Organization		Counties
PA	**PennDOT**	PennDOT District 1	Mercer, Venango
PA	**PennDOT**	PennDOT District 2	Clearfield
PA	**PennDOT**	PennDOT District 9	Bedford, Blair, Cambria, Somerset
PA	**PennDOT**	PennDOT District 10	Armstrong, Butler, Clarion, Indiana, Jefferson
PA	**PennDOT**	PennDOT District 11	Allegheny, Beaver, Lawrence
PA	**PennDOT**	PennDOT District 12	Fayette, Greene, Washington, Westmoreland
PA	**Altoona MPO**	Altoona MPO / Blair County Planning Commission / Altoona MSA	Blair
PA	**Johnstown MPO**	Johnstown Area Transportation Study	Cambria
PA	**North Central RPO**	North Central PA Regional Planning and Development Commission	Jefferson, Clearfield
PA	**Northwest RPO**	Northwest PA Regional Planning and Development Commission	Venango, Clarion
PA	**SVATS MPO**	Shenango Valley Area Transportation Study	Mercer
PA	**SAP&DC**	Southern Alleghenies Planning and Development Commission	Somerset, Bedford
PA	**SPC**	Southwestern Pennsylvania Commission	Allegheny, Armstrong, Beaver, Butler, Fayette, Greene, Indiana, Lawrence, Washington, Westmoreland
OH	**ODOT**	ODOT District 4	Mahoning, Trumbull
OH	**ODOT**	ODOT District 10	Monroe
OH	**ODOT**	ODOT District 11	Belmont, Columbiana, Jefferson
OH	**Eastgate COG**	EASTGATE Regional Council of Governments	Trumbull, Mahoning
OH	**BH-HV RTPO**	Buckeye Hills-Hocking Valley Regional Development District	Monroe
OH	**OMEGA**	Ohio Mid-Eastern Governments Association	Columbiana, Jefferson, Belmont
OH, WV	**BHJMPC**	Brooke Hancock-Jefferson Metropolitan Planning Commission	Jefferson (OH); Hancock, Brooke (WV)
OH, WV	**BELOMAR**	BELOMAR Regional Council and Interstate Planning Commission	Belmont (OH); Ohio, Marshall (WV)
WV	**WVDOT**	WVDOT District 4	Harrison, Preston, Marion, Monongalia
WV	**WVDOT**	WVDOT District 6	Brook, Hancock, Marshall, Ohio, Tyler, Wetzel
WV	**MMMPO**	Morgantown/Monongalia County Transportation Planning Organization	Morgantown, Monongalia
WV	**MOVRC**	Mid-Ohio Valley Regional Council	Tyler
WV	**WV PDC**	West Virginia Region V Planning and Development Council	Tyler
WV	**WV PDC**	West Virginia Region VI Planning and Development Council	Marion, Monongalia, Preston, Harrison
WV	**WV PDC**	West Virginia Region X Planning and Development Council	Belmont (OH); Ohio, Marshall, Wetzel (WV)
WV	**WV PDC**	West Virginia Region XI Planning and Development Council	Hancock, Brooke
MD	**MDOT**	MDOT District 6	Allegany, Garrett
MD	**Cumberland Area MPO**	Cumberland Area Metropolitan Planning Organization	Allegany

The Region's Freight and Commodities

Population, Employment, and Industry Influences

Notwithstanding freight that passes through the region (e.g., along Interstate corridors such as I-70 or I-76, or along major rail carrier mainlines), the types, amounts, and origins/destinations of freight within Southwestern Pennsylvania are largely related to the make-up and location of its population, employment, and industry base. People, for example, drive the demand for retail and consumer goods; reflect the communities where home improvements, grocery stores, or first/last mile e-commerce deliveries thrive; and provide the workforce for local businesses and industries that produce or receive goods. In turn, employment and industry generally reflect the types of freight-generating or freight-consuming activities that makeup the region's economic engine, as well as a snapshot into the influence of the area's natural resources, transportation assets, and unique freight needs.

Based on data from *Mapping the Future: The Southwestern PA Plan*, the region's population is projected to increase from just over 2.5 million persons in 2010 to approximately 2.9 million persons by 2040, or an overall growth of less than 1% per year. Employment in that same timeframe is expected to increase by approximately 300,000 jobs including growth in retail trade, services, and other sectors. In both cases, much of this activity centers at the core of the region including the City of Pittsburgh, Allegheny County, and the immediately adjacent counties. Clusters of activity also generally follow the region's key highway, rail, or river corridors, and overlay denser urban areas such as county seats located in New Castle, Butler, Kittanning, Indiana, Beaver, Greensburg, Washington, Waynesburg, and Uniontown.

From an employment perspective and based on *Mergent Intellect Employment and Business Database* details, freight-related industry categories by North American Industry Classification System (NAICS) codes include the following:

- Agriculture, Forestry, Fishing, and Hunting (NAICS 11)
- Mining, Quarrying, and Oil, and Gas Extraction (NAICS 21)
- Utilities (NAICS 22)
- Construction (NAICS 23)
- Manufacturing (NAICS 31-33)
- Wholesale Trade (NAICS 42)
- Retail Trade (NAICS 44-45)
- Transportation and Warehousing (NAICS 48-49)

Collectively, almost three-quarters of employment among the region's freight-related industry groups lies within retail trade (32%), manufacturing (25%), or construction (16%).

Exhibit 4: Regional Population Map

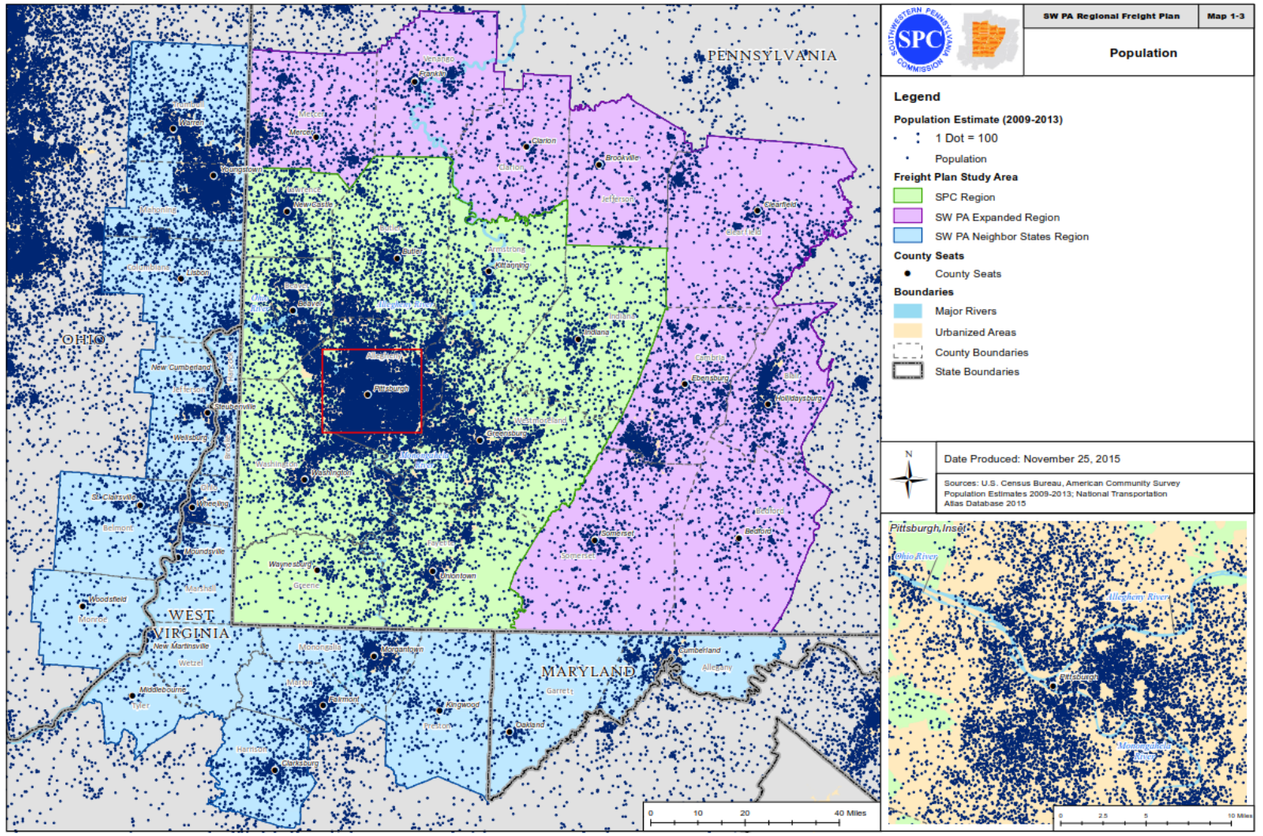


Exhibit 5: Regional Population and Employment Growth

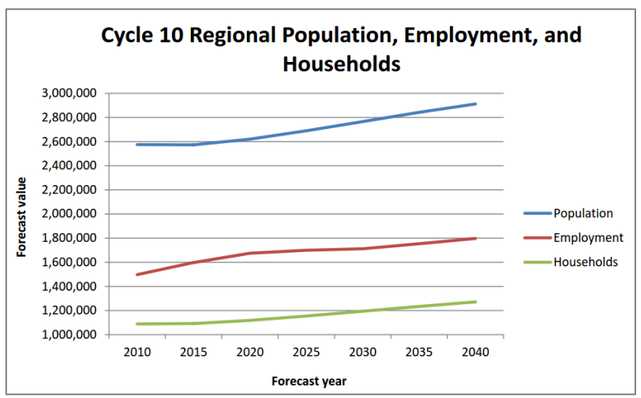


Exhibit 6: Regional Freight-Related Employment by Industry

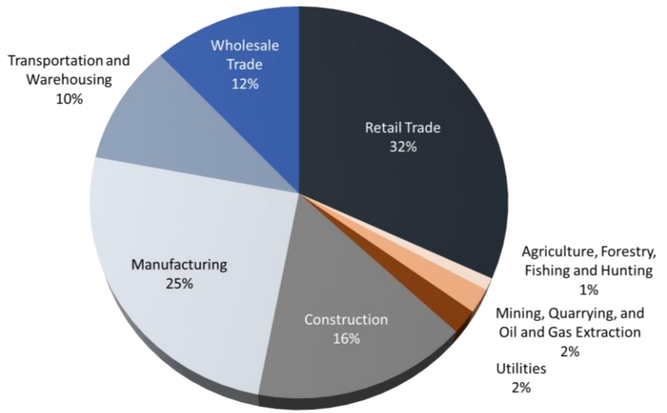


Exhibit 7: Regional Employment (2015) in Freight-Related Industries

NAICS			Category	Total Employees
11			**Agriculture, Forestry, Fishing and Hunting**	**7,147**
	111		Crop Production	4,012
	112		Animal Production and Aquaculture	2,135
	113		Forestry and Logging	267
	114		Fishing, Hunting and Trapping	64
	115		Support Activities for Agriculture and Forestry	669
21			**Mining, Quarrying, and Oil and Gas Extraction**	**12,857**
	211		Oil and Gas Extraction	1,549
	212		Mining (except Oil and Gas)	6,654
		2121	Coal Mining	5,702
		2122	Metal Ore Mining	190
		2123	Nonmetallic Mineral Mining and Quarrying	762
	213		Support Activities for Mining	4,654
22			**Utilities**	**12,112**
	221		Utilities	12,112
		2211	Electric Power Generation, Transmission and Distribution	6,537
		2212	Natural Gas Distribution	2,376
		2213	Water, Sewage and Other Systems	3,199
23			**Construction**	**103,146**
	236		Construction of Buildings	32,617
	237		Heavy and Civil Engineering Construction	13,189
	238		Specialty Trade Contractors	57,340
31-33			**Manufacturing**	**162,794**
	311		Food Manufacturing	9,331
	312		Beverage and Tobacco Product Manufacturing	1,361
	313		Textile Mills	716
	314		Textile Product Mills	1,383
	315		Apparel Manufacturing	1,933
	316		Leather and Allied Product Manufacturing	192
	321		Wood Product Manufacturing	2,941
	322		Paper Manufacturing	1,672
	323		Printing and Related Support Activities	6,945
	324		Petroleum and Coal Products Manufacturing	1,561
	325		Chemical Manufacturing	16,110
	326		Plastics and Rubber Products Manufacturing	7,497
	327		Nonmetallic Mineral Product Manufacturing	8,824
	331		Primary Metal Manufacturing	16,487

NAICS		Category	Total Employees
31-33		**Manufacturing (cont'd)**	
	332	Fabricated Metal Product Manufacturing	21,646
	333	Machinery Manufacturing	18,460
	334	Computer and Electronic Product Manufacturing	18,323
	335	Electrical Equipment, Appliance, and Component Manufacturing	8,504
	336	Transportation Equipment Manufacturing	6,089
	337	Furniture and Related Product Manufacturing	1,963
	339	Miscellaneous Manufacturing	10,856
42		**Wholesale Trade**	**77,421**
	423	Merchant Wholesalers, Durable Goods	55,352
	424	Merchant Wholesalers, Nondurable Goods	22,045
	425	Wholesale Electronic Markets and Agents and Brokers	24
44-45		**Retail Trade**	**209,306**
	441	Motor Vehicle and Parts Dealers	24,537
	442	Furniture and Home Furnishings Stores	6,996
	443	Electronics and Appliance Stores	7,894
	444	Building Material and Garden Equipment and Supplies Dealers	13,963
	445	Food and Beverage Stores	44,581
	446	Health and Personal Care Stores	15,659
	447	Gasoline Stations	6,736
	448	Clothing and Clothing Accessories Stores	17,861
	451	Sporting Goods, Hobby, Musical Instrument, and Book Stores	10,766
	452	General Merchandise Stores	33,709
	453	Miscellaneous Store Retailers	19,847
	454	Nonstore Retailers	6,757
48-49		**Transportation and Warehousing**	**61,380**
	481	Air Transportation	1,247
	482	Rail Transportation	1,557
	483	Water Transportation	472
	484	Truck Transportation	20,984
	485	Transit and Ground Passenger Transportation	10,710
	486	Pipeline Transportation	928
	487	Scenic and Sightseeing Transportation	353
	488	Support Activities for Transportation	9,585
	491	Postal Service	7,288
	492	Couriers and Messengers	2,841
	493	Warehousing and Storage	5,415

Source: Mergent, Inc. (2015). Carnegie Library of Pittsburgh. Retrieved by SPC May, 2015, from Mergent Online database.

Commodity Tonnage and Value

Based on IHS Global Insight Transearch data, in 2011 the 10-county SPC region handled over 201 million tons of freight worth approximately $124 billion across all modes. By 2040, projections estimate 40% growth in tonnage to more than 282 million tons, coupled with a 105% increase in value to more than $255 billion.

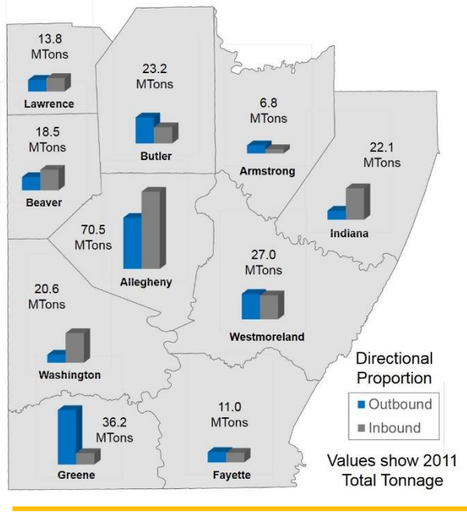
Exhibit 8: 2011-2040 Commodity Tonnage for the SPC 10-County Region

Freight Segment	2011 kTons	2040 kTons	Growth (kTons)	Growth (%)
Internal	48,467	73,386	24,919	51%
Outbound	70,963	105,378	34,415	48%
Inbound	81,935	103,350	21,415	26%
Total	**201,365**	**282,114**	**80,749**	**40%**

Exhibit 9: 2011-2040 Commodity Value for the SPC 10-County Region

Freight Segment	2011 Value ($000s)	2040 Value ($000s)	Growth ($000s)	Growth (%)
Internal	$9,144	$17,324	$8,180	89%
Outbound	$52,279	$105,578	$53,299	102%
Inbound	$63,081	$132,129	$69,048	109%
Total	**$124,504**	**$255,031**	**$130,527**	**105%**

Exhibit 10: Commodity Tonnage Variations by County



County-Specific Commodities

Though partnered as one overall region, each county also has its own unique character with substantial variations in industries and commodity details. Such variations are explored and documented in Section 4 of this plan under the individual County Freight Profiles.

Commodity Types

Commodity details by commodity type are summarized in Exhibit 13 and reflect tonnage overall, by direction, by mode, and relative to future year 2040 projections. Based on these details, approximately 73% of the SPC region's overall tonnage consists of just 5 commodity groups including:

- 35% Coal
- 20% Non-Metallic Minerals
- 8% Petroleum or Coal Products
- 5% Primary Metal Products
- 5% Clay, Concrete, Glass, or Stone

Secondary Traffic also appears in high tonnage amounts. These movements generally represent a chain that originates from a warehouse, distribution center, or other facility where the source commodities were not actually produced. While no additional information can be extracted from the commodity data, Secondary Traffic may include a variety of mixed freight and often represents a large portion of retail-oriented goods movement in an area.

Rounding out the top 10 list of commodities by tonnage shows additional groups that reflect a broader variety of goods moving throughout the region including, for example, food or kindred products, farm products, and chemicals or allied products. Beyond many of the typically "heavy" materials, several lighter-weight and higher-value commodity groups are also critical to the region's economic base. Such groups include rubber or plastics, machinery, electrical equipment, and precision instruments.

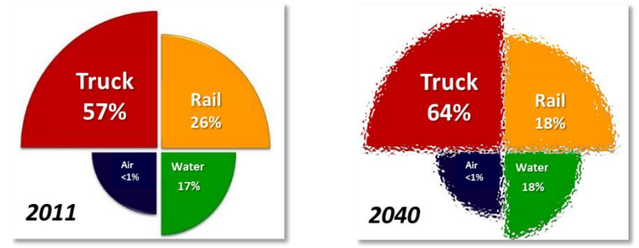
In terms of future growth by commodity, details in Exhibit 13 reveal a wide range of potential trends, including the following:

- Many of the top 10 commodities by weight (e.g., non-metallic minerals or primary metal products) are projected to see a substantial increase in tonnage, reflecting a continuation in the important roles that they play throughout the region.
- Coal, in contrast, is projected to decline; though given future uncertainties with trends in the coal industry, eventual changes could be much more or less severe than what the data estimates.
- Lumber and wood products are projected to grow substantially (201%), which may be relevant in that some stakeholders during the development of this plan specifically mentioned that industry as a potential market to explore in areas where coal has traditionally been the focus.
- Several of the typically higher-value products also show substantial percentage increases including, for example, machinery (172%), electrical equipment (259%), and precision instruments (310%). While their absolute change in tons may be nominal versus heavy materials such as coal or aggregate, their impact on the overall economic value for the region, at least partially if not wholly as a reflection of the region's advanced manufacturing capability, is crucial.

Mode Shares

In 2011, trucks accounted for 57% of the tonnage moved within, to, or from the region, while rail and water also carried substantial amounts. As detailed in Exhibit 13, however, these mode shares vary significantly by commodity. For example, coal is split across modes with 14% by truck, 49% by rail, and 36% by water; whereas metallic ores move predominately by rail (87%), while food or farm products move almost exclusively by truck (98-99%).

Exhibit 11: Estimated Mode Shares for the SPC 10-County Region



As with other commodity details, mode shares also vary substantially for each county across the region – in part based on the dominant freight flows for each county, as well as their available transportation assets (i.e., major highway, rail, or river corridors). Per Exhibit 12, variations show, for example, a heavy reliance on trucks in Lawrence and Butler Counties, substantial outbound rail (predominately coal) from Greene County, and a broader multimodal mix where major rail and river corridors run through Beaver, Allegheny, and Westmoreland Counties.

Exhibit 12: Mode Share Variations by County (Outbound and Inbound)

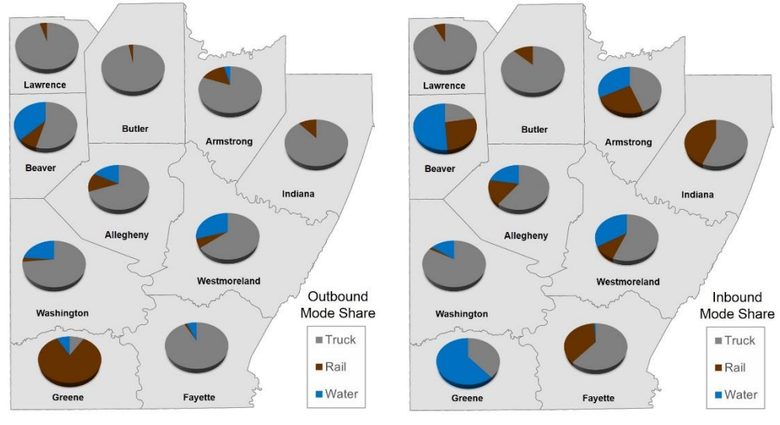


Exhibit 13: 2011 Commodity Type Details for the SPC 10-County Region

STCC	STCC Description	Tonnage (kTons)	Tonnage by Direction (kTons)			Tonnage by Direction (% kTons)			Tonnage by Mode (kTons)				Tonnage by Mode (% kTons)				Projected Change (2011-2040)	
		TOTAL	Internal	Outbound	Inbound	Internal	Outbound	Inbound	Truck	Rail	Water	Air	Truck	Rail	Water	Air	kTons	%
11	Coal	70,233	16,209	28,663	25,361	23%	41%	36%	10,165	34,604	25,464	-	14%	49%	36%	0%	-2,814	-4%
14	Nonmetallic Minerals	39,991	23,679	4,065	12,246	59%	10%	31%	31,695	3,199	5,095	1	79%	8%	13%	0%	24,201	61%
29	Petroleum or Coal Products	16,900	3,826	8,032	5,042	23%	48%	30%	13,711	1,698	1,489	-	81%	10%	9%	0%	-2,223	-13%
50	Secondary Traffic	16,343	1,649	5,885	8,809	10%	36%	54%	16,343	-	-	-	100%	0%	0%	0%	14,400	88%
33	Primary Metal Products	10,296	30	6,993	3,273	0%	68%	32%	6,723	2,737	836	0	65%	27%	8%	0%	6,415	62%
32	Clay, Concrete, Glass or Stone	9,694	1,837	3,241	4,616	19%	33%	48%	7,531	1,251	912		78%	13%	9%	0%	9,119	94%
20	Food or Kindred Products	7,180	8	3,015	4,157	0%	42%	58%	7,051	128	-	1	98%	2%	0%	0%	4,357	61%
40	Waste or Scrap Materials	5,286	716	2,687	1,882	14%	51%	36%	3,981	1,146	158	-	75%	22%	3%	0%	7,815	148%
1	Farm Products	5,208	259	2,148	2,801	5%	41%	54%	5,171	36	1	0	99%	1%	0%	0%	1,435	28%
28	Chemicals or Allied Products	5,093	0	1,380	3,713	0%	27%	73%	2,449	2,131	511	2	48%	42%	10%	0%	2,536	50%
10	Metallic Ores	3,797	1	58	3,738	0%	2%	98%	280	3,296	222	-	7%	87%	6%	0%	1,160	31%
24	Lumber or Wood Products	1,938	115	590	1,234	6%	30%	64%	1,795	141	2	0	93%	7%	0%	0%	3,892	201%
34	Fabricated Metal Products	1,651	-	940	711	0%	57%	43%	1,602	3	45	0	97%	0%	3%	0%	1,710	104%
37	Transportation Equipment	1,633	4	863	766	0%	53%	47%	1,492	140	-	1	91%	9%	0%	0%	1,752	107%
26	Pulp, Paper or Allied Products	1,211	0	286	925	0%	24%	76%	1,015	196	-	0	84%	16%	0%	0%	578	48%
30	Rubber or Misc Plastics	874	-	433	441	0%	50%	50%	868	5	-	1	99%	1%	0%	0%	1,158	132%
27	Printed Matter	836	0	374	462	0%	45%	55%	836	0	-	0	100%	0%	0%	0%	157	19%
35	Machinery	676	-	275	401	0%	41%	59%	668	7	-	1	99%	1%	0%	0%	1,163	172%
36	Electrical Equipment	562	-	237	325	0%	42%	58%	556	2	2	1	99%	0%	0%	0%	1,458	259%
46	Misc Mixed Shipments	516	-	188	328	0%	36%	64%	22	494	-	0	4%	96%	0%	0%	562	109%
43	Mail or Contract Traffic	260	15	44	202	6%	17%	78%	258		-	2	99%	0%	0%	1%	13	5%
42	Shipping Containers	252	56	182	15	22%	72%	6%	168	84	-	-	67%	33%	0%	0%	364	144%
41	Misc Freight Shipments	211	64	147	1	30%	69%	0%	195	17	-	-	92%	8%	0%	0%	330	156%
39	Misc Manufacturing Products	201	-	90	111	0%	45%	55%	191	2	7	1	95%	1%	4%	0%	304	151%
38	Instrum, Photo Equip, Optical Eq	143	-	66	77	0%	46%	54%	135	0	5	2	95%	0%	3%	2%	444	310%
25	Furniture or Fixtures	137	-	20	117	0%	15%	85%	137	0	-	0	100%	0%	0%	0%	324	236%
23	Apparel or Related Products	92	-	22	70	0%	24%	76%	88	4	-	-	95%	5%	0%	0%	109	118%
22	Textile Mill Products	75	-	18	57	0%	24%	76%	75	0	-	0	100%	0%	0%	0%	-3	-4%
21	Tobacco Products	22	-	0	21	0%	1%	99%	22	-	-	-	100%	0%	0%	0%	-17	-77%
19	Ordnance or Accessories	15	-	7	8	0%	48%	52%	15	-	-	0	100%	0%	0%	0%	8	53%
31	Leather or Leather Products	13	-	1	12	0%	6%	94%	13	-	-	0	100%	0%	0%	0%	9	69%
44	Freight Forwarder Traffic	11	-	8	2	0%	77%	23%		11	-	-	0%	100%	0%	0%	4	36%
8	Forest Products	10	0	3	7	0%	33%	66%	10	-	-	-	100%	0%	0%	0%	21	210%
9	Fresh Fish Or Marine Products	7	-	-	7	0%	0%	100%	7	-	-	0	100%	0%	0%	0%	4	57%
13	Crude Petroleum or Natural Gas	3	-	3	-	0%	100%	0%	0	3	-	-	0%	100%	0%	0%	3	100%
-	TOTAL	201,365	48,468	70,964	81,938	24%	35%	41%	115,268	51,335	34,749	13	57%	25%	17%	< 1%	80,749	40%

Source: IHS Global Insight Transearch Data

Table Notes: Data are shown by Standard Transportation Commodity Code (STCC) groupings and do not account for pipeline transport; all values and totals are approximate and may reflect rounding.

Commodity Flows and Trading Partners

In terms of commodity flow patterns and freight origins/destinations, the overall SPC region shows strong relationships with key trading partners within the region proper, and well beyond its 10-county jurisdictional boundary (Exhibit 14).

Directionally, about one quarter of the region's freight tonnage moves internally within the region; 35% moves outbound from the region; and 41% is received inbound from outside the region.

While details vary by commodity, by mode, and/or by county, key overall trading partners for Southwestern Pennsylvania include:

- Other areas throughout the state, including neighboring counties in western Pennsylvania as well as more distant areas in its northwest, central, and southeast regions.
- Major out-of-state trading partners in Ohio, West Virginia, Maryland, and Virginia.
- Connections to various East Coast cities (e.g., Philadelphia or Baltimore), which may also serve as broader hubs for port or distribution activities within a one-day truck drive of Southwestern Pennsylvania.
- Connections to the Omaha, Nebraska area, which lies directly along the I-80 corridor within a two-day truck drive of Southwestern Pennsylvania, and which reflects a major intermediate collection/distribution point for goods traveling to/from the West Coast.

At an international level, based on import/export estimates from the Federal Highway Administration's (FHWA) Federal Analysis Framework (FAF) Version 4 data, key trading partners also include Canada, Europe, Eastern Asia, and other locations around the globe. The FAF zone around Pittsburgh does not include Greene or Indiana Counties, so exact details for the SPC 10-county region are not readily available. However, FAF estimates for the remaining 8 counties indicate a total import/export amount of more than 20 million tons in 2015; though of this total, approximately 14 million tons were comprised of coal exports alone, leaving only 6 million tons of other import/export activity.

On a mode-specific basis, freight flows along the region's highway, rail, and inland waterway networks are visualized on the following pages in terms of truck volumes, rail tonnage, waterway tonnage, and commercial lockages (Exhibit 15 through Exhibit 21).

Exhibit 14: National and Regional Freight Flow Patterns based on Highway Freight Movements

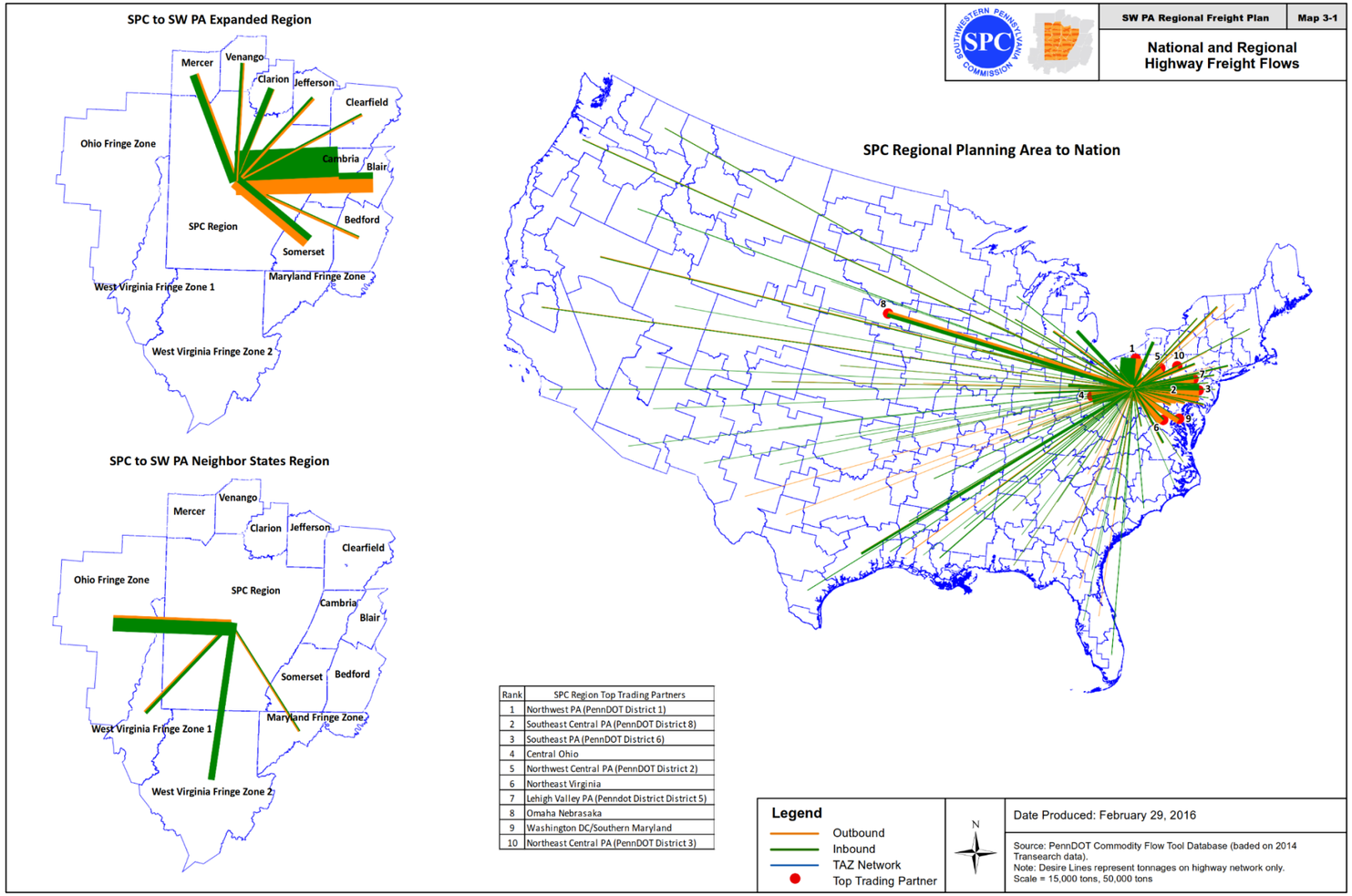


Exhibit 15: Regional Highway Freight Flows based on Daily Truck Traffic Volumes

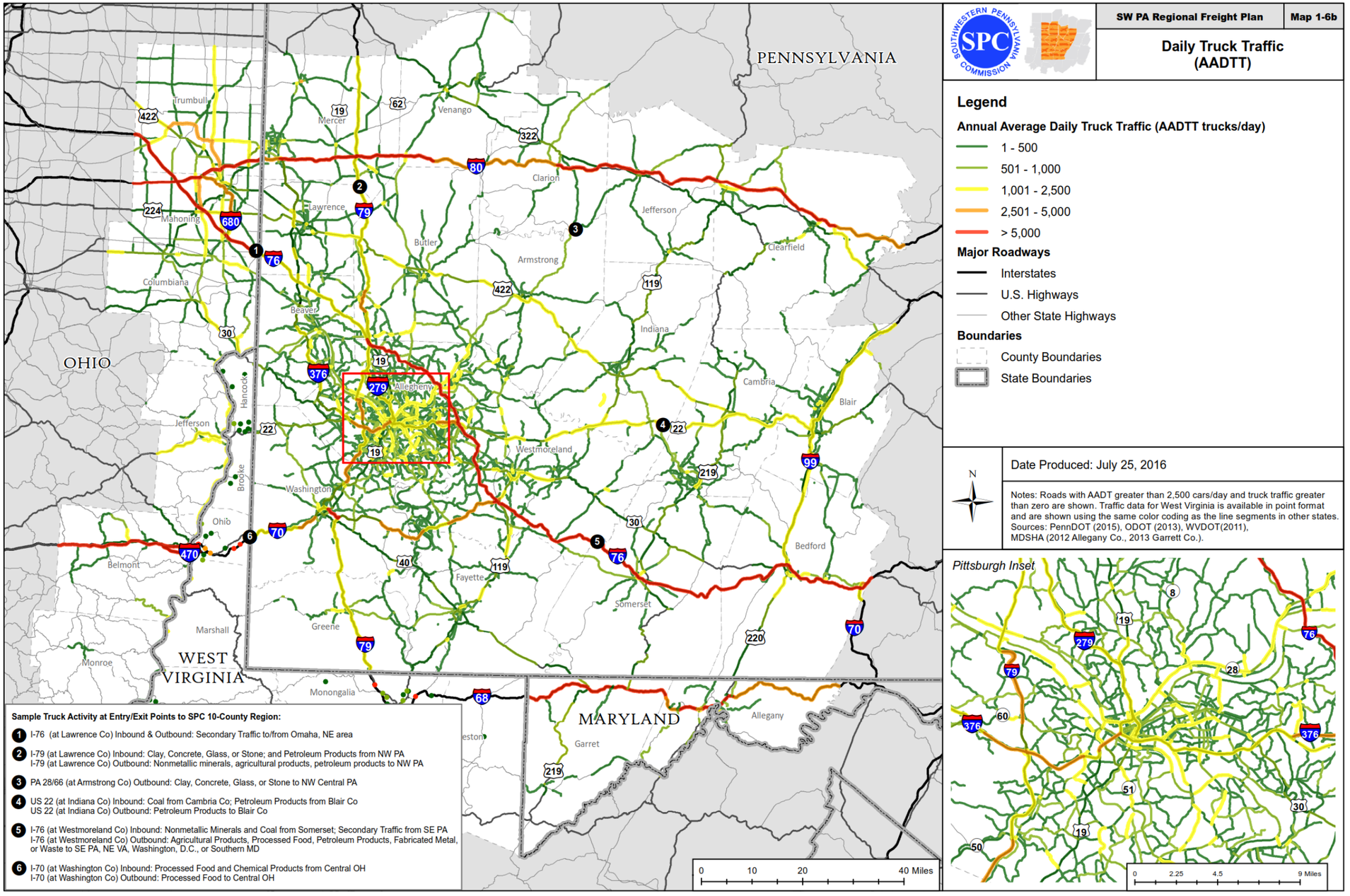


Exhibit 16: Pennsylvania Rail Freight Flows based on Total Net Tonnage

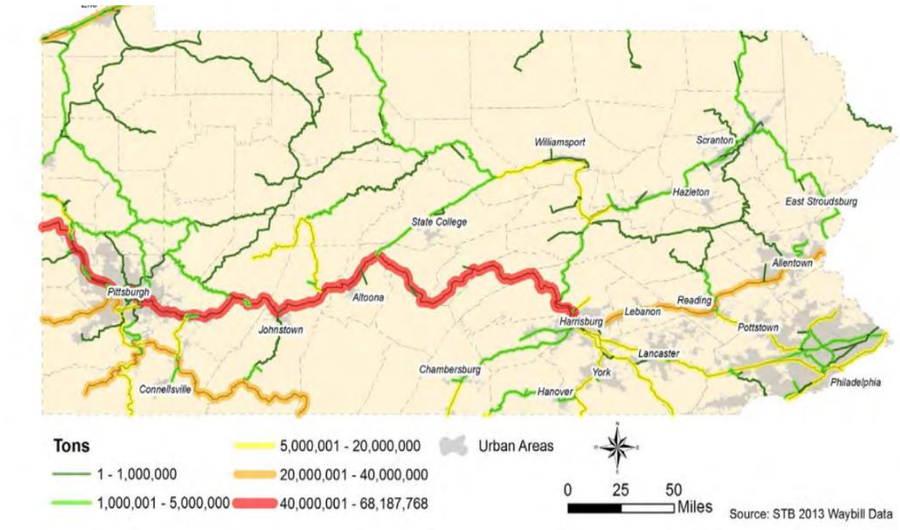


Exhibit 17: Pennsylvania Rail Freight Flows based on Total Coal Movement Tonnage

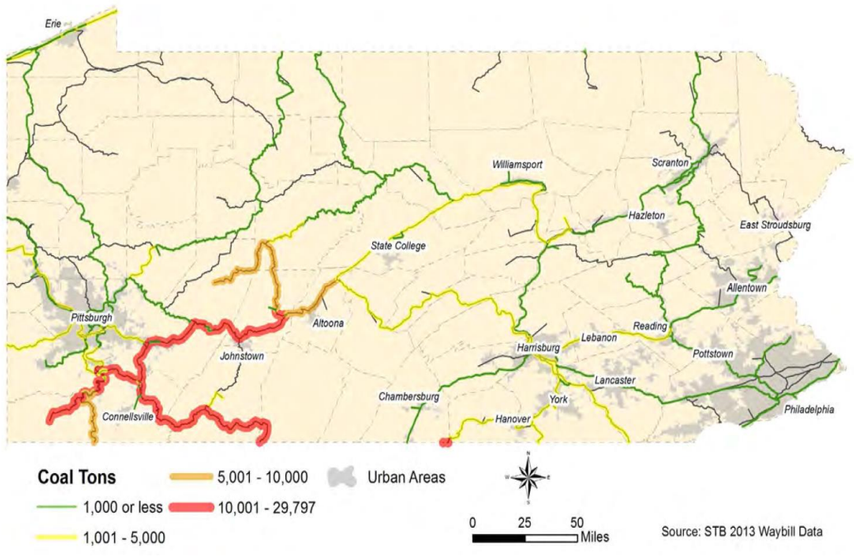


Exhibit 18: Pennsylvania Rail Freight Flows based on Internal Rail Traffic Tonnage

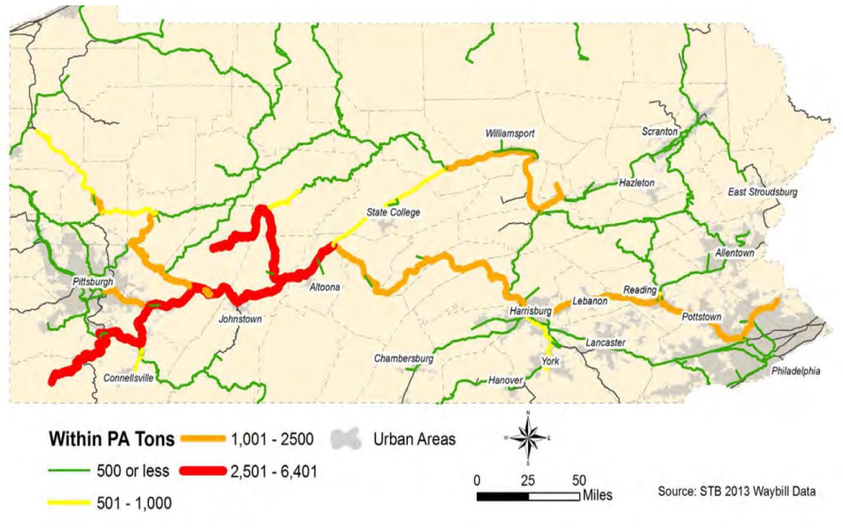
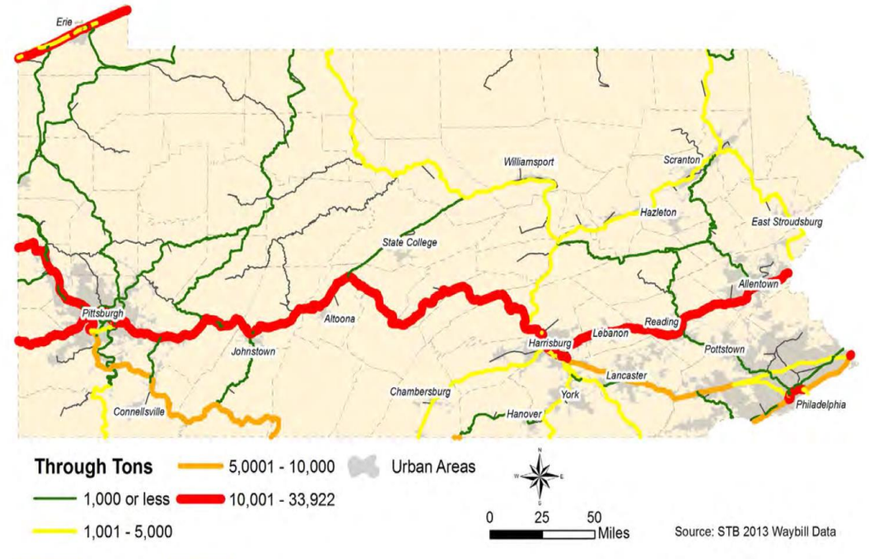


Exhibit 19: Pennsylvania Rail Freight Flows based on Through Rail Traffic Tonnage



Source: ALL Rail Line Flow Maps from Pennsylvania State Rail Plan (as based on STB 2013 Waybill Data)

Exhibit 20: Regional Waterway Freight Flows based on Total Tonnage by River Segment

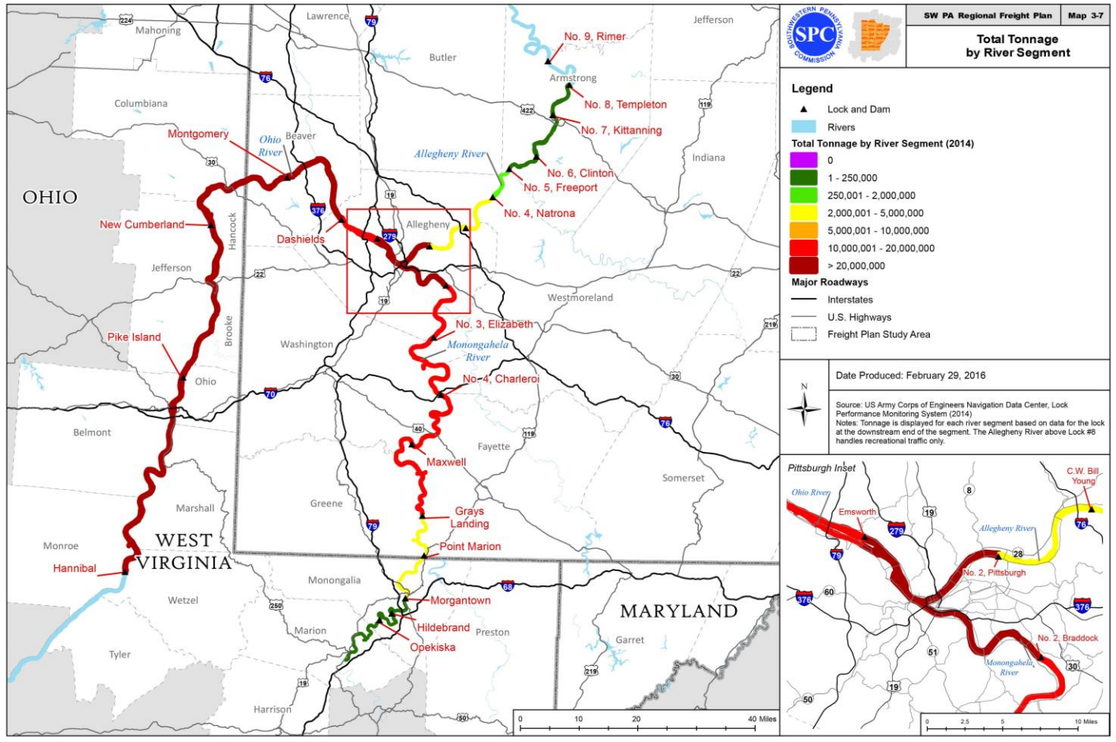
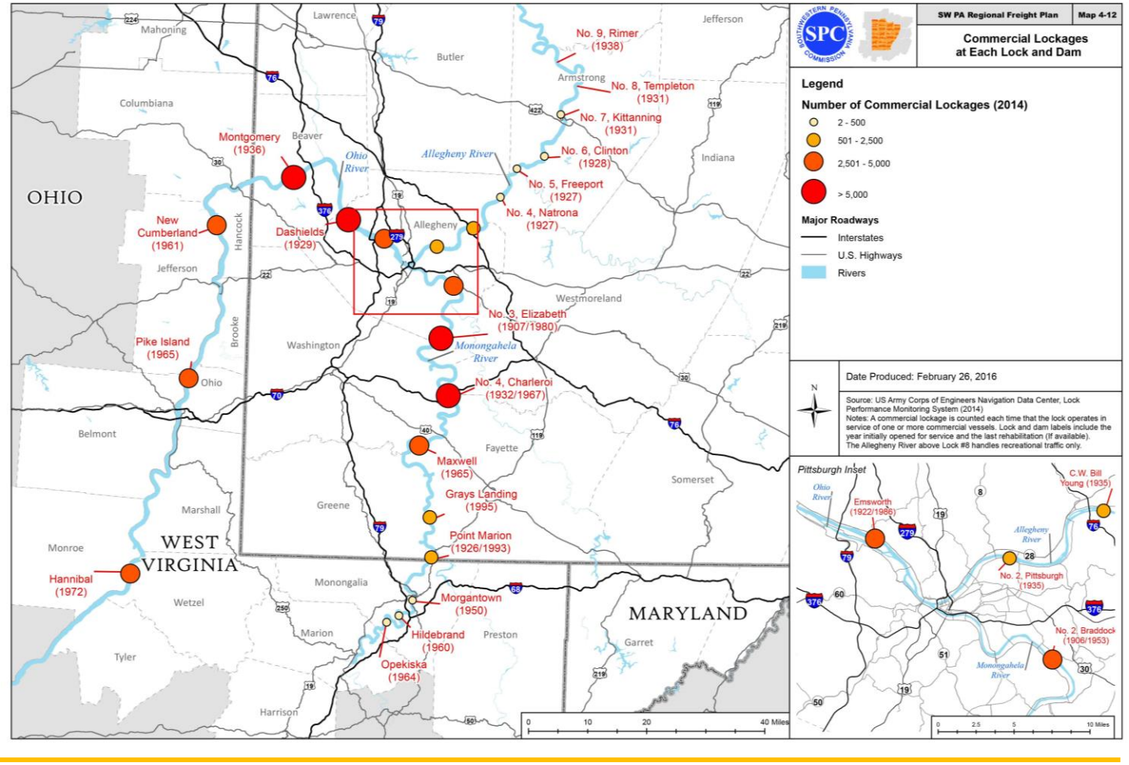


Exhibit 21: Regional Waterway Freight Flows based on Commercial Lockages



The Region's Freight Transportation Systems and Assets

Southwestern Pennsylvania's multimodal freight transportation systems link the region to its trading partners both locally and across the nation. The area is generally well-served with major assets across all modes; though these assets are not without their challenges. Topics such as aging infrastructure and modernization needs; shared-use conflicts and competing demands; or rapidly-changing local, regional, and global market influences all make it imperative that agencies and stakeholders maintain an understanding of how the systems work together, as well as their specific or localized nuances.

Regional Freight Assets At-a-Glance

Highways

- 25k roadway miles (57k in broader regional planning area)
- 10 Interstates (I-70, 76, 79, 80, 99, 279, 376; also I-68, 470, 680)
- 5 NHS Intermodal Connectors

Railroads

- 3 Class I Major Rail Carriers (NS, CSXT, CN)
- 2 Class II Regional Rail Carriers (BPRR, W&LE)
- 26 other Class III local or switching/terminal service providers
- 2 major intermodal sites (NS Pitcairn, CSX Pittsburgh (planned))
- Multiple rail yards, transloading facilities, or industry-specific sites

Inland Waterways

- Allegheny, Monongahela, and Ohio Rivers
- 17 lock & dam facilities in Pittsburgh Port District
- Links to Mississippi River and M-70/M-55 Marine Highways
- Links to Great Lakes and East Coast International Ports

Airports

- Pittsburgh International Airport and Air Cargo Terminal
- Numerous Regional/Local and General Aviation Airports

Highway Freight Networks and Systems

Route Highlights

Today's roadway system includes a network of more than 25,000 miles of federal, state, county, and local roads within SPC's 10-county region, and more than 57,000 miles of roads throughout the broader 37-county regional planning area (Exhibit 22, Exhibit 23). The backbone of this system includes several Interstate and US highway routes that support the movement of people and goods to, from, within, and through the region. Numerous state routes also provide critical interconnections between places and corridors; while many other lower-tier state, county, or local roadways provide for direct community access, circulation, and first/last mile connectivity for the area's freight producers and consumers. Examples of important highway corridors in and around the region include the following:

- I-70, I-76, I-79, and I-80 connect to key points far beyond the regional planning area, including Cleveland and Columbus, Ohio and points west; Charleston, West Virginia and points south; Washington, D.C., Baltimore, Philadelphia, New York City, and points east; or Erie, New York State, Canada, and points north.
- US 19, US 22, US 30, US 40, US 119, and US 422 help to connect numerous counties within the Southwestern Pennsylvania region.
- I-279 and I-376 provide direct linkages to/through the core of the region in downtown Pittsburgh.
- I-99, US 62, US 219, US 220, and US 322 provide additional important links for the broader region and neighboring areas.
- I-68, US 50, and US 250 provide additional important links for the neighboring states buffer region.

Freight-relevant highway networks in the region include the National Highway System (NHS) (Exhibit 25) and the more recent National Highway Freight Network (NHFN) (Exhibit 26) established by the FAST Act. The NHFN replaces the Primary Freight Network and National Freight Network formerly designated under MAP-21, and it was specifically established to strategically direct federal resources and policies toward improved performance of highway portions of the US freight transportation system.[1] Important freight connections on both the NHS and NHFN also include Intermodal Connectors, which are defined by FHWA as roads that provide access between major intermodal facilities and other subsystems making up the NHS (Exhibit 24, Exhibit 25). Other potentially key freight routes include an older network of highways designated by the Surface Transportation Assistance Act (STAA) of 1982 as the National Network, which identifies Interstates and other primary highways that allow conventional tractor-trailer combinations of one semitrailer up to 48 feet in length, or with one 28-foot semitrailer and one 28-foot trailer, up to 102 inches wide (Exhibit 26).

Exhibit 22: Roadway Mileage Summary for Regional Planning Area

Region	Roadway Mileage
SW PA / SPC (10-County)	25,121
SW PA / Expanded Region (9-County)	15,140
SW PA / Neighbor States Buffer Region (18-County)	17,285
Regional Freight Planning Area (37-County)	**57,547**

Exhibit 23: Roadway Mileage Summary for SPC 10-County Region

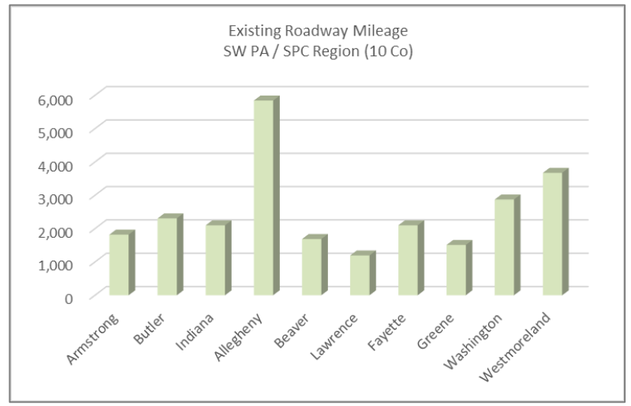


Exhibit 24: NHS Designated Intermodal Connectors

ID	Facility	Type	Length
OH36P	St. Jo Marine, Inc. – Ohio River Sand & Gravel	Port Terminal	1.32
PA6P	Donora Industrial Park Terminal	Port Terminal	11.15
PA2P	Neville Island Freight Cluster	Port Terminal	3.22
PA12L	Petroleum Products Corp. Terminal	Truck / Pipeline	0.94
PA4R	Pitcairn Intermodal Terminal	Truck / Rail	3.99
PA1A	Pittsburgh International Airport – Air Cargo Terminal	Airport	7.00
PA5P	W Elizabeth Monongahela River Terminal Cluster	Port Terminal	5.15

[1] FHWA Freight Management and Operations: http://ops.fhwa.dot.gov/freight/infrastructure/nfn/index.htm

Exhibit 25: Roadway Network (NHS Routes)

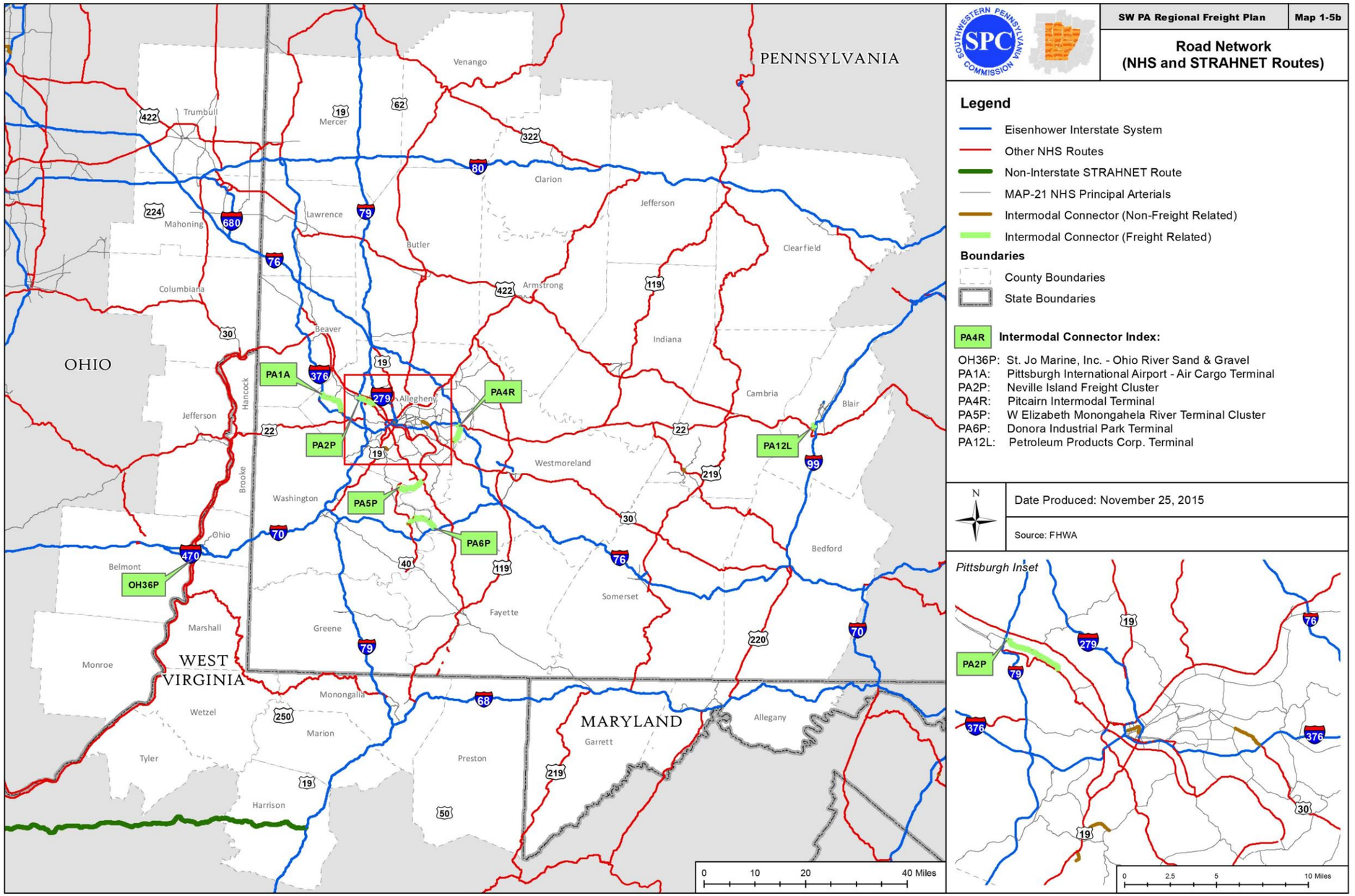
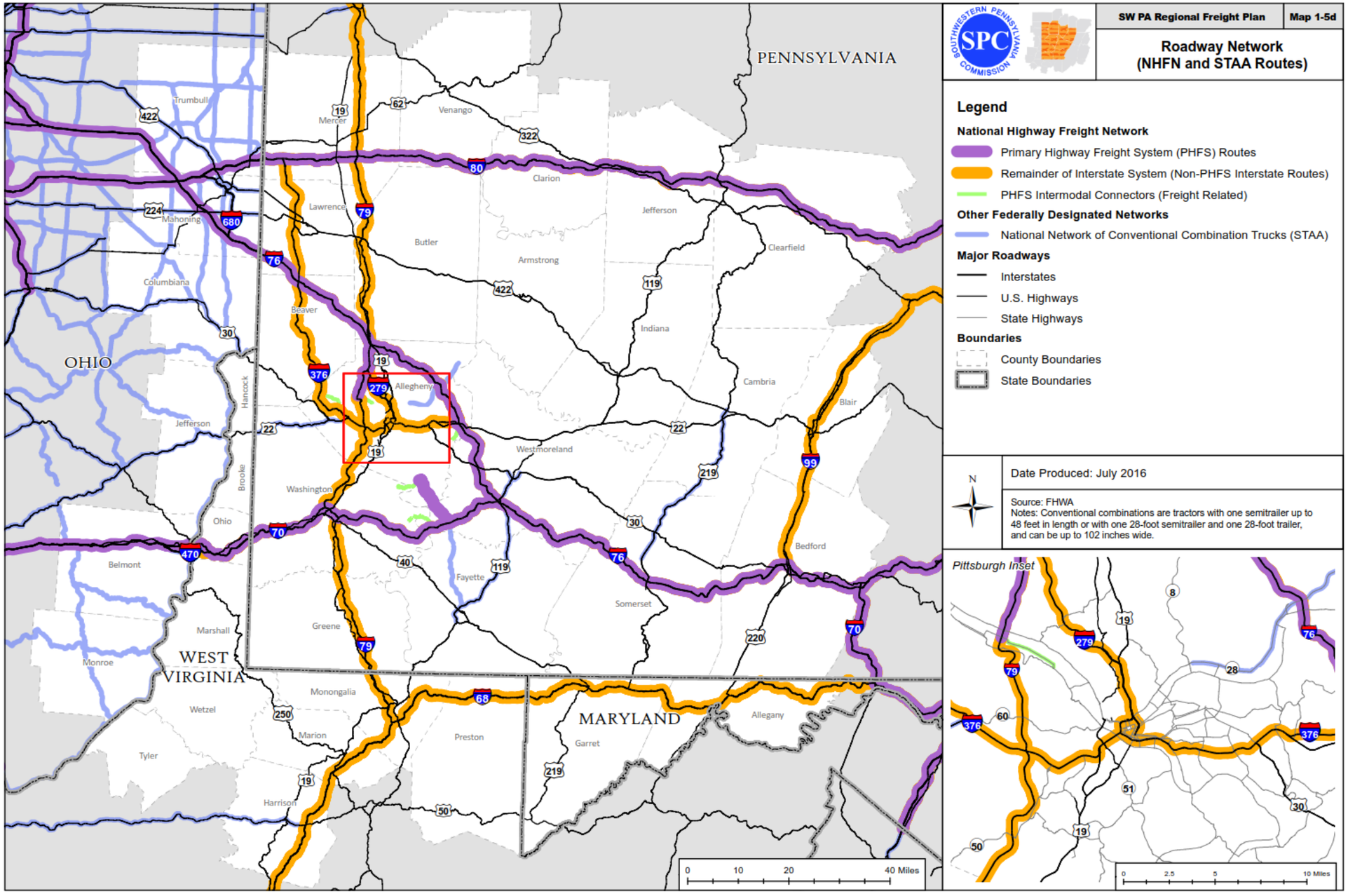


Exhibit Note: The National Highway System (NHS) consists of roadways important to the nation's economy, defense, and mobility and includes subsystems of roadways for Interstates, Principal Arterials, Strategic Highway Network (STRAHNET) routes that are important to the United States' strategic defense policy, and Intermodal Connectors that provide access between major intermodal facilities and other subsystems of the NHS.

Exhibit 26: Roadway Network (NHFN and STAA Routes)



Rail Freight Systems

System Overview

Southwestern Pennsylvania contains an extensive system of Class I, II, and III railroads with some degree of rail access to (or adjacent to) all 37 counties in the regional freight planning area (Exhibit 29 and Exhibit 30). While railroad classifications are based on annual operating revenues, Class I railroads typically provide major through service and national access to/from the area; Class II railroads typically serve regional connectivity; and Class III railroads typically provide shortline service or switching/terminal operations for local commercial and industrial properties. Key rail providers include the following:

- *Norfolk Southern (NS)* provides Class I service that includes an east-west mainline running through Pittsburgh from Chicago to points east along Pennsylvania's Central PA Corridor (Exhibit 27). Local NS operations include the Pitcairn Intermodal Facility and Green Tree operations center in Allegheny County, the Conway Classification Yard in Beaver County, and numerous regional or shortline links throughout the area.

- *CSX Transportation (CSXT)* provides Class I service that includes an east-west mainline across the corner of the state from Chicago to points east via Pennsylvania's Southwest Corridor (Exhibit 27). This route is part of CSXT's broader National Gateway corridor that focuses on double-stack clearance through Ohio to/from the East Coast. Local CSXT operations include yards, servicing, and/or repair shops in Connellsville, McKeesport, New Castle, and Pittsburgh, as well as ongoing development of a new Pittsburgh Intermodal Rail Terminal in McKees Rocks, slated to open in mid-2017.

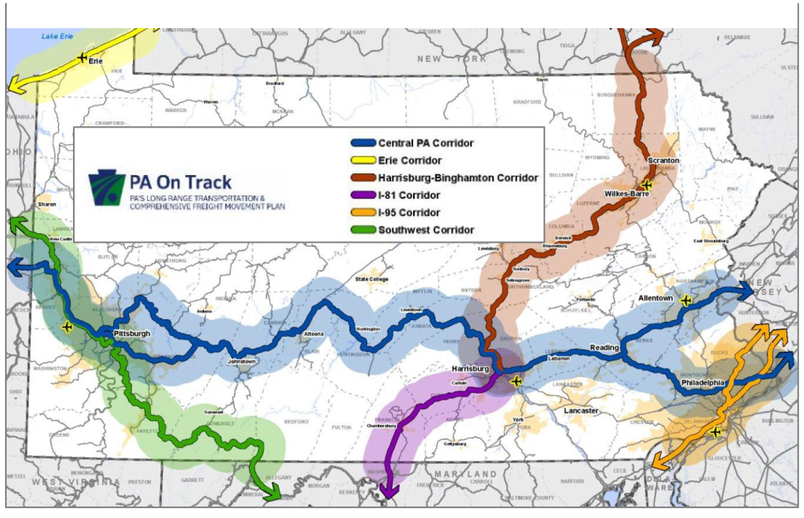
- *Canadian National Railway (CN)* provides Class I service that extends from the north through Butler and into Allegheny County, or that may be accessed via Wheeling & Lake Erie Railway connections to Toledo, Ohio. CN provides trans-continental service into Canada with Canadian links to points on both the East and West Coasts.

- *Buffalo & Pittsburgh Railroad (BPRR)* is part of the Genesee & Wyoming Corporation and provides Class II regional service that links many of the area's northern counties, Pittsburgh, and New Castle with points east to DuBois and north to Erie or Buffalo, New York.

- *Wheeling & Lake Erie Railway (WLE)* provides Class II regional service that links areas in Pittsburgh or Connellsville with points northwest to Toledo, Ohio, or south to Hagerstown, Maryland.

- Class III shortline railroad services include at least 13 providers in SPC's 10-county region and numerous others in the surrounding region (Exhibit 28).

Exhibit 27: Designated Rail Corridors and Pennsylvania Emerging Freight Corridors



Source: PA On Track, Technical Memorandum: Rail Freight Conditions, Trends and Implications, March 2014.

Exhibit 28: Class III Shortline Railroad Index

Railroad		Service
SW PA 10-County SPC Region		
AVR	Allegheny Valley Railroad Company	Local
AOR	Aliquippa and Ohio River Railroad	Switching/Terminal[2]
CM	Cumberland Mine Railroad	Local
KJRR	Kiski Junction Railroad	Switching/Terminal
KRL	Kasgro Rail Corporation	Switching/Terminal
MCLR	McLaughlin Line Railroad	Switching/Terminal
MKC	McKean & Buffalo Railroad	Switching/Terminal
NCIR	New Castle Industrial Railroad Inc.	Local
POHC	Pittsburgh & Ohio Central Railroad	Local
PSWR	Pennsylvania Southwestern Railroad	Switching/Terminal
RJCP	R.J. Corman Railroad – Pennsylvania Line	Local
SWP	Southwest Pennsylvania Railroad Company	Local
URR	Union Railroad Company	Switching/Terminal
PVTX	Privately Owned	--
SW PA Expanded Region		
CBL	Conemaugh and Black Lick Railroad	Switching/Terminal
EV	Everett Railroad Company	Local
HRS	Hollidaysburg and Roaring Spring Railroad Co.	Local
NBER	Nittany & Bald Eagle Railroad	Local
WNYP	Western New York & PA Railroad Inc.	Local
SW PA Neighbor States Buffer Region		
CUOH	Columbus & Ohio River Railroad	Local
MVRY	Mahoning Valley Railway	Switching/Terminal
OHIC	Ohi-Rail Corporation	Unknown
OHIO	Ohio Terminal Railway	Unknown
WTRM	Warren & Trumbull Railroad	Unknown
YARR	Youngstown & Austintown Railroad	Unknown
YSRR	Youngstown & Southeastern Railroad Company	Local
YB	Youngstown Belt Railroad	Unknown

Exhibit 29: Freight Rail Network – Class I Major and Class II Regional Details

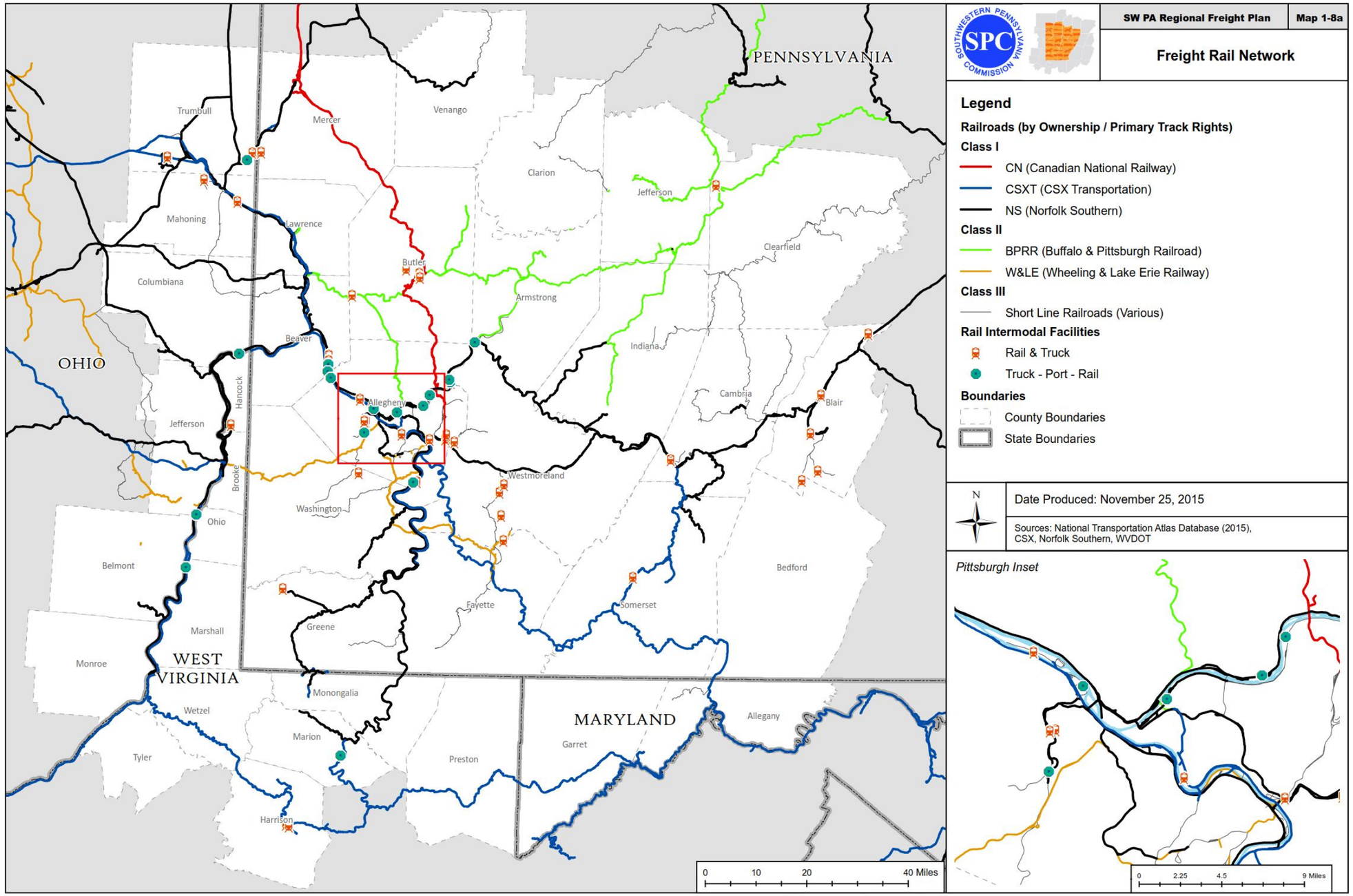
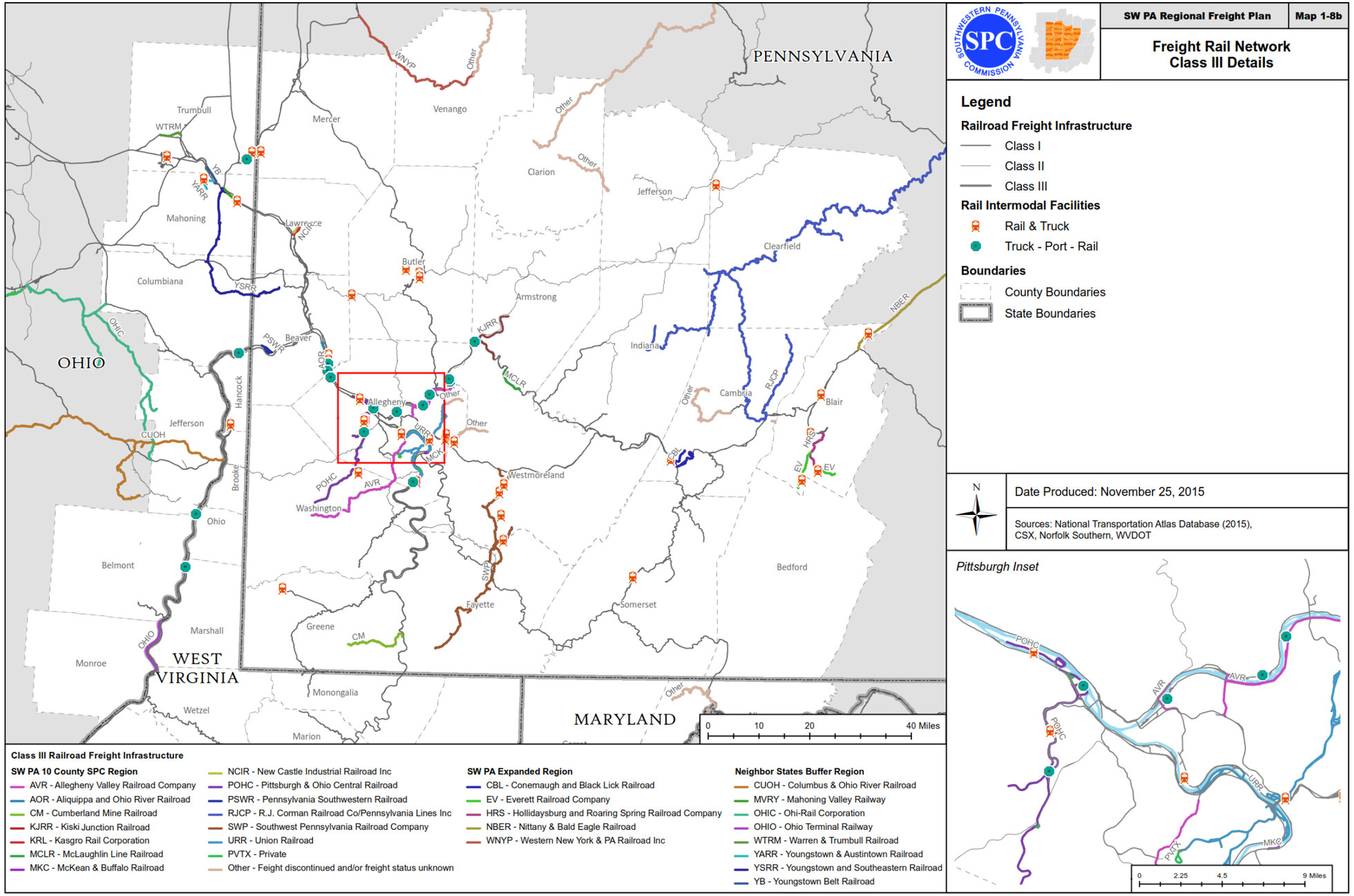


Exhibit 30: Freight Rail Network – Class III Shortline Details



Inland Waterway Freight Systems

The Allegheny, Monongahela, and Ohio Rivers provide tremendous freight assets that serve intercounty freight connections across the region, key interstate links to neighboring Ohio and West Virginia, and the opportunity for national links to points farther west and south via connections to the Mississippi River and the Gulf Coast. Locally, waterway commerce occurs within the Pittsburgh Port District and under the watch of the Port of Pittsburgh Commission.

The Port of Pittsburgh

The Port of Pittsburgh encompasses the 10-county SPC region as well as Clarion County to the northeast. An estimated 200 miles of commercially navigable water along the Ohio, Monongahela and Allegheny Rivers provide a valuable inland navigation system for raw materials, as well as bulk and manufactured goods into and through the region. With more than 200 river terminal operators in the region, the Port of Pittsburgh is one of the busiest inland ports, and one of the 20 busiest ports of any kind in the nation, according to Port of Pittsburgh Commission records.

River transport is an extremely economical method of transporting bulk goods and materials. The 30-40 million tons of cargo the Port of Pittsburgh ships and receives each year provides a significant annual benefit to the region. While the primary cargo on the region's rivers is coal, millions of tons of raw products including sand, gravel and iron ore; manufactured goods; petroleum and petroleum products; and, chemicals and related products traverse our waterways.

Source: Mapping the Future, SPC

Nationally, inland waterway travel along the Ohio River also follows the US DOT Maritime Administration (MARAD) M-70 Marine Highway Corridor, which begins in Pittsburgh and links to the M-55 Marine Highway Corridor (the Mississippi River System) near St. Louis, Missouri. As noted in SPC's long-range transportation plan, *Mapping the Future*, "in designating marine corridors, MARAD noted that river transport has the potential to help alleviate congestion from existing land routes, while at the same time reducing emissions, conserving energy, improving safety, and reducing highway maintenance costs."

Exhibit 31: Marine Highway Corridor Summary

M-70 Marine Highway Corridor

Sponsor: **Ohio Department of Transportation**

Supporters: Illinois DOT, Missouri Chamber of Commerce, Missouri DOT, and Cape Girardeau Area MAGNET.

Landside Corridor Served: Interstate-70

Corridor Description:

The M-70 Corridor includes the Ohio, Mississippi, and Missouri Rivers, and connecting commercial navigation channels, ports, and harbors, from Pittsburgh to Kansas City. It spans Pennsylvania, Ohio, Indiana, Illinois, and Missouri, connecting to the M-55 Corridor at St. Louis, MO.

Attributes:

This corridor contains major freight truck bottlenecks at numerous points, including Kansas City, St. Louis, Louisville, Dayton, Cincinnati, Columbus, and Pittsburgh. According to the U.S. Department of Transportation, long haul truck volumes are expected to reach 25,000 per day along major segments by 2035. Similarly, rail congestion is evident in and around Kansas City, St Louis, and several points along the corridor in Ohio.

This Marine Highway corridor has the potential to help alleviate a portion of the congestion from the existing landside routes, while at the same time reducing emissions, conserving energy, improving safety ,and reducing highway maintenance costs. It can also contribute to increased economic and commercial activity in the region by removing barriers to efficient freight transportation.

Source: U.S. DOT, MARAD

Barge travel along the region's rivers is made possible by a series of 17 lock and dam locations in the Pittsburgh Port District, plus 6 additional sets in the broader regional freight planning area (Exhibit 32). Collectively, these facilities are the responsibility of the US Army Corps of Engineers (USACE) and permit commercial navigation as far north on the Allegheny River as East Brady, PA; as far south on the Monongahela River as Fairmont, WV; and west onto the Ohio River System.

Due to age and funding/maintenance backlogs, however, conditions at most of the region's lock and dam facilities raise significant concerns as to the ongoing and uninterrupted viability of their operations.

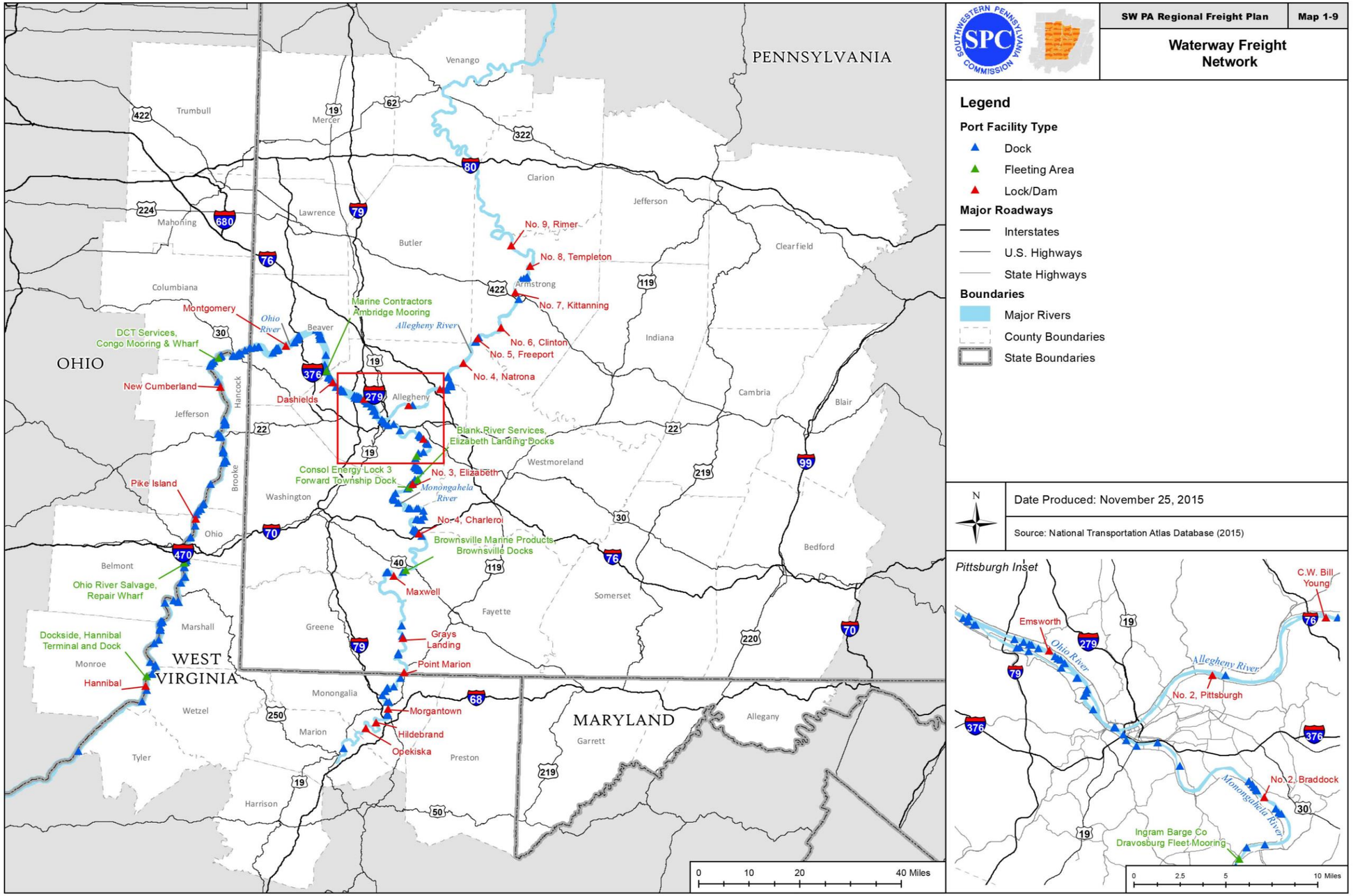
Based on condition assessments by the USACE Pittsburgh District in 2013, 10 of the 17 lock and dam sets in the district were rated as being in "poor" or "unsatisfactory" condition.[2]

Emphasizing concerns pertaining to the lock and dam systems, SPC's *Mapping the Future* summary noted that:

- *The locks and dams on the Allegheny River were all built between 1927 and 1938. The lack of funding for lock and dam maintenance and repair has reduced lock operations on the Upper Allegheny River for commercial operators to "by appointment only" status. Lock operations for recreational boaters is no longer supported by the USACE in the Upper Allegheny River.*
- *Coal is by far the largest commodity hauled on the Monongahela River, and barge transportation is essential to the cost-effective movement of coal within the region. The oldest lock and dam on the Monongahela River was constructed at Elizabeth, PA in 1905, making it more than 100 years old.*
- *The locks and dams on the Ohio River are passing 80 years of age and are in need of major reconstruction and rehabilitation. The USACE conducted the Upper Ohio River Navigation Study to determine the total costs of maintaining the operability of the three locks and dams on the Ohio River. The Draft Feasibility Report and Integrated Environmental Impact Statement released in 2014 placed a cost of slightly more than $2 billion for planning, design, and construction related to these three locks and dams.*

[2] American Society of Civil Engineers (ASCE), *2014 Report Card for Pennsylvania's Infrastructure: Inland Waterways*, based on USACE Pittsburgh District, 2013. http://www.pareportcard.org/PARC2014/downloads/PA_2014_RC_Inland_Waterways.pdf

Exhibit 32: Regional Waterway Freight Network



Air Cargo Systems

There are nine commercial service airports within the regional freight planning area (Exhibit 33) including:

- Pittsburgh International (Allegheny County)
- Arnold Palmer Regional (Westmoreland County)
- Venango Regional (Venango County)
- DuBois Regional (Jefferson County)
- John Murtha Johnstown-Cambria County (Cambria County)
- Altoona-Blair County (Blair County)
- Youngstown-Warren Regional (Trumbull County, OH)
- Morgantown Municipal-Walter L. Bill Hart Field (Monongalia County, WV)
- North Central West Virginia (Harrison County, WV)

Only two locations – Pittsburgh and Youngstown-Warren – were identified as air/truck intermodal facilities based on 2015 National Transportation Atlas Database listings. Pittsburgh International Airport was ranked as the second busiest cargo airport in Pennsylvania (56th in the US) in 2012.[3]

Pittsburgh International Airport

Pittsburgh International Airport (PIT) offers an uncongested and reliable option to move freight to and from North America. Located on direct Interstate access between Chicago and New York, Pittsburgh International Airport is an ideal location for suppliers, distributors, and logistics operations with the unique ability reach over 120 million people within 500 miles of the airport. Within a day's truck drive of Pittsburgh, 45% of the Canadian and US population is accessible serving multiple metropolitan areas from just one airport. Through the interstate network, flexible operations, and the reduced congestion both on and off the airport, cargo operators have reduced their overall transit time from the departure airport to the final distribution center. PIT cargo operations are designed to save operators both time and money in the supply chain.

Source: Cargo at Pittsburgh International Airport, http://www.flypittsburgh.com/cargo

Youngstown-Warren Regional Airport also advertises an air cargo facility capable of accommodating any small, medium, or large air cargo operation. Additionally, the area immediately surrounding the airport is home to AeroPark Industrial Park with over one million square feet of development and room for future expansion.[4]

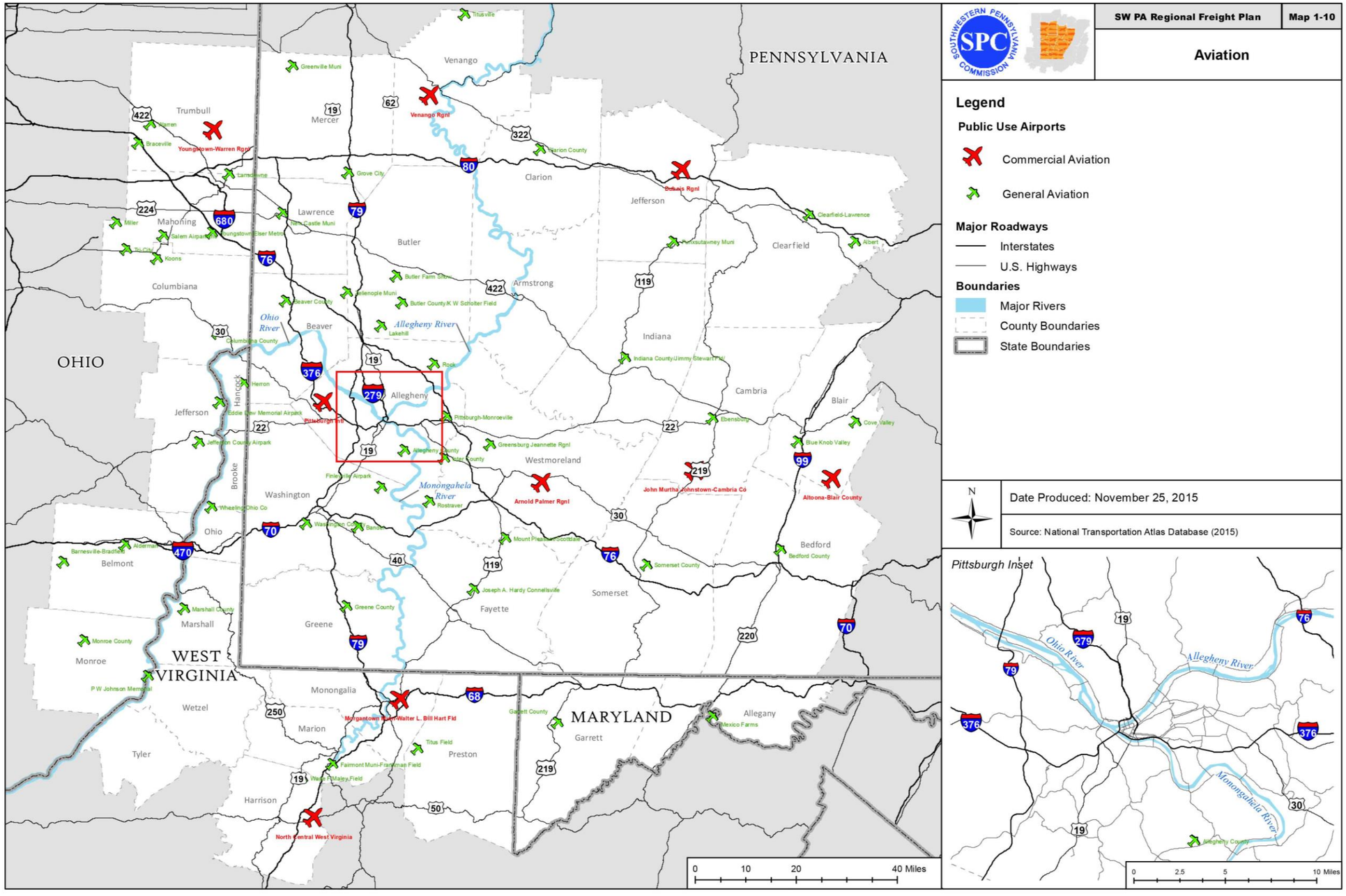
Though major cargo operations may not exist at most of the region's airports, various county and MPO planning and economic development staff interviewed during the development of this plan frequently expressed interest in local/regional airport business activities and related economic development interests. Such interests include support for both commercial and general aviation sites relative to limited high-priority shipping needs, business/corporate developments, local warehousing opportunities, and similar topics. Within the 10-county SPC region, key locations of this nature include:

- Allegheny County Airport
- Rock Airport
- Beaver County Airport
- Zelienople Municipal Airport
- Joseph A. Hardy Connellsville Airport
- Greene County Airport
- Indiana County Airport/Jimmy Stewart Field
- New Castle Municipal Airport
- Washington County Airport
- Arnold Palmer Regional Airport
- Rostraver Airport

[3] US DOT, Bureau of Transportation Statistics, Air Carrier Data, 2012.

[4] Youngstown-Warren Regional Airport, Airport Development; http://yngairport.com/.

Exhibit 33: Airport Locations



Modal Integration

Intermodal facilities are critical locations within the overall freight transportation system where freight is transferred between modes. Transfers often occur between trucks and rail, water, or air freight modes, but may also include truck-to-truck transfers and locations such as warehouses and distribution facilities. Numerous facilities exist through Southwestern Pennsylvania (Exhibit 34 and Exhibit 35). Formally designated NHS intermodal connectors also link with seven key facilities or groups of facilities within the Southwestern Pennsylvania region (as detailed previously in Exhibit 24 through Exhibit 26) including:

- St. Jo Marine Inc. – Ohio River Sand & Gravel
- Donora Industrial Park Terminal
- Neville Island Freight Cluster
- Petroleum Products Corp. Terminal
- Pitcairn Intermodal Terminal
- Pittsburgh International Airport – Air Cargo Terminal
- West Elizabeth Monongahela River Terminal Cluster

Specific intermodal facilities within the region that were also recently highlighted in the *Pennsylvania State Rail Plan* include:

- ***Pitcairn Yard:*** *Pitcairn Yard was revived as a major rail to truck intermodal node in the late 1990s. It is located 15 miles east of Pittsburgh and is operated by NS. Pitcairn provides mechanical lifts that transfer cargo between rail and truck for transport.*

- ***Pittsburgh Intermodal Rail Terminal:*** *In the summer of 2015, CSX broke ground on construction of the Pittsburgh Intermodal Rail Terminal in Stowe Township and McKees Rocks, near Pittsburgh. This important connection in CSX's $850 million National Gateway is a $60 million investment in redeveloping the former site of the Pittsburgh & Lake Erie Rail Yard. CSX expects to finalize construction of the terminal by 2017.*

- ***Additional CSX Facilities:*** *Other CSX facilities in Pennsylvania include a major rail yard in Pittsburgh (Demler Yard) and TRANSFLO terminals in Butler, Chester, Philadelphia (2), and Pittsburgh. TRANSFLO is a branch of CSX that provides transloading services through a network of 56 active terminals across the country.*

Newer developments also include opportunities in Westmoreland County associated with Westmoreland Logistics Park – a rail freight transload terminal in East Huntingdon Township that is also adjacent to the RIDC Westmoreland site (former site of Sony Technology Center) near New Stanton.

Exhibit 34: Multimodal/Intermodal Freight Transfer Facilities

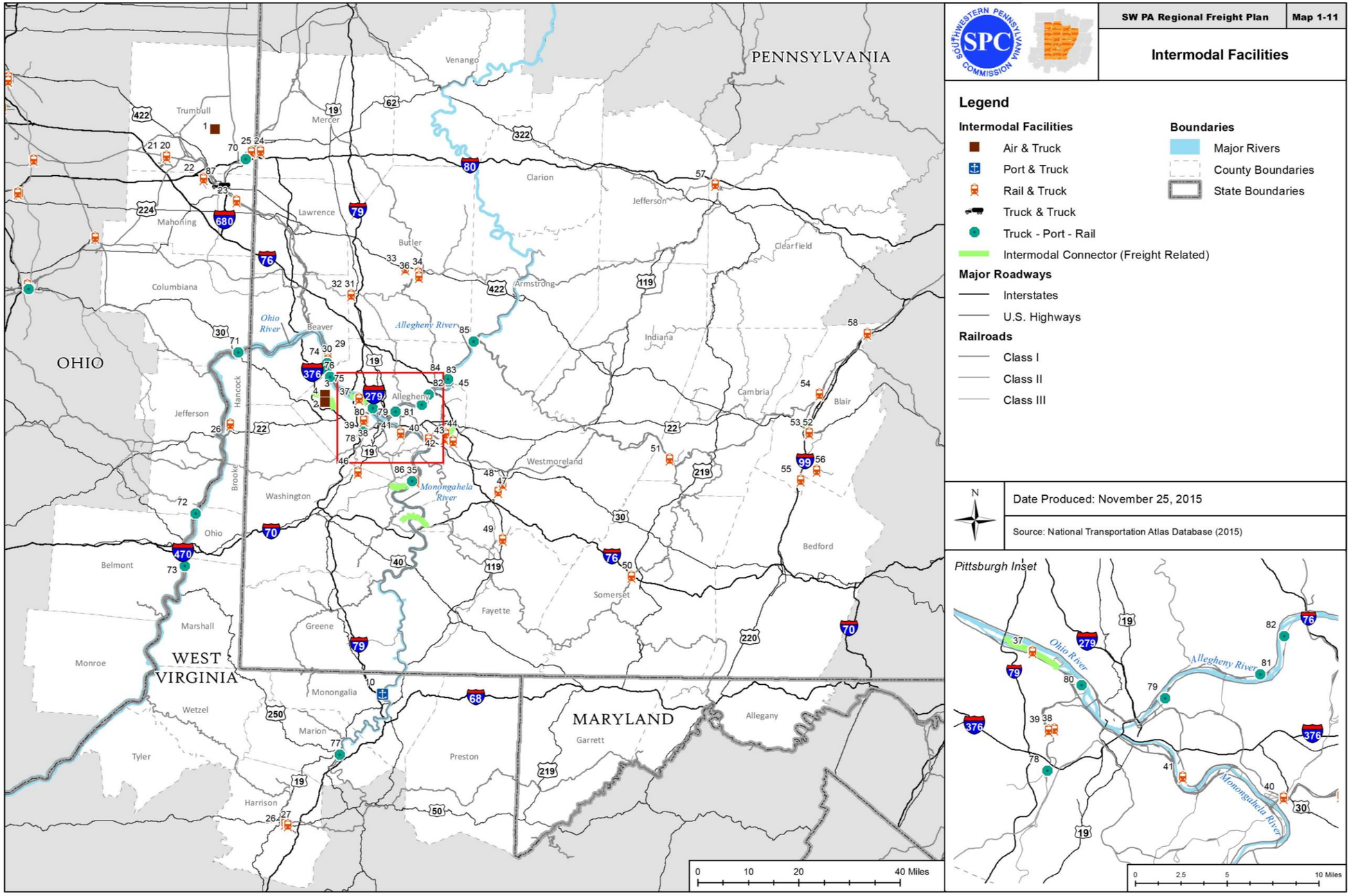


Exhibit 35: Multimodal/Intermodal Freight Transfer Facility Index

Index #	Location	City	State	Association
	AIR-TRUCK FACILITIES			
1	Youngstown-Warren Regional Airport	Vienna	OH	
2	Emery Forwarding	Moon Township	PA	
3	Emery Customs Brokers	Moon Township	PA	
4	Pittsburgh International Airport	Pittsburgh	PA	
	PORT-TRUCK FACILITIES			
10	Guttman Oil Dock	Star City	WV	
	RAIL-TRUCK FACILITIES			
20	Transflo Warren	Warren	OH	CSXT
21	Meritex Logistics	Lordstown	OH	CSXT
22	United Freezer & Storage Co.	Youngstown	OH	
23	Penn-Ohio Warehouse	Struthers	OH	MV RY
24	United Steel Service, Inc.	Masury	OH	
25	Bi States Storage, Inc.	Wheatland	PA	
26	Weirton Ice and Coal Supply Company	Weirton	WV	NS
26	Transflo	Clarksburg	WV	CSXT
27	Clarksburg	Clarksburg	WV	
28	Pittsburgh Intermodal Terminals, Inc.	Ambridge	PA	NS
29	General Material Terminals	Baden	PA	NS
30	Con-Am Warehouse & Distribution Services, Inc.	Ambridge	PA	NS
31	MHF	Zelienople	PA	
32	MHF Warehouse	East Butler	PA	BPRR
33	MHF, Inc.	Butler	PA	
34	Freeport Terminals	Butler	PA	NS & G&W
35	Miller Transporters, Inc.	Elizabeth	PA	VARIOUS
36	Transflo Butler	Butler	PA	CSXT
37	Matlack, Incorporated	Pittsburgh	PA	WLE ROOK YD
38	Mallet's Gateway Terminal	Pittsburgh	PA	
39	NS Independent Bulk Transfer Terminal	Pittsburgh	PA	NS
40	Metro Metals Corporation	East Pittsburgh	PA	NS
41	B&O TBS Terminal	Pittsburgh	PA	CSXT
42	NS	Wall	PA	
43	NS	Trafford	PA	NS
44	NS	Wall	PA	NS
45	RAM Terminals	New Kensington	PA	NS

Index #	Location	City	State	Association
	RAIL-TRUCK FACILITIES (Continued)			
46	Dillner Storage Company	McMurray	PA	NS
47	AMPCO Distribution Services	Youngwood	PA	
48	Safe Handling – Westmoreland Rail Freight Terminal	Mt Pleasant	PA	
49	Savage Services	Mt Pleasant	PA	
50	Somerset Milling Co.	Somerset	PA	CSXT
51	Conemaugh and Blacklick Railroad Co.	Johnstown	PA	BNSF
52	ND Connecting Line Bulk Transfer Terminal	Duncansville	PA	EV
53	Keystone Bulk Logistics, Incorporated	Duncansville	PA	EVERETT
54	Ward Corp. of PA	Altoona	PA	NS
55	McCabe Warehousing and Distribution	Claysburg	PA	
56	Smith Transport	Roaring Spring	PA	
57	Nicholas Enterprises - DuBois	DuBois	PA	
58	Eagle Logistics (Smith Transport)	Tyrone	PA	
	TRUCK-PORT-RAIL FACILITIES			
70	Yellow Warren OH Terminal	Hubbard	OH	
71	Seaforth Mineral & Ore Co., East Liverpool Wharf	East Liverpool	OH	
72	Wheeling-Pittsburgh Steel Corp., Yorkville Plant D	Yorkville	OH	
73	Transload Solutions	McMechen	WV	
74	Ambridge Regional Distribution & Manufacturing	Ambridge	PA	
75	Pittsburgh Intermodal Terminals	Ambridge	PA	
76	Port of Leetsdale	Leetsdale	PA	
77	Fairmont	Fairmont	WV	
78	McKees Rock Industrial Enterprise	Carnegie	PA	
79	Commonwealth Warehouse	Pittsburgh	PA	
80	Yellow Pittsburgh PA Terminal	McKees Rocks	PA	
81	General Commodities Warehouse	Blawnox	PA	
82	Allegheny Valley Railroad Bulk Commodity Pit	New Kensington	PA	
83	Allegheny River terminals	New Kensington	PA	
84	Paul Riggle and Sons	New Kensington	PA	
85	Freeport Terminals	Freeport	PA	
86	River Lift Industries, Inc.	West Elizabeth	PA	
	TRUCK-TRUCK FACILITIES			
87	United States Postal Service	Youngstown	OH	

The Regional Freight Narrative

As part of the development of the Regional Freight Plan, relevant insights were drawn from a variety of task efforts that included background research and document reviews; technical data and mapping assessments; select driving tours and site visits; and an outreach/interview process to garner the perspectives of various public/private agencies, stakeholders, and planning partners. These efforts touched upon a broad array of topics and interests, challenges and deficiencies, and existing or future opportunities, many of which were documented in the series of technical memorandums completed during the plan development process (see Section 1, Exhibit 1-2).

Collectively, these key freight planning insights tell different parts of a story that make up the regional freight narrative – a shortlist of important freight topics or principles with common ground in terms of their notable impacts, influences, or possibilities relative to freight and goods movement across the region.

This narrative generally touches upon ten major groups of topics that encompass planning and economic influences, freight transportation systems, and infrastructure conditions. These topics are summarized below, and help to provide a basis for the formulation of specific freight planning objectives and strategies presented in Section 3 of this plan.

***Economic effectiveness** through safe and efficient freight transportation systems is integral to successful freight planning.*

Integrating freight needs and considerations into the development, management, and safe and efficient operation of our region's multimodal transportation systems is a means to supporting the region's economic engine and the people, resources, jobs, and industries that produce or consume the goods that our transportation systems must move. Planning perspectives must encompass transportation and economic development interests, public and private sectors, and local, regional, or broader planning efforts. The region's agencies, stakeholders, and planning partners must look ahead to help ensure that our freight transportation systems are ready and able to support, attract, and retain economic activity.

***Freight relationships and partnerships** across a diversity of transportation modes, interests, and geographic scales are essential to exploring anything from first/last mile needs, to regional game-changing projects, to international trade.*

The understated challenge of planning for freight and goods movement is that it seemingly involves everything – every type of industry and product; every economic, planning, or engineering detail for any mode that moves that product; and every logistical, regulatory, or opportunistic difference for each town, county, state, or nation through which that product moves. It also periodically exists in an environment ripe with competition – for example, between freight carriers or modes, between jurisdictions enticing new development, or between competitive grant applicants. With so much in play, fostering strong freight relationships and partnerships can be an effective way to help stakeholders holistically plan at all levels. For example:

- *Local/County*: Coordination with local or county officials can identify and explore first/last mile quarry access in Fayette County, or rail siding interests in Armstrong County.
- *State/Federal*: Coordination with PennDOT and FHWA can enhance freight's consideration in highway project programming efforts, or relative to statewide freight planning or federal freight funding opportunities.
- *Public/Private*: Coordination with public/private stakeholders can enhance project support, understanding, or opportunities related to mode or industry-specific details, such as lock and dam projects through USACE, access for the CSX Pittsburgh Intermodal Rail Terminal, or related to the future ethane cracker plant in Beaver County.
- *State/Regional*: Coordination and partnerships with stakeholders beyond Pennsylvania can also explore broader opportunities such as international port connectivity to Belgium via Cleveland; container-on-barge service to the Gulf Coast via Cincinnati; or multistate partnerships in pursuit of broad-reaching freight programs and competitive grants.

MAASTO Success Story

The Mid America Association of State Transportation Officials (MAASTO) was awarded a $25M Tiger Grant in 2015 for a Regional Truck Parking and Information Management System (TPIMS) project focusing on major freight corridors throughout the Midwest. The project was spearheaded by the State of Kansas in partnership with Indiana, Iowa, Kentucky, Michigan, Minnesota, Ohio, and Wisconsin; and represents a successful, large-scale, competitive grant award based on collaborative freight planning.

***Industrial parks and brownfield sites** demonstrate existing successes and future possibilities throughout the region, creating important hubs of freight activity through strategic and intentional development planning.*

Many of the region's most vibrant freight activity centers and pending growth areas are, not by chance, centered on key industrial parks, brownfield sites, or similar clusters and redevelopments. Specific examples include Leetsdale, Neville Island, and RIDC Park in Allegheny County; Victory Road Business Park in Butler County; and the RIDC Westmoreland site and several other locations included in Westmoreland County's strategically planned system of countywide industrial parks. Brownfields include future redevelopment opportunities at the Almono and Carrie Furnaces sites in Allegheny County; and are also an interest area for SPC's planning partners to the west with sizable former steel mill and rail sites in Ohio and West Virginia in Eastgate COG and BHJMPC territory. In any of these cases, intentionally clustering or consolidating future freight developments into such areas may help to consolidate infrastructure enhancement needs; improve the level of multimodal access or services that can support freight activities; and take advantage of existing or planned mixed-use resources – all to the benefit of improving economic development opportunities.

Coal and shale oil and gas industry trends *make up a substantial part of the region's past, present, and future freight story, but also present unique challenges and opportunities that will continue to unfold over time.*

Coal powered much of the region's industrial history, but also continues to have a dominant presence today tied to power plant operations and notable export tonnage. The nation's first and second largest underground coal mines are in Greene and Washington Counties. That presence, however, is facing substantial changes with declining coal markets – changes that notably impact rail and waterway freight transportation, and that are accelerated by closures or gas conversions at several of the region's coal-fired power plants. A drop in coal revenues by rail eventually yields line consolidations or closures; while a drop in waterway coal tonnage may further threaten funding opportunities for critical lock and dam maintenance needs. Such conditions introduce key challenges for the region, which must continue to focus on:

- Reinventing rail markets, maintaining economies-of-scale, and pursuing innovative means to ensure cost-competitive rail services; and
- Pursuing partnerships or innovative opportunities to utilize excess freight movement capacity that is available on the region's river systems.

Newer developments in energy resources include the shale oil and gas industry that has tapped into the vast Marcellus and Utica shale deposits across the region. Unique freight situations that accompany this industry include extremely rapid growth; heavy cargos and high truck volumes that frequently impact secondary or rural travel routes with lower functional classifications; variability in terms of surges of activity that occur at different times within the well drilling process; and related uncertainties that make it difficult for planning officials to proactively prepare for or respond to the dynamic development and activity patterns related to new well sites. Though the pace of expansion in oil and gas activity has largely declined over the past couple of years as a result of market and natural gas pricing conditions, most stakeholders agree that activity may increase again in the future if/when economic conditions become more favorable.

Whether based on uncertainties surrounding coal or shale oil and gas, related future freight planning or economic development interests may require a higher level of creativity or adaptability to react to potential ongoing declines or unanticipated resurgences. As older markets shift, the region must be prepared to adapt to new possibilities including, for example, timber and wood products in traditional coal areas, offshoots of the oil and gas industry, growth in e-commerce, or a continued emphasis on advanced manufacturing and unique supply chain roles.

Regional Energy Strengths

The new center of American energy; ample natural resources and a 150-year history of innovation are the foundation of a diversified energy economy comprising 800+ firms and approximately 50,000 direct energy jobs, supporting seven strategic energy sectors: natural gas, coal, nuclear, solar, wind, transmission & distribution, and intelligent buildings.

Source: Pittsburgh Regional Alliance, http://www.alleghenyconference.org/PittsburghRegionalAlliance/PDFs/KeySectors/KeySectorEnergy.pdf,

The Future of Shale Oil & Gas

While the full story of the shale gas formations exploration may not be written for years to come, it is apparent that it will be a significant chapter of this region's future. Large international energy firms, high volume production wells, drilling pads, roadways, pipelines, gathering systems, surveying work, permit preparation data and landowner relationships are now part of the development context in Southwestern Pennsylvania and adjacent regions.

Source: Mapping the Future, SPC

Efficient highway operations *are critical for the movement of freight by truck throughout the region, access to and from individual industry sites, and effective modal integration with the region's rail, water, and air assets.*

Though the region offers substantial multimodal assets, the majority of overall freight (64%) still moves by truck, while certain areas (e.g., Lawrence or Butler Counties) or certain commodities (e.g., food products) see truck proportions well above 90%. Trucks are typically the first/last mile lifeline for many industries and businesses; they link to freight activity centers along major Interstates, in the busiest urban areas, and in the most remote rural locations; and they provide critical connections to/from other modes of transportation locally, regionally, and across the state and nation.

Safely and efficiently accommodating truck movements alongside commuter congestion, weight-restricted bridges and roadways, vertical clearance constraints, community transportation needs, and other aspects of the region's highway system requires coordination and collaboration among different users and interests.

Waterway and rail assets *provide an inherent value to the region in terms of their transportation efficiencies and environmental benefits while also supporting modernized industries and products that affect everyday life.*

These assets have been an integral part of the region's industrial heritage, and they are no less important to Southwestern Pennsylvania's industries and related raw materials, products, and jobs today. They provide an economy of scale to carry massive amounts of material more efficiently than highway transportation. Recent testimonies to the US Senate, for example, have noted that "railroads are, on average, four times more fuel efficient than trucks".[5] These efficiencies result in lower energy usage, fewer emissions, and less pollution. Fewer trucks on the road translates to less congestion, less pollution, and less direct travel impacts in local communities.

Heavy commodities including coal, aggregate, metal products, chemical or petroleum products, and metallic ores that often move by barge or rail continue to be an integral part of serving a modern industrial base, jobs, and everyday products and needs (e.g., the broad reaching influence of the aggregate industry as summarized in Exhibit 36). Such materials and the waterway and rail assets that transport them support a wide variety of important activities such as advanced manufacturing; power generation; major development opportunities; water purification and treatment; construction of homes, roads, and schools; and import/export trade.

River Transport Savings and Roles

Commercial navigation is important to the region's economy because river transport is an extremely economical method of transporting raw materials and bulk goods. Shipping costs for raw materials average .97 cents per ton mile by barge compared with 2.53 cents per ton mile by rail or 5.35 cents per ton mile by truck. The 37 million tons of cargo the Port of Pittsburgh ships and receives each year provides a significant annual benefit to the region (estimated at $2.5 billion). The primary cargo in the Port of Pittsburgh is coal but millions of tons of raw products including sand, gravel and iron ore; manufactured goods; petroleum and petroleum products as well as chemicals and related products traverse our waterways. Thousands of jobs depend on the reliable operation of these river supply lines.

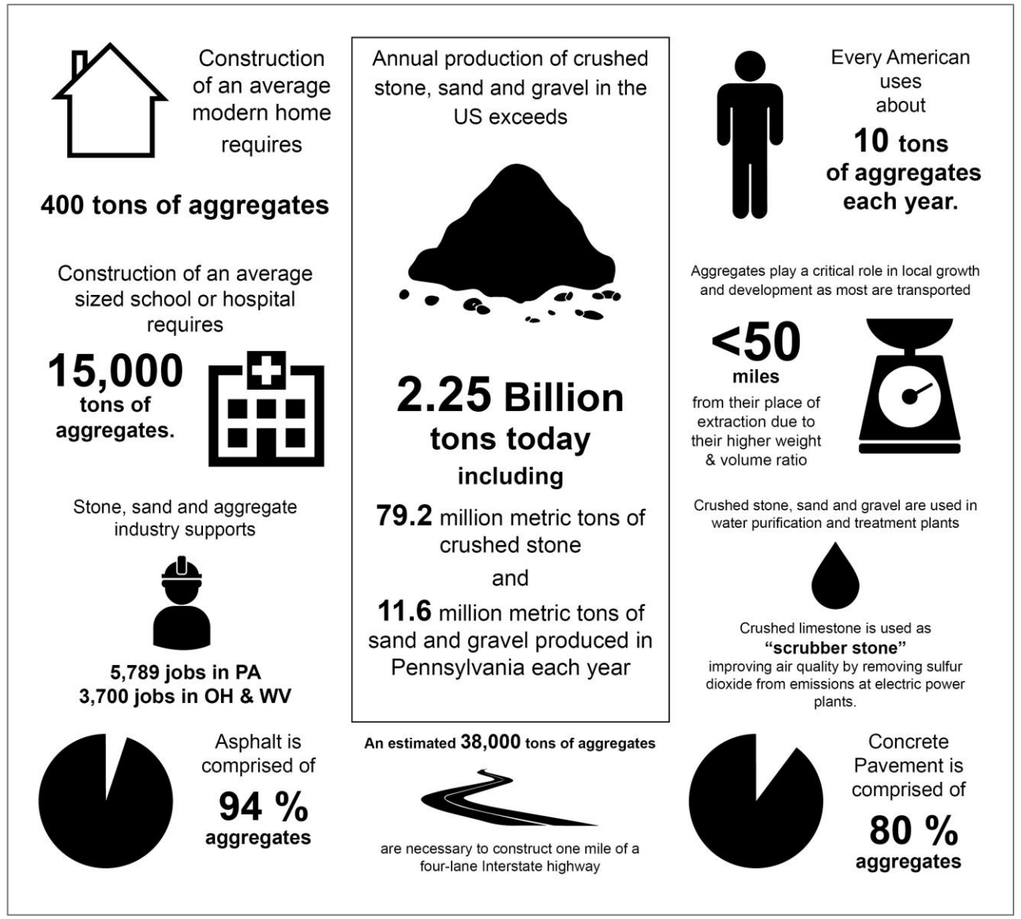
Source: USACE Pittsburgh District, http://www.lrp.usace.army.mil/Missions/Navigation.aspx

Rail's Economy of Scale

Railroads' scale enables efficiency elsewhere in the economy. One railcar of coal, for example, is enough to produce enough electricity for 21 households for a year; one railcar of wheat is enough to produce some 258,000 loaves of bread; one railcar of corn is enough to provide the lifetime corn requirements of 37,000 chickens; and one railcar of ammonia fertilizer is enough for 770 acres of grain. By enabling their customers to take advantage of their own economies of scale, railroads promote lower cost production and distribution while enhancing economic growth throughout the economy.

Source: Kansas City Southern, US Senate Committee Hearing on Intermodal and Interdependent: The FAST Act, The Economy, and Our Nation's Transportation System; July 12, 2016; http://www.commerce.senate.gov/public/index.cfm/hearings

Exhibit 36: Sample Facts and Everyday Influences of the Aggregates Industry



Source: WRA graphic compilation of data from National Stone, Sand & Gravel Association (NSSGA); http://www.nssga.org/

[5] Kansas City Southern, *US Senate Committee Hearing on Intermodal and Interdependent: The FAST Act, The Economy, and Our Nation's Transportation System*; July 12, 2016; http://www.commerce.senate.gov/public/index.cfm/hearings

Shortline and regional rail connectivity *provides vital support for localized freight operations and a competitive advantage for freight-related business and industry sites throughout the region.*

Class II regional and Class III shortline or switching/terminal services operate in all ten counties within the SPC region. They provide a level of efficiency and cost-savings in rail-rail, rail-truck, rail-barge, and rail-site connections, including opportunities to blend long-haul Class I service with "door-to-door" rail access to/from individual sites, terminals, and industrial parks. Their operations support a wide variety of industries and move products such as:

- Coal
- Metallic ores
- Aggregates including rock, gravel, sand, or rock salt
- Building materials including bricks, cement, pipe, or PVC
- Machinery, automotive, or other manufactured products
- Agricultural products including food, grain, and feed
- Lumber, forest, or paper products including cardboard
- Chemicals including powders, resins, and polymers
- Metal products including steel coils, aluminum ingots, and scrap
- Petroleum products including rubber or plastic pellets

Maintaining the critical economic benefits of these rail operations requires maintaining the lines themselves, as well as ensuring efficient access to the sites that they serve. Stakeholders notably expressed interest in additional rail spur extensions and sidings, at-grade crossing improvements, and upgrades to allow for system-wide consistency in terms of accommodating 286,000 pound gross weight on rail (i.e., 286k capability).

Shortline and Regional Railroads

The ability to be served by these railroads helps keep local businesses competitive in the national and global marketplace. Shortline and regional railroads connect with the Class I railroads, and they are one of the most important elements of the transportation system. They provide access to many commercial and industrial properties and function as an economic development advantage for many communities and businesses … by providing access from commercial and industrial facilities to the suppliers and customers they serve.

Source: Mapping the Future, SPC

Pittsburgh International and other regional airports *provide transportation links for limited high-priority air cargo, as well as crucial business and economic development assets that support key industries such as manufacturing.*

The Southwestern Pennsylvania Region includes nine commercial service airports within the regional planning area, though the overall cargo focus is directed to Pittsburgh International Airport's Air Cargo Terminal. The terminal has additional capacity available and provides direct air cargo service as well as drayage between Pittsburgh and other national air cargo hubs. Typical air cargo movements include high-value/light-weight goods such as medical supplies, electronics, or perishables (e.g., flowers or fish), as well as specialized goods such as steel plates.

Freight opportunities through the airport are partially influenced by or related to passenger travel demands, international travel markets, and efficient access to/from the region's business/industry hubs (versus commuter congestion between the airport and downtown Pittsburgh or Oakland). As such, planning and marketing efforts for the airport (through the Allegheny County Airport Authority) are anticipated to continue in relationship with broader marketing and economic development efforts to help the overall Pittsburgh region compete on a national and worldwide level.

Beyond Pittsburgh, stakeholders also notably expressed interest in fostering local/regional airport economic development relationships, enhancing truck/auto access to airport locations, and expanding warehouse space.

Air Cargo's Role and Business/Industry Influence

Shipping freight by air is typically quickest and most reliable. It is also the most costly transportation mode, and is therefore reserved for highly perishable, time-sensitive, or particularly high-value commodities moving distances of at least several hundred miles.

Air cargo plays a critical role in supporting Pennsylvania's emerging high-tech and biomedical industries. Connectivity between airports and truck routes is imperative. Trucks transfer these high-value, perishable products and materials to and from their source of production and consumption to nearby airports.

Pennsylvania's continued investment in its aviation facilities and their surrounding highway and rail infrastructure provides unique opportunities for Pennsylvania businesses to minimize transportation costs by leveraging the connectivity of these three modes.

Source: PA On Track, Pennsylvania CFMP

Asset management programs *that effectively integrate multimodal freight considerations are becoming more important amidst a reality of aging infrastructure, maintenance backlogs, and related challenges.*

Asset management considers enhanced coordination across a variety of more traditional programs including the consideration of freight needs alongside study, project, or program prioritization efforts in any of the following:

- Transportation Improvement Plan (TIP)
- Twelve Year Program (TYP)
- Long Range Transportation Plan (LRTP)
- Highway Safety Improvement Plan (HSIP)
- Regional Operations Plan (ROP)
- Congestion Management Processes (CMP)
- Regional Traffic Signal Programs
- Highway Performance Monitoring System (HPMS) efforts
- Linking Planning and NEPA efforts

Specific asset management programs may target key freight issues by mode and require ongoing coordination with a variety of different agencies such as railroad owners/operators or USACE. Rail-specific issues, for example, may aim to address 286,000 pound gross weight rail capacities (i.e., 286k compliancy) or double-stack clearance needs. Waterway issues may focus on lock and dam conditions and related maintenance backlogs. Highway issues may consider congestion, infrastructure bottlenecks, structurally-deficient bridges, weight-restricted bridges or roadways, vertical clearance constraints, or major corridor maintenance priorities.

Modern asset management programs have also become linked with more data-intensive elements within the context of performance-based planning and/or project prioritization efforts. Examples include crash databases, pavement ratings, structurally deficient bridge data, or probe data such as the National Performance Management Research Data Set (NPMRDS) containing massive amounts of real-world speed and travel time measurements. Tapping into these resources from a freight perspective can provide additional insights to help ensure that project improvements and implementations are strategically providing benefits to all transportation users, but they also may present challenges in terms of the time, technical, or staffing resources needed to process and interpret the volume of data.

Resiliency and redundancy *are critical to ensuring the continued availability of a reliable, robust, and integrated transportation network of roads, rail, waterways, and airports that are essential to freight and manufacturing in the region.*

Economic effectiveness through safe and efficient freight transportation systems is directly connected to resiliency and redundancy. This need affects freight movements at all levels from local/regional access, to state and multi-state connections, to national and international freight flows. It is also directly related to aging infrastructure and maintenance demands – both within our immediate region, and relative to overall national/global supply chains that relate to important industries in our region, such as manufacturing.

Beyond economic perspectives, issues of resiliency and redundancy also blend with broader topics related to critical infrastructure and national security. The nation's health, wealth, and security rely on the production and distribution of certain goods and services. The array of physical assets, functions and systems across which these goods and services move are called critical infrastructure. Critical manufacturing, dams, energy, food and agriculture, transportation systems, and water and wastewater systems have all been included as critical infrastructure sectors per the US Department of Homeland Security.[6] The robustness and resilience of certain components within these sectors are of particular concern relative to natural interdependencies that increase the likelihood that a localized disruption in one transportation mode can cascade across adjacent infrastructures, transportation modes, and jurisdictions.

Relative to freight and general transportation planning within our region, issues of resiliency and redundancy may be considered, for example, by:

- Accommodating multimodal transportation options through strategic investments in multimodal corridors (i.e., where parallel road, rail, and/or water systems are available).
- Reviewing highway freight travel in terms of incident management perspectives such as assessments of truck accommodations along designated emergency detour routes for the region's major Interstate routes.
- Reviewing strategic safety improvements for key freight routes or industry connections.
- Reviewing hazardous materials details or constraints.
- Reviewing supply chain issues for key industries or sites in critical infrastructure sectors (e.g., steel manufacturing).

Lock and Dam Maintenance Needs

If lock and dam needs are not addressed by the USACE, it will impede barges' ability to access Port of Pittsburgh facilities. This will create an economic disadvantage and impact critical supply chains that will put a greater demand on Pennsylvania roadways and rail lines. A catastrophic failure within the inland waterway system would also have serious effects on the industries that rely on river transport for shipping and receiving of commodities.

Source: PA On Track, Pennsylvania CFMP

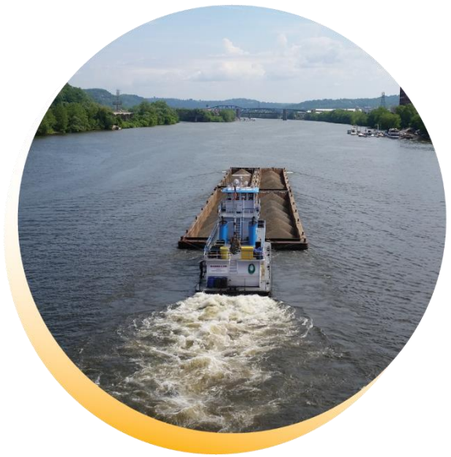
Steel Industry Critical Infrastructure Case Study

Iron mining and integrated steel production has been identified as one of the nation's most economically vital systems, in that it supplies material needed in the manufacture of automobiles, appliances, mining, railcars, and other products. Relevant local manufacturing sites in Southwestern Pennsylvania are, in many cases, dependent on supply chains that include material delivery from hundreds of miles away, such as iron ore from the Great Lakes region. These supply chains depend on critical highway, rail, and lock and dam facilities not just within Pennsylvania, but all along the supply chain route.

Aging infrastructure and unforeseen failures at any point in these supply chain routes could have serious implications for both local and national economic conditions and transportation impacts. A typical heavy steel manufacturing site, for example, uses thousands of tons of iron ore weekly – a supply that would introduce hundreds of trucks daily and severe local highway and community impacts if rail or water transport options were eliminated. Long term impacts could also severely increase transportation costs to the point of becoming cost prohibitive, which in turn may threaten facility closures or relocations, and introduce a ripple effect on local, regional, and statewide job and economic losses, and material production or consumer availability.

Aging infrastructure in this case – and on any mode at any key point in a critical industry's supply chain – can be a threat to our national economy as well as the vitality of our local communities.

[6] *Presidential Policy Directive (PPD-21) on Critical Infrastructure Security and Resilience*; https://www.whitehouse.gov/the-press-office/2013/02/12/presidential-policy-directive-critical-infrastructure-security-and-resil



SECTION 3: REGIONAL FREIGHT ACTION PLAN

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Section 3: Regional Freight Action Plan

This Regional Freight Action Plan charts a course for SPC to help guide the utilization of future planning and project resources in a manner that will proactively address freight challenges and advance freight-related opportunities throughout Southwestern Pennsylvania.

The action plan compiles and presents:

- Freight policy influences (federal, state, and regional)
- Regional freight planning objectives and strategies
- Additional freight planning and project resources, including:
  - Regional Freight Network concepts
  - Freight funding resources
  - Performance-based freight planning resources
  - Candidate freight projects

The freight actions identified herein may be carried forward on their own merit or in concert with other plan, program, or process efforts conducted by SPC or their planning partners and stakeholders at the regional, state, county, or municipal level.

*Details in **Section 3** focus on overall regional planning strategies, plus insights into regional influences beyond SPC's 10-county area. **Section 4** of this plan documents freight planning details for each individual county inside SPC's 10-county area.*

Freight Policy Influences

The latest federal planning policies and guidance place an ever-increasing emphasis on maintaining a certain level of standardization and consistency across efforts at the federal, state, and MPO levels. Reaching this consistency will overlap broader freight, long range transportation, or similar planning efforts conducted by PennDOT and SPC, and will be supplemented herein by regionally-specific freight planning objectives and strategies.

Federal Influence

At the federal level, freight provisions, policy guidance, and specific goal areas are set forth under the most recent surface transportation law – the *Fixing America's Surface Transportation Act* (FAST Act). Key freight provisions are highlighted at right, and goals are detailed in Exhibit 1.

In addition to the key freight provisions and specific goal areas, the US Department of Transportation (USDOT) released a draft version of the *National Freight Strategic Plan* (NFSP) in October 2015. The NFSP includes additional insights and best practices for enhancing the nation's freight transportation systems. Its findings are primarily framed around six key trends and challenges in freight transportation including:

- Expected growth in freight tonnage
- Underinvestment in the freight system
- Difficulty in planning and implementing freight projects
- Continued need to address safety, security, and resilience
- Increased global economic competition
- Application and deployment of new technologies

State Influence

At the state level, PennDOT introduced their statewide *2040 Long Range Transportation Plan (PA On Track)* and the related *Comprehensive Freight Movement Plan* (CFMP) in 2014-2015. The CFMP identifies statewide freight focus areas, opportunities, and projects in a planning process that was framed around four key goal areas with numerous objectives, detailed in Exhibit 2.

Regional Influence

Within the SPC region, overall transportation policies and goals are defined by *Mapping the Future: The Southwestern PA Plan*, SPC's 2015-2040 Long Range Transportation Plan (LRTP). These policies focus on supporting the Regional Vision of *transportation and land use that supports and enhances the regional economy and the communities within it*. SPC's efforts toward achieving that vision are framed within the context of Regional Places, Regional Connections, and Regional Activities, coupled with specific Regional Strategies, detailed in Exhibit 3.

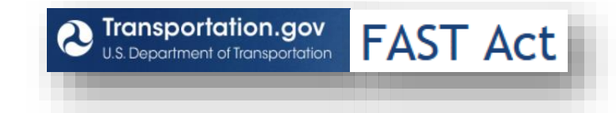
Rather than reinvent this context, and to also maintain consistency across SPC's LRTP and freight planning efforts, regional policy goals were reviewed and compared to current federal and state freight policy goals to ensure that consistent topics are addressed across all levels. With this consistency in place, SPC's overall transportation policy goals were supplemented by the customization of regionally-specific freight planning objectives and strategies as detailed in subsequent sections of this action plan and Exhibit 4.

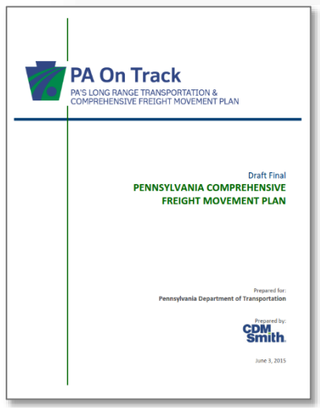
FAST Act: Key Freight Provisions

The FAST Act was signed into law in December 2015 and replaced and/or refined significant freight provisions that began under the previous 2012 legislation with the *Moving Ahead for Progress in the 21st Century* (MAP-21) Act. With these refinements, the FAST Act:

- Establishes a **National Multimodal Freight Policy** that includes national goals to guide decision-making.
- Requires the development of a **National Freight Strategic Plan** to implement the goals of the new National Multimodal Freight Policy.
- Creates a new discretionary freight-focused grant program that will invest $4.5 billion over 5 years.
- Establishes a **National Highway Freight Program**.
- Includes new authorities and requirements to improve project delivery and facilitate innovative finance.
- Collects performance measures for leading US maritime ports.

Source: https://www.transportation.gov/fastact/freight-factsheet





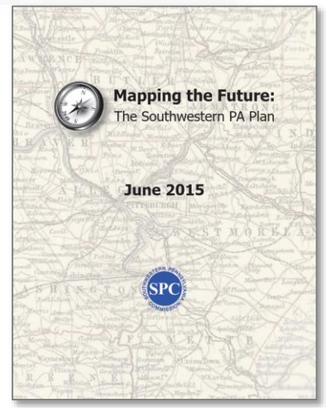


Exhibit 1: National Multimodal Freight Policy Goals

ID	Federal Policy Goal Area	Details
NMFP 1	**Infrastructure & Operational Improvements**	Identify infrastructure improvements, policies, and operational innovations that: (a) strengthen the contribution of the National Multimodal Freight Network to the economic competitiveness of the United States (b) reduce congestion and eliminate bottlenecks on the National Multimodal Freight Network (c) increase productivity, particularly for domestic industries and businesses that create high-value jobs
NMFP 2	**Safety, Security, Efficiency, Resiliency**	Improve the safety, security, efficiency, and resiliency of multimodal freight transportation
NMFP 3	**State of Good Repair**	Achieve and maintain a state of good repair on the National Multimodal Freight Network
NMFP 4	**Innovation & Advanced Technology**	Use innovation and advanced technology to improve the safety, efficiency, and reliability of the National Multimodal Freight Network
NMFP 5	**Economic Efficiency**	Improve the economic efficiency and productivity of the National Multimodal Freight Network
NMFP 6	**Reliability**	Improve the reliability of freight transportation
NMFP 7	**Movement of Goods**	Improve the short- and long-distance movement of goods that: (a) travel across rural areas between population centers (b) travel between rural areas and population centers (c) travel from the nation's ports, airports, and gateways to the National Multimodal Freight Network
NMFP 8	**Multi-Jurisdictional Planning**	Improve the flexibility of states to support multi-state corridor planning and the creation of multi-state organizations to increase the ability of states to address multimodal freight connectivity
NMFP 9	**Environmental Sustainability**	Reduce the adverse environmental impacts of freight movement on the National Multimodal Freight Network

Source: FAST Act, TITLE VIII, Section 8001

Exhibit 2: Pennsylvania State Freight Policy Goals

ID	State Policy Goal Area	Details
CFMP 1	**System Preservation**	**Preserve transportation assets using sound asset management practices within the limitations of available resources** – Optimize pavement conditions – Reduce the number of structurally deficient bridges – Encourage state-of-good-repair initiatives for all modes – Limit the number of load-restricted bridges
CFMP 2	**Safety**	**Improve statewide safety for all modes and all users** – Reduce transportation system fatalities statewide – Reduce serious injury crashes statewide – Invest in cost-beneficial approaches and technologies that enhance the safety of the transportation system and improve public understanding of high-risk traveling behaviors – Reduce crashes, injuries, and fatalities in work zone areas – Promote, develop, and sustain multi-jurisdictional traffic incident management programs to achieve enhanced responder safety and safe and quick traffic incident clearance
CFMP 3	**Personal and Freight Mobility**	**Expand and improve system mobility and integrate modal connections** – Provide multimodal infrastructure and technology advancements to improve system efficiency and trip predictability and to eliminate bottlenecks – Increase access to jobs/labor/transportation choices in urban, suburban, and rural communities – Support local communities through appropriate and equitable transportation modal options and investments – Improve first and last mile intermodal access and connections – Improve bridge under-clearances and intersection geometry
CFMP 4	**Stewardship**	**Increase efficiency through modernization of assets and streamlining of processes** – Ensure a high standard of quality and maximize effectiveness of agency and user investments – Enhance the performance of the transportation system while protecting the state's natural, cultural, and historic resources – Encourage the development and use of innovative technologies – Support transportation investments to reflect the diversity of Pennsylvanians and their needs – Support coordination of land use and transportation planning – Support economic development – Support technical assistance/training course offered to municipalities – Support clean air initiatives – Promote initiatives aimed at improving system operations and energy efficiency

Source: PA On Track, Pennsylvania CFMP

Exhibit 3: Regional Policy Goals and Strategies from Mapping the Future: The Southwestern PA Plan

		National Multimodal Freight Policy Overlap									State Freight Policy Overlap			
		1	2	3	4	5	6	7	8	9	1	2	3	4
ID	**Regional Policy Goals and Strategies**	Infrastructure & Operational Improvements	Safety, Security, Efficiency, Resiliency	State of Good Repair	Innovation & Advanced Technology	Economic Efficiency	Reliability	Movement of Goods	Multi-Jurisdictional Planning	Environmental Sustainability	System Preservation	Safety	Personal and Freight Mobility	Stewardship
LRTP 1	***Regional Places***													
	Revitalization and redevelopment of the region's existing communities is a priority					X			*	*			*	X
	Investment in infrastructure improvements will be coordinated and targeted at the corridor level to optimize the impact of the investment	X	*	*			*	X			*		X	
	The region will focus on the identification and development of industrial sites with special attention given to well-situated brownfield locations					X		*	*	*				X
LRTP 2	***Regional Connections***													
	Maintenance of the existing transportation system will be a regional priority	*	*	X			X	*			X		*	
	Transportation and development choices will reflect a priority on safe and secure multimodal and intermodal networks for both people and goods		X			*		X				X	X	
	The region's transportation system will be actively managed and operated to allow the system to function at its full potential				*		*		*				*	X
	The region's transit system will connect people with resources throughout the entire region												X	
	The entire region will have access to broadband communications infrastructure				X									X
	The region's infrastructure system will be designed to protect and enhance public health and the environment		X				*		*	X		X		X
LRTP 3	***Regional Activities***													
	The region will place a priority on business development with a focus on existing business retention and expansion					X			X					X
	The region will support initiatives designed to improve both the quality and quantity of the region's workforce to meet emerging industry demands					X			X					X
	The region will support identified strategic industry clusters					X		*	X	*			*	X
	The region will place a priority on programs and services to attract and retain a diverse population with a particular focus on young adults and immigrants					X			X					X
	The region will proactively support the emerging role of colleges and universities in economic development					X			X					X
	The region will preserve, promote and develop the tourism and hospitality industries by capitalizing on historic, cultural, recreational and ecological assets					X			X					X
	The region will preserve and develop its agricultural industry					X		*	*	X				X
LRTP 4	***Regional Strategies***													
	Promote high to medium density development in centers and clusters with a value placed on a mix of uses					X			*	X				X
	Target infrastructure improvements within centers and clusters of development and corridors that connect them	X	*	X		*		X		*	*		X	*
	Emphasize infill development with reinvestment in existing business districts					X			*	X				X
	Emphasize brownfield rehabilitation throughout the region					X		*	*	*				X
	Preserve open space									X				X
	Support agriculture in rural areas					X		*	*	X				X
	Emphasize a strong multimodal focus including transit, bicycle & pedestrian facilities, trails, roadways, active transportation elements, railways & waterways		*			*	X	X					X	*
	Emphasize connecting centers and clusters and promoting excellent access to the urban core	*				X	*	X	X	*			X	X
	Promote improved transportation operations	X	*		X		*		*				X	X
	Promote improved transportation safety		X		*		*		*			X		
	Emphasize upgrading existing water and sewer systems					X								X
	Promote limited water and sewer expansion primarily to historically underserved communities					X								X

*Table Note: X denotes primary categories or relationships, and * denotes secondary categories or relationships*

Regional Freight Planning Objectives and Strategies

To fit within the context of federal and state freight policy goals, as well as the general Regional Vision of SPC's LRTP, this Regional Freight Plan supplements those resources through the inclusion of regionally-specific freight planning objectives and strategies (Exhibit 4). The 13 objectives and corresponding sets of strategies were defined specifically to capture the freight needs and interests that were identified throughout the development of this plan.

The regional freight planning objectives outline a road map toward covering the most pertinent freight topics affecting or influencing Southwestern Pennsylvania, and the corresponding freight strategies offer "how-to" steps that SPC and its regional planning partners may consider to support and enhance freight transportation planning and goods movement opportunities across the region.

Each objective and strategy set is summarized on the following pages. Where applicable, additional insights into regional influences beyond SPC's 10-county area have been included for reference. Cross-references to the series of technical memorandums completed during the plan development process have also been noted where additional inventory data or technical details are available.

Exhibit 4: Regional Freight Planning Objectives and Strategies

ID	Objective/Strategy
1	**Interregional Freight Coordination**
	a) Multi-state/Megaregion Perspectives b) Regional Freight Partnerships c) Great Lakes Megaregion Interests d) Northeast or Piedmont Atlantic Megaregion Connections e) Regionally Significant Project Mapping/Monitoring
2	**Intraregional Freight Coordination**
	a) SPC Program/Process Coordination b) County Freight Profiles c) Localized Freight Outreach or Driving Tours d) Localized Freight Inventories, Studies, or Monitoring
3	**Freight Market and Economic Influences**
	a) Freight-Centric Population and Employment Growth Monitoring b) Freight-Centric Development Mapping/Database c) Regional Freight Market Focus Areas d) Ethane Cracker Plant Influences e) Post-Coal Market Options f) Planning and Regulatory Influences
4	**Freight Inventory and Mapping Resources**
	a) Freight Activity Area Mapping/Database b) Online Regional Freight Inventory c) Targeted Freight Inventory Research
5	**Freight Data and Analysis Resources**
	a) Truck Volume Data b) PennDOT Sign Database c) PennDOT Commodity Flow Tool d) Big Data Management (e.g., NPMRDS)
6	**Performance Based Freight Planning Processes**
	a) Coordination with State Freight Performance Measurement Updates b) SPC Regional Freight Performance Monitoring c) SPC Regional Freight Project Screening d) Linking Planning and NEPA
7	**Freight Education and Outreach**
	a) Freight Forums b) Freight Pamphlets and Marketing Materials c) Freight Supply Chain Examples d) Modern Waterway Freight Transportation Summary e) Shortline Railroad's Role in Freight Transportation f) Community-Level Freight Access and Mobility Needs

ID	Objective/Strategy
8	**Highway Freight Networks**
	a) Highway Network Connectivity Enhancements b) Regional Freight Network c) NHS Intermodal Connector Opportunities d) CRFC/CUFC Opportunities e) Interstate Emergency Detour Route Assessments
9	**Highway Freight System Operations & Maintenance**
	a) Highway System Operations Enhancements b) Infrastructure Bottleneck Management c) Congestion Bottleneck Management d) Advanced Technology Integration e) Localized Truck Parking/Staging Studies f) Urban Freight Delivery Studies g) Regulatory Influences and Relationships
10	**Rail Freight Systems**
	a) Rail Stakeholder, Planning, and Project Candidate Support b) Multimodal and Intermodal Rail Opportunities and Enhancements c) Shortline Rail Opportunities by County d) Regional Rail System Mapping/Database e) Regional At-Grade Highway/Rail Crossing Inventories and Assessments
11	**Inland Waterway Freight Systems**
	a) Waterway Freight Stakeholder, Planning, and Project Candidate Support b) Multimodal Waterway Freight Opportunities and Landside Connectivity c) River Accessible Industrial Site Preservation d) Lock and Dam Monitoring e) Waterway Needs Monitoring f) Container-on-Barge Trends g) Marine Highway Trends h) Regional Linkages to International Shipping Opportunities
12	**Air Cargo Systems**
	a) National/International Air Cargo Support b) Local/Regional Airport Economic Development Relationships c) Airport Access Enhancements d) Airport Warehousing Enhancements
13	**Modal Integration**
	a) Multimodal Corridor Management b) Multimodal Connectivity Support c) Intermodal Transportation Support

OBJECTIVE 1: Interregional Freight Coordination

Achieve effective interregional freight coordination by coordinating, collaborating, and cooperating across interregional boundaries as well as agency, departmental, and stakeholder jurisdictions to enhance the state of freight transportation and goods movement opportunities to, from, through, and within the region.

Nationally Significant Freight and Highway Projects

The FAST Act established a nationally significant freight and highway projects program to provide financial assistance for projects of national or regional significance that:

- Improve the safety, efficiency, and reliability of the movement of freight and people;
- Generate national or regional economic benefits and an increase in the global economic competitiveness of the United States;
- Reduce highway congestion and bottlenecks;
- Improve connectivity between modes of freight transportation;
- Enhance the resiliency of critical highway infrastructure and help protect the environment;
- Improve roadways vital to national energy security; and
- Address the impact of population growth on the movement of people and freight.

Source: FAST Act, TITLE I, Section 1105

Strategy 1a – Multi-State/Megaregion Perspectives

Foster a multi-state/megaregion freight planning perspective by considering shared goals, influences, economic interests, or key partnerships that will help Southwestern Pennsylvania compete nationally for major freight project, funding, or grant opportunities.

Strategy 1b – Regional Freight Partnerships

Explore, develop, and cultivate freight planning partnerships with key regional public or private sector entities including SPC's surrounding metropolitan planning organizations (MPOs) and rural planning organizations (RPOs), the Appalachian Regional Commission (ARC), and key public or private sector transportation, industry, business, or economic development groups.

Strategy 1c – Great Lakes Megaregion Interests

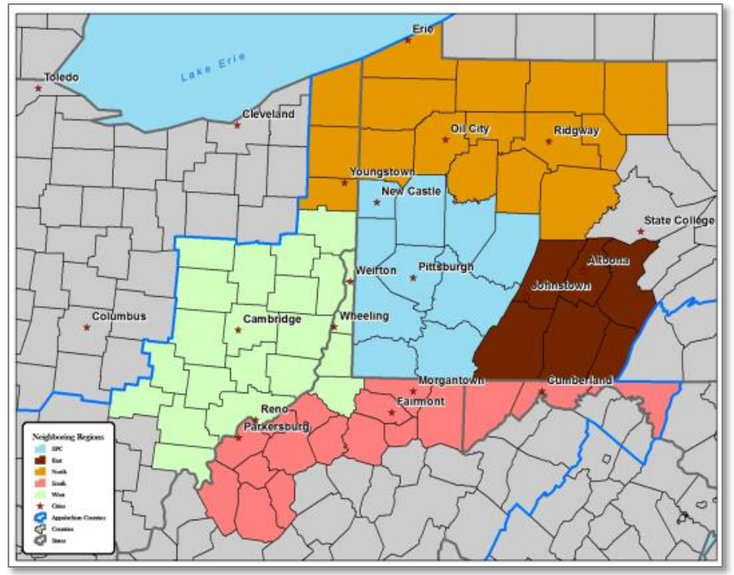
Explore opportunities to track freight interests across the broader Great Lakes megaregion including, for example, freight conferences or networking events, periodic agency/stakeholder interviews, or background research into key freight trends or topics affecting potential linkages with areas surrounding Cleveland, OH; Detroit, MI; Indianapolis, IN; Chicago, IL; Minneapolis, MN; or St. Louis, MO.

Strategy 1d – Northeast or Piedmont Atlantic Megaregion Connections

Explore broader freight topics related to the Northeast or Piedmont Atlantic megaregions including, for example, access and connectivity via major Interstate routes, national rail corridors, or international ports.

Strategy 1e – Regionally Significant Project Mapping/Monitoring

Map and monitor potential freight projects of significance within the surrounding regions including, for example, potential TIGER, ARC, RTAP/RFAP, or FASTLANE Grant candidates.[1]



Source: SPC, Neighboring Regions as identified by Mapping the Future

[1] Refer to SW PA Regional Freight Plan – Tech Memo 7 for past project candidates.

OBJECTIVE 2: Intraregional Freight Coordination

Achieve effective intraregional freight coordination by coordinating, collaborating, and cooperating across intraregional boundaries as well as agency, departmental, and stakeholder jurisdictions to enhance the state of freight transportation and goods movement opportunities across the region, while also recognizing key variations in the freight needs and interests of the different sub-areas within the region.

FAST Act: State Freight Advisory Committees

The FAST Act includes guidance for the make-up and roles of state freight advisory committees that is equally relevant at the MPO level.

It is encouraged that committees consist of a representative cross-section of public and private sector freight stakeholders, including representatives of ports, freight railroads, shippers, carriers, freight-related associations, third-party logistics providers, the freight industry workforce, the transportation department of the state, and local governments.

Specific roles of the committee shall include:

- Advise the state on freight-related priorities, issues, projects, and funding needs;
- Serve as a forum for discussion for state transportation decisions affecting freight mobility;
- Communicate and coordinate regional priorities with other organizations;
- Promote the sharing of information between the private and public sectors on freight issues; and
- Participate in the development of the freight plan of the state.

Source: FAST Act, TITLE VIII, Section 8001

Strategy 2a – SPC Program/Process Coordination

Enhance the consideration and integration of freight system issues and opportunities throughout various existing SPC programs including, for example, SPC's Congestion Management Process (CMP), Highway Safety Planning, Regional Operations Plan, Regional Traffic Signal Program, or Highway Performance Monitoring System (HPMS) efforts.

Strategy 2b – County Freight Profiles

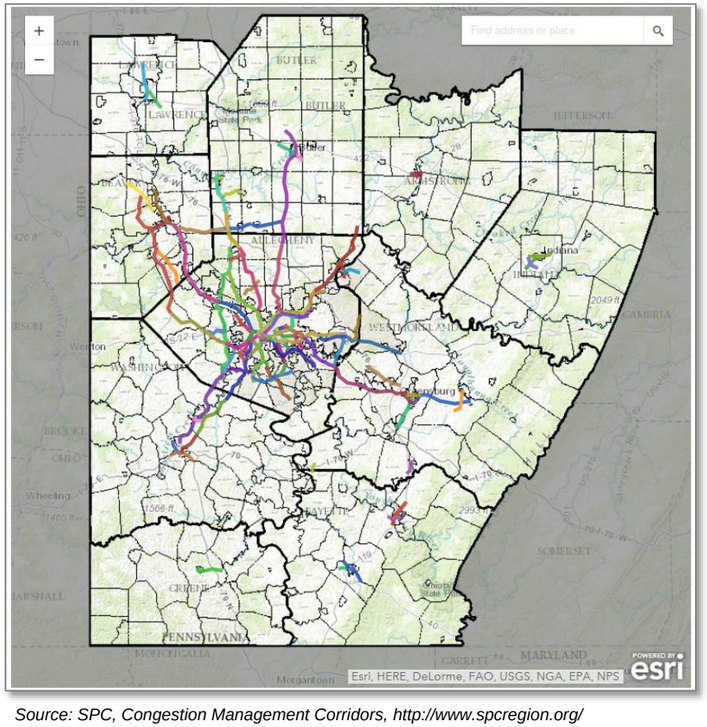
Maintain a series of County Freight Profile summaries (see Section 4 of this plan) for each county within the SPC region, including review and coordination with county/municipal officials to share, verify, or enhance the initial profiles developed as part of this plan.

Strategy 2c – Localized Freight Outreach or Driving Tours

Conduct localized county/municipal outreach meetings and/or driving tours to refine potential freight focus areas or interests relative to county-specific needs, issues, or opportunities.

Strategy 2d – Localized Freight Inventories, Studies, or Monitoring

Conduct localized freight inventories, studies, or monitoring of key county focus areas based on follow-up outreach, coordination, and monitoring subsequent to the development of this plan.



Source: SPC, Congestion Management Corridors, http://www.spcregion.org/

OBJECTIVE 3: Freight Market and Economic Influences

Maintain a current perspective and general knowledge base of the potential economic, demographic, planning, or related freight market influences that generally serve as the driving forces behind freight and goods movement trends, opportunities, or supply chain patterns within the SPC region.

Strategy 3a – Freight-Centric Population and Employment Growth Monitoring

Monitor population and employment growth trends within the SPC region with a focus on freight-centric or major retail developments to proactively identify areas where commodity types or amounts, transportation or delivery methods, or related freight transportation needs may change.[2]

Strategy 3b – Freight-Centric Development Mapping/Database

Coordinate with real estate firms, industrial property developers, and economic development agencies to compile and/or enhance a regional map and database of freight-centric development sites including existing industrial parks, commercial/industrial properties, and greenfield/brownfield opportunities.[3]

Strategy 3c – Regional Freight Market Focus Areas

Conduct targeted research, supply chain analyses, or outreach interviews to stay abreast of potential market or supply chain trends or shifts, and to provide support for potential growth in freight market focus areas[3] relevant to the SPC region including, but not limited to:

- Advanced manufacturing and materials
- Agribusiness
- Oil & gas industry
- New market possibilities (e.g., timber resources or e-commerce)
- Regionally unique supply chain partners (e.g., powdered metal products or tin)

Strategy 3d – Ethane Cracker Plant Influences

Coordinate with key public and private sector entities to monitor, manage, and/or capitalize on overall freight trends, multimodal freight transportation system influences, and major direct or indirect economic developments that may follow the construction of a multi-billion dollar ethane cracker plant in Beaver County.

Strategy 3e – Post-Coal Market Options

Coordinate with key county, industry, rail, and waterway freight stakeholders to stay abreast of potential freight transportation impacts related to overall declines in the coal industry, coupled with a focus on new market options to capitalize on subsequent rail/waterway capacities.

Strategy 3f – Planning and Regulatory Influences

Coordinate with key agency, state, county, and municipal partners to take into account various policy and regulatory influences impacting freight including, for example, federal or state freight planning policy updates, local land use and zoning perspectives, jurisdictional cooperation issues, redevelopment constraints, or workforce planning issues.[4]

Strategy 3g – Freight Funding Influences

Monitor federal, state, and local transportation issues and/or constraints related to funding potential for freight-centric projects including, for example, funding sources, funding availability, or local project match constraints.

[2] Refer to SW PA Regional Freight Plan – Tech Memo 5 (*Population and Employment Influences* section) for growth insights by Traffic Analysis Zone (TAZ).

[3] Refer to SW PA Regional Freight Plan – Tech Memo 5 (*Economic Development Perspectives* section) for preliminary discussion of site availability and development resources, potential freight development areas, and overall freight market focus areas.

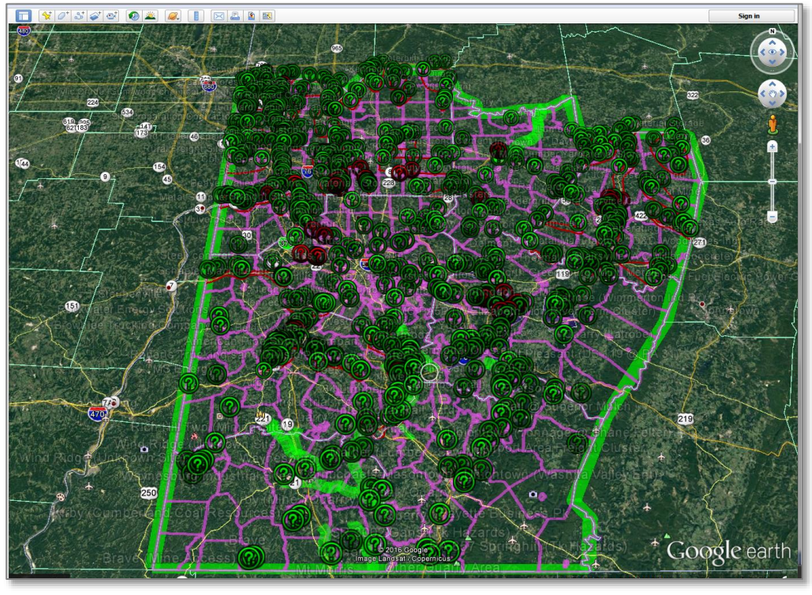
[4] Refer to SW PA Regional Freight Plan – Tech Memo 4 for preliminary discussion of potential planning and regulatory influences.

OBJECTIVE 4: Freight Inventory and Mapping Resources

Maintain, apply, and continue to enhance a comprehensive set of qualitative and quantitative freight planning processes and capabilities within SPC's staff and technical resources to support ongoing regional efforts relative to freight inventory and mapping resources.

Strategy 4a – Freight Activity Area Mapping/Database

Refine the preliminary Google Earth based freight activity area mapping and location inventories commenced during the development of this plan to include site-specific freight activity locations, GIS mapping/database compilations, and the addition of relevant site-specific detail data (e.g., company, address, freight contact, type or volume of freight, available freight modes, number of loading docks, etc.).



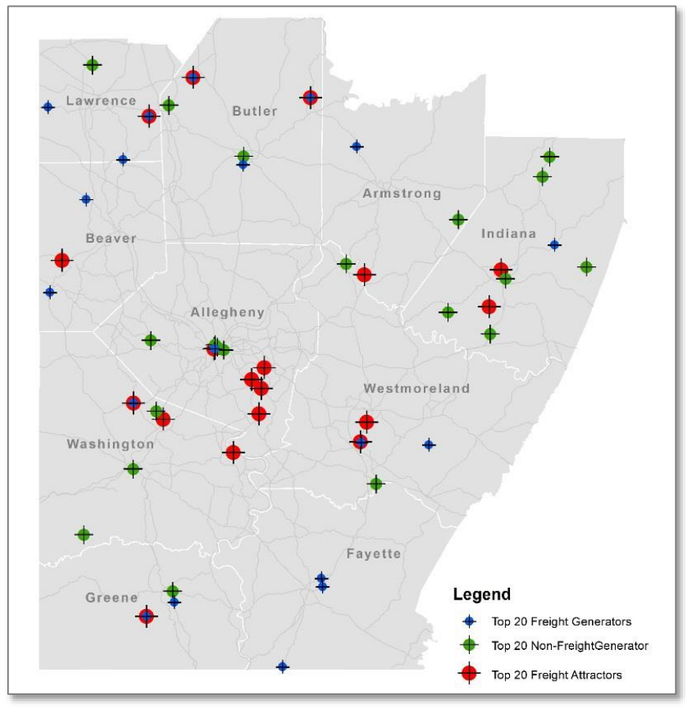
Source: SW PA Regional Freight Plan – freight activity area mapping and inventories (via Google Earth)

Strategy 4b – Online Regional Freight Inventory

Mature SPC's freight activity area mapping and database toward the development of a publicly-accessible online regional freight inventory similar, for example, to the Delaware Valley Regional Planning Commission's (DVRPC) online freight mapping and data platform.[5]

Strategy 4c – Targeted Freight Inventory Research

Conduct targeted inventory/outreach efforts to enhance and expand knowledge and location mapping of key freight industry locations or relevant system details for which preliminary insights were limited or unavailable during the development of the plan including, for example, distribution and fulfillment center, truck parking, rail siding, river port, or pipeline details.



Source: SW PA Regional Freight Plan – Tech Memo 2, Freight Finder Top Freight Attractors & Generators

[5] DVRPC *PhillyFreightFinder*; http://www.dvrpc.org/webmaps/phillyfreightfinder/

OBJECTIVE 5: Freight Data and Analysis Resources

Maintain, apply, and continue to enhance a comprehensive set of qualitative and quantitative freight planning processes and capabilities within SPC's staff and technical resources to support ongoing regional efforts relative to freight data and analyses.

Strategy 5a – Truck Volume Data

Enhance efforts to regularly compile, document, and confirm truck count data for the region, including coordination with existing Highway Performance Monitoring System (HPMS) data efforts.

Strategy 5b – PennDOT Sign Database

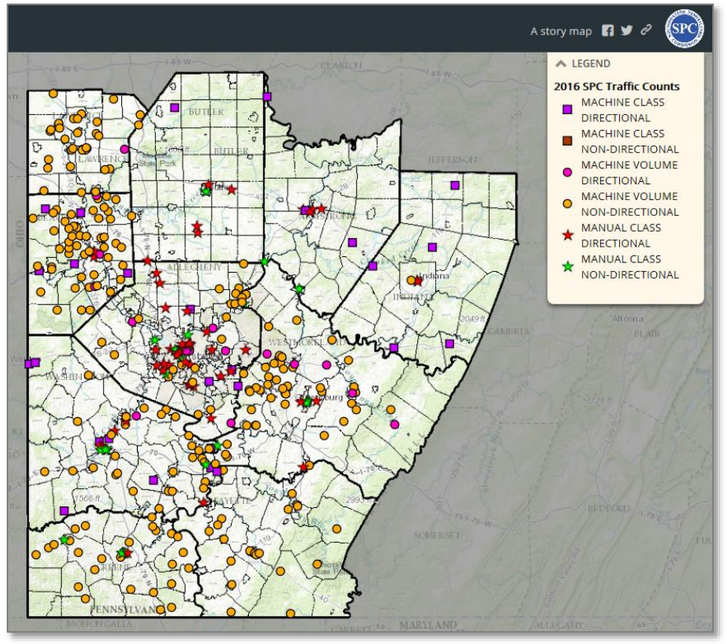
Consider future opportunities to further explore the PennDOT sign database as a potential freight data resource for identifying truck travel constraints along key corridors.

Strategy 5c – PennDOT Commodity Flow Tool

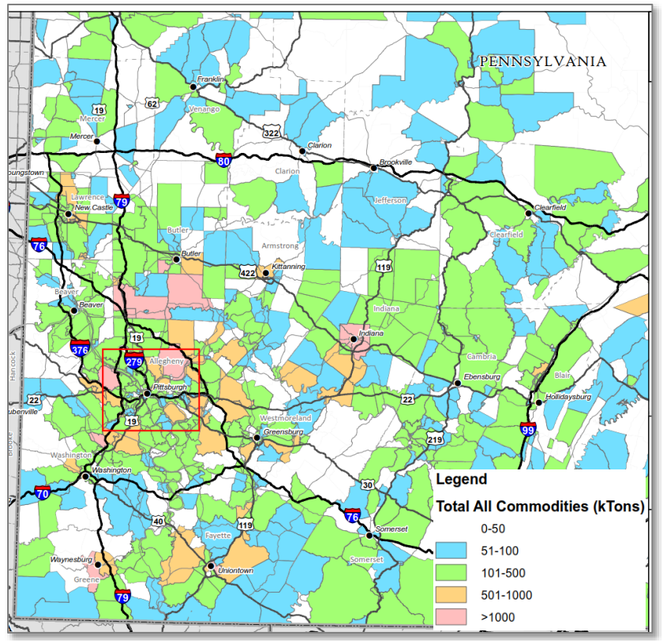
Consider future opportunities to further explore PennDOT's Commodity Flow Tool in support of county-specific freight, development, or supply chain analyses.[6]

Strategy 5d – Big Data Management

Develop and/or refine procedures to streamline and manage the application of big data relative to freight planning needs including, for example, regular updates and data-mining of the National Performance Management Research Data Set (NPMRDS) in support of freight performance measurement/monitoring as well as other overall transportation planning efforts (e.g., before/after studies of key truck data for corridors that overlap SPC's Regional Traffic Signal Program).



Source: SPC, 2016 SPC Traffic Counts, http://www.spcregion.org/trans_data_hpms.shtml



Source: SW PA Regional Freight Plan – Tech Memo 3, Truck Tonnage by Zone

[6] Refer to SW PA Regional Freight Plan – Tech Memo 3 (*Highway Freight Flows* section) for discussion of PennDOT Commodity Flow Tool and related desire line analyses.

OBJECTIVE 6: Performance-Based Freight Planning Processes

Maintain, apply, and continue to enhance a comprehensive set of qualitative and quantitative freight planning processes and capabilities within SPC's staff and technical resources to support ongoing regional efforts relative to performance-based freight planning/monitoring in coordination with federal and state requirements.

Strategy 6a – Coordination with State Freight Performance Measurement Updates

Coordinate with PennDOT and statewide freight planning officials to ascertain the status or potential revision schedule of *PA On Track* and the *Pennsylvania Comprehensive Freight Movement Plan* (CFMP) as a result of the latest 2016 federal FAST Act rulings on freight performance measurement and required consistencies between state and MPO level freight planning efforts.[7]

Strategy 6b – SPC Regional Freight Performance Monitoring

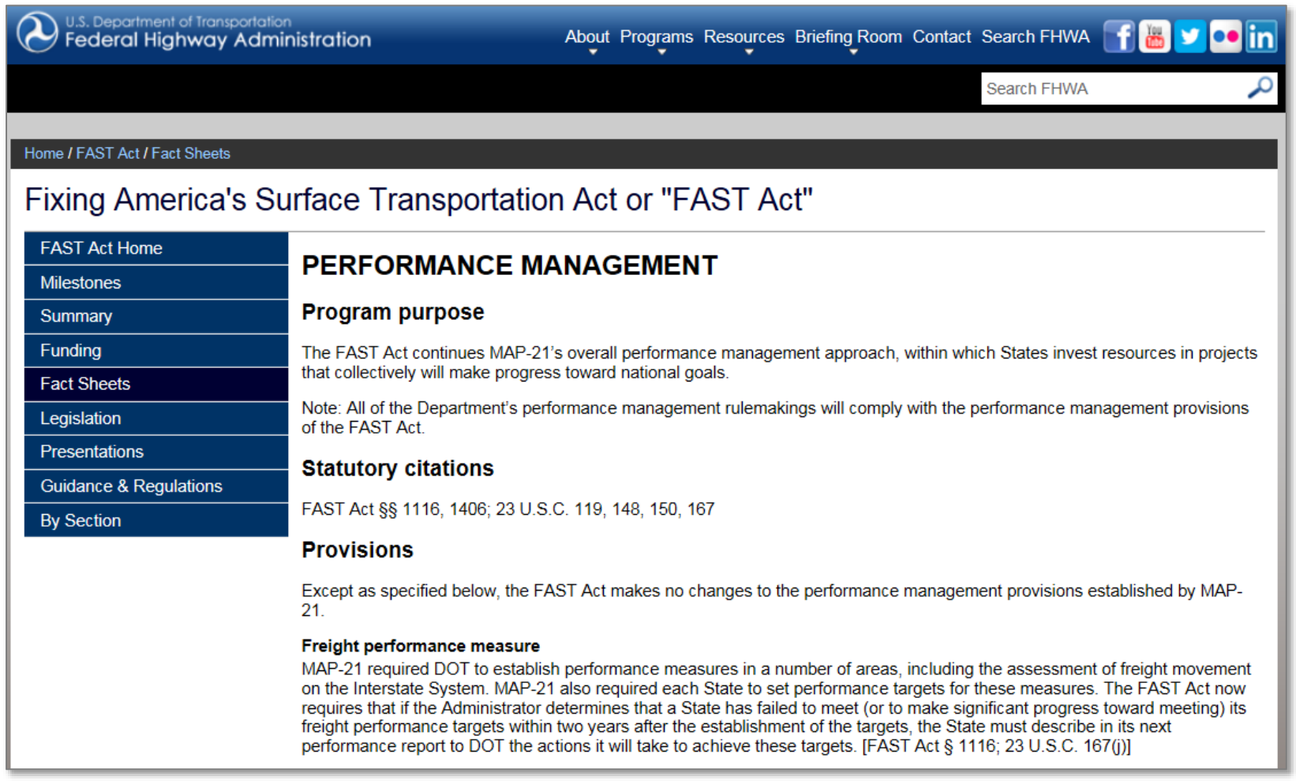
Formally establish/finalize a set of freight performance measures, metrics, and monitoring procedures for the SPC region based on detailed coordination with federal FAST Act requirements and follow-up coordination discussions with PennDOT and statewide freight planning officials.[7]

Strategy 6c – SPC Regional Freight Project Screening

Formally establish screening methods to help assess the potential freight influence of transportation project candidates within the SPC region, including a methodology to better account for this influence during the preparation of formal transportation programs (i.e., SPC's TIP, Twelve Year Plan, or LRTP updates).

Strategy 6d – Linking Planning and NEPA

Coordinate across departments within SPC and with PennDOT to enhance the integration of freight needs, influences, or projects into existing/ongoing efforts to advance Linking Planning and NEPA (National Environmental Policy Act) activities or capabilities within SPC's overall transportation planning processes.



Source: FHWA, FAST Act Performance Management Fact Sheet, fhttp://www.fhwa.dot.gov/fastact/factsheets/performancemgmtfs.cfm

[7] Refer to later sections of this plan, as well as SW PA Regional Freight Plan – Tech Memo 6 and later sections of this Tech Memo 8 (under *Select Strategy Details*) for preliminary freight performance measurement and monitoring discussions.

OBJECTIVE 7: Freight Education and Outreach

Develop and facilitate a variety of freight education and outreach opportunities, marketing materials, and related resources in partnership with the region's public and private sector freight experts and as a means to enhance a region-wide understanding of key freight topics, roles, issues, and goals across Southwestern Pennsylvania.

Strategy 7a – Freight Forums

Continue to promote and facilitate regional freight forum meetings.

Strategy 7b – Freight Pamphlets and Marketing Materials

Develop an education/outreach component that includes a series of freight pamphlets and/or similar marketing materials to summarize the importance and make-up of freight within the SPC region.

Strategy 7c – Freight Supply Chain Examples

Develop an education/outreach component that includes a series of freight supply chain examples to emphasize the importance of and critical issues related to multimodal freight movements to/from the SPC region.

Strategy 7d – Modern Waterway Freight Transportation Summary

Develop an education/outreach component summarizing the environmental, sustainability, and capacity benefits of water/barge transportation versus other modes, including discussion of secondary benefits related to modern freight investments (e.g., the future Shell Ethane Cracker Plant, potential container-on-barge opportunities via Cincinnati, overall benefits to the construction industry and related supply chains, or potential livability benefits associated with reductions in truck transportation related to heavy freight industries and riverfront industrial sites).

Strategy 7e – Shortline Railroad's Role in Freight Transportation

Develop an education/outreach component to emphasize the need/value of shortline railroad operations to support local/regional economies and industries.

Strategy 7f – Community Level Freight Access and Mobility Needs

Develop an education/outreach component addressing relationships between community design and typical Complete Streets elements alongside local freight access and mobility needs that must work in concert to support community growth and vitality, particularly in light of potential growth trends in e-commerce and related local truck deliveries.

OBJECTIVE 8: Highway Freight Networks

Support the development, maintenance, and enhancement of a robust highway freight network that will help to advance SPC's Regional Vision and link effectively and efficiently to other freight transportation modes to facilitate freight and goods movement to, from, through, and within Southwestern Pennsylvania.

Strategy 8a – Highway Network Connectivity Enhancements

Support highway freight system improvements or activities that will enhance existing or future multimodal freight network connections, access, or first/last mile linkages.

Strategy 8b – Regional Freight Network

Formally establish and/or refine a Regional Freight Network to supplement federal freight network designations.[8]

Strategy 8c – NHS Intermodal Connector Opportunities

Explore opportunities to add new, or extend existing, National Highway System (NHS) Intermodal Connector designations in support of regional multimodal freight activities.

Strategy 8d – CRFC/CUFC Opportunities

Explore opportunities to designate Critical Rural Freight Corridors (CRFC) or Critical Urban Freight Corridors (CUFC) under the guidance of the federal FAST Act and in support of regional multimodal freight activities.[8]

Strategy 8e – Interstate Emergency Detour Route Assessments

Conduct regional, county-by-county, or corridor level assessments of existing PennDOT Interstate Emergency Detour Routes to identify potential additions and/or refinements to a proposed SPC Regional Highway Freight Network from the perspective of route redundancy/resiliency.

[8] Refer to later sections of this plan, as well as SW PA Regional Freight Plan – Tech Memo 8 (under *Select Strategy Details*), for preliminary discussions of a regional freight network and CUFC/CRFC criteria.

OBJECTIVE 9: Highway Freight System Operations & Maintenance

Support the strategic operation and maintenance of a robust highway freight system that will help to advance SPC's Regional Vision and link effectively, efficiently, and safely to other freight transportation modes to facilitate freight and goods movement to, from, through, and within Southwestern Pennsylvania.

Strategy 9a – Highway System Operations Enhancements

Support highway freight system improvements or activities that will enhance existing or future highway operations relative to highway safety, truck parking and facilities, or special truck routing/permitting issues.

Strategy 9b – Infrastructure Bottleneck Management

Support highway freight system improvements or activities that will help to manage or mitigate infrastructure bottlenecks such as may be attributable to weight-restricted bridges or roadways, vertical clearance obstructions, or geometric constraints.[9]

Strategy 9c – Congestion Bottleneck Management

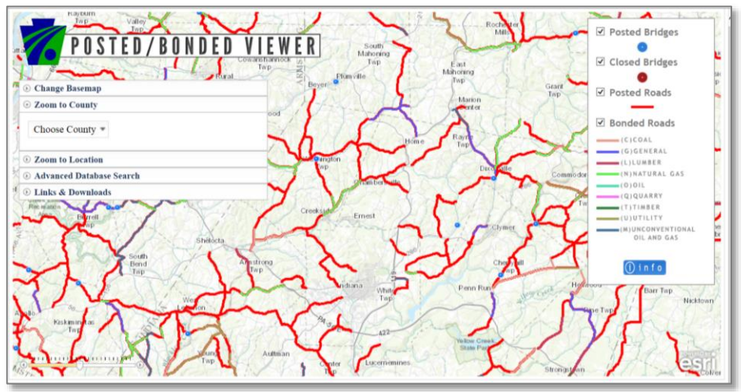
Support highway freight system improvements or activities that will help to manage or mitigate congestion bottlenecks that impact truck travel throughout the region.[9]

Strategy 9d – Advanced Technology Integration

Support programs or opportunities to explore and/or strategically integrate advanced or automated technologies and Intelligent Transportation Systems (ITS) in a manner that will help to enhance freight transportation systems and operations including, for example, truck weigh-in-motion (WIM) stations, truck routing or parking information systems, or autonomous truck technologies.

Strategy 9e – Localized Truck Parking/Staging Studies

Consider future localized or targeted area truck parking/staging studies to focus on truck access and operations that feed key freight activity centers or major truck generating sites within the region.



Source: PennDOT Posted/Bonded Viewer with real-time bridge/roadway data; http://www.dot.state.pa.us/PBV/index.htm

Strategy 9f – Urban Freight Delivery Studies

Supplement current Regional Freight Plan insights with the completion of future urban freight delivery studies to help identify (1) state-of-the-practice urban delivery policies, regulations, issues, etc. across the region, and/or (2) key urban freight delivery issues or improvements for targeted, site-specific locations.

Strategy 9g – Regulatory Influences and Relationships

Monitor potential regulatory influences, relationships, or future assessment needs relative to potential impacts on trucking operations including, for example, oversize/overweight or superload permitting processes, driver hours of service regulations, or potential impacts of regulatory speed changes (e.g., revised 70 MPH limits on the PA Turnpike).

[9] Refer to SW PA Regional Freight Plan – Tech Memo 4 (*Highway Freight Issues* section) for preliminary discussions and related data pertaining to truck bottlenecks.

OBJECTIVE 10: Rail Freight Systems

Support the viability and integrity of the region's Class I, II, and III freight rail networks and related systems that will help to advance SPC's Regional Vision and facilitate freight and goods movement to, from, through, and within Southwestern Pennsylvania.

Strategy 10a – Rail Stakeholder, Planning, and Project Candidate Support

Coordinate with private rail owners/operators and related public agencies to help support regional rail planning efforts and potential rail project candidates that will benefit the broader freight interests of the SPC region, as well as critical local supply chains and related rail service needs.[10]

Strategy 10b – Multimodal and Intermodal Rail Opportunities and Enhancements

Support existing/future efforts and system/infrastructure enhancements related to expansion of the region's rail opportunities for multimodal connectivity (e.g., CSX TRANSFLO movement of bulk commodities from rail to truck or truck to rail) and intermodal container freight opportunities (e.g., double-stack clearance enhancements or the CSX Pittsburgh Intermodal Rail Terminal) including detailed assessments of potential highway or waterway connectivity issues to such opportunities.[11]

Strategy 10c – Shortline Rail Opportunities by County

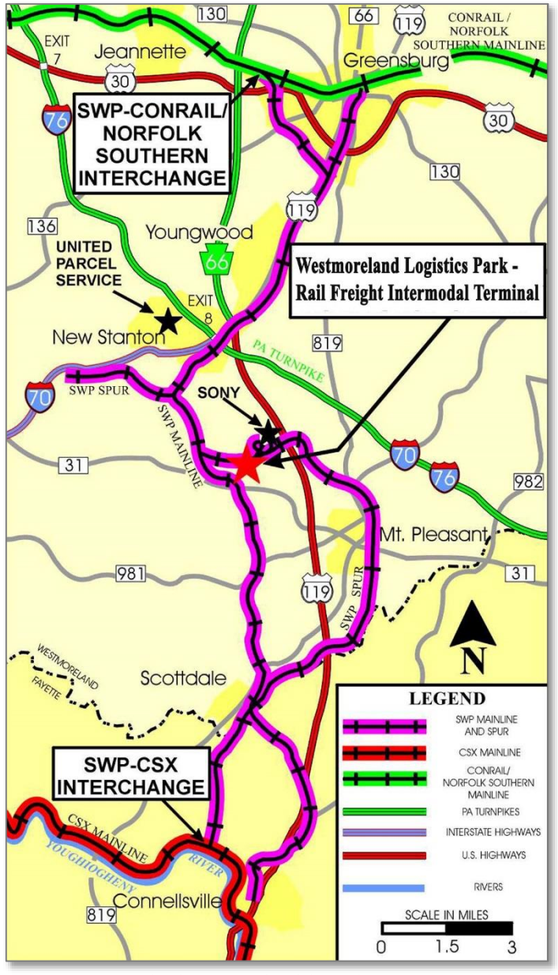
Coordinate with shortline rail owners/operators alongside county economic development staff to continue to explore, identify, and support site-specific shortline rail opportunities, rail spur extensions, service expansions, and/or new rail siding locations to enhance county-specific shortline rail and related economic development opportunities.

Strategy 10d – Regional Rail System Mapping/Database

Compile, refine, and expand rail network data, mapping, and related resources to enhance the availability, accessibility, and accuracy of details or compilations that will help SPC or related planning partners to support rail investment decision-making (e.g., including location-specific rail speed constraints, 286k compliancy needs, double-stack clearance constraints, etc.).[12]

Strategy 10e – Regional At-Grade Highway/Rail Crossing Inventories and Assessments

Compile, refine, and expand at-grade highway/rail crossing data, mapping, inventories, and strategic assessments including, for example, a deeper review of risk-based assessments, consideration of highway/rail traffic signal preemption, or relationships to the SPC Regional Highway Freight Network proposed as part of this plan.



Source: Westmoreland County Industrial Development Corporation, SWP Rail Line, http://www.co.westmoreland.pa.us/DocumentCenter/View/5049

[10] Refer to SW PA Regional Freight Plan – Tech Memo 8, Attachment A, for a compilation of freight rail projects with potential SPC regional impacts.

[11] Refer to SW PA Regional Freight Plan – Tech Memo 5 for preliminary discussion of potential regional/local rail intermodal interests.

[12] Refer to SW PA Regional Freight Plan – Tech Memo 1 (*Freight Transportation Networks* section) and Tech Memo 4 (*Rail Freight Issues* section) for preliminary rail mapping, data, and insights.

OBJECTIVE 11: Inland Waterway Freight Systems

Support the viability and integrity of the region's inland waterway freight/barge transportation systems that will help to advance SPC's Regional Vision and facilitate freight and goods movement to, from, through, and within Southwestern Pennsylvania.

Strategy 11a – Waterway Freight Stakeholder, Planning, and Project Candidate Support

Coordinate with waterway freight system partners (e.g., Port of Pittsburgh, US Army Corp of Engineers), barge operating companies, and river-accessible industry sites to continue to foster a detailed understanding of regional waterway freight issues, planning efforts, and relevant project candidates.

Strategy 11b – Multimodal Waterway Freight Opportunities and Landside Connectivity

Support existing/future efforts and system/infrastructure enhancements related to expansion of the region's waterway freight opportunities and multimodal connections. Include detailed assessments of potential waterway, highway, or rail connectivity issues related to such opportunities. Issues may focus on waterway needs such as barge fleeting areas or equipment service/inspection facilities; material handling equipment for general purpose, special purpose, or industrial terminal usage; or specific landside connectivity needs including truck or rail access to the river terminal, truck staging areas, rail infrastructure or sidings, and short or long term material storage areas.

Strategy 11c – River Accessible Industrial Site Preservation

Support discussions of waterway freight systems and economic development opportunities in concert with broader SPC planning goals and objectives related to fostering brownfields redevelopment and industrial development within key strategic areas to maintain a river accessible industrial base.

Strategy 11d – Lock and Dam Monitoring

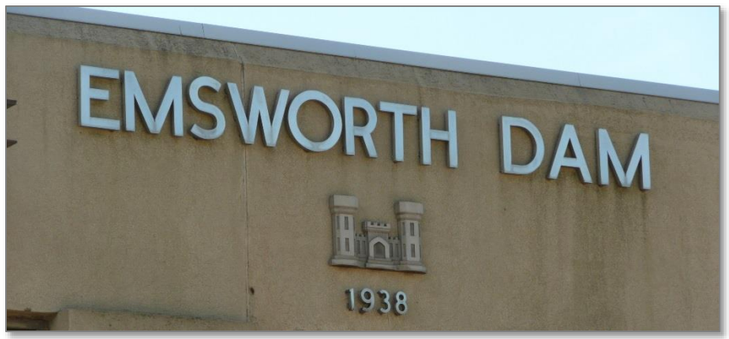
Monitor regional trends and data related to lock and dam usage, delays, or closures, as well as anticipated rehabilitation projects.[13]

Strategy 11e – Waterway Needs Monitoring

Continue targeted outreach, coordination, or additional research to refine an understanding of potential site-specific waterway freight transportation needs or constraints related, for example, to additional barge parking/staging areas, permitting issues, or localized dredging.[13]

Strategy 11f – Container-on-Barge Trends

Monitor regional/national trends or opportunities pertaining to container-on-barge (COB) service via the Ohio River, including specific discussions with the Central Ohio River Business Association (CORBA) relative to COB pilot programs via Cincinnati, OH.[14]

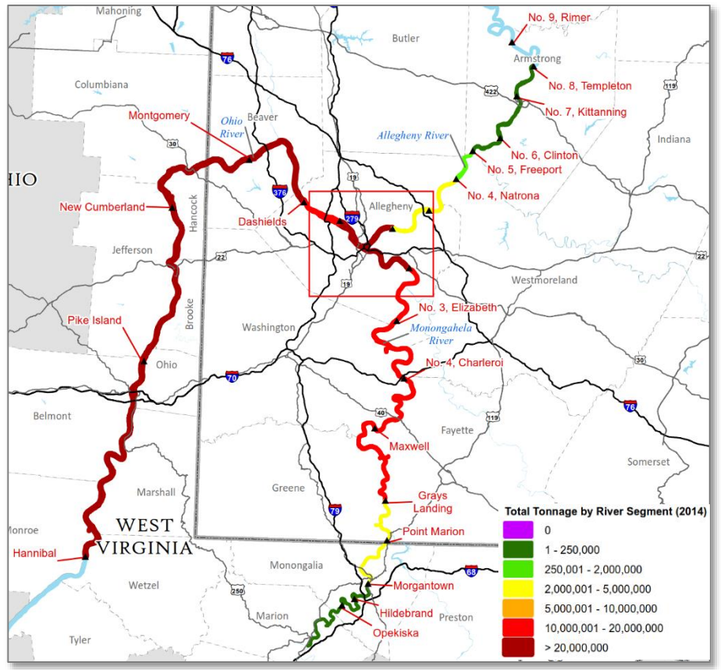


Strategy 11g – Marine Highway Trends

Monitor regional/national trends or opportunities pertaining to waterway freight transportation via USDOT's Marine Highway systems including, specifically, the M-70 (Ohio River) and M-55 (Mississippi River) corridors.[14]

Strategy 11h – Regional Linkages to International Shipping Opportunities

Monitor regional needs, interests, or collaborative opportunities to promote or enhance linkages between the SPC region and international shipping ports including, for example, container shipping opportunities to European markets via Cleveland, OH and the St. Lawrence Seaway; highway or rail connections to major East Coast ports (e.g., via highway or rail connections to New York, Philadelphia, Baltimore), West Coast ports (e.g., via I-80 to/through Omaha, NE), or Gulf Coast ports (e.g., via the Ohio River).[14]



Source: SW PA Regional Freight Plan – Tech Memo 3, Total Tonnage by River Segment

[13] Refer to SW PA Regional Freight Plan – Tech Memo 1 (*Ports and Waterways* section); Tech Memo 3 (*Waterborne Freight Flows* section) and Tech Memo 4 (*Inland Waterway Freight Issues* section) for preliminary insights and related data.

[14] Refer to SW PA Regional Freight Plan – Tech Memo 5 for preliminary discussion of broader COB, Marine Highway, or international shipping opportunities.

OBJECTIVE 12: Air Cargo Systems

Support the viability and integrity of the region's air cargo systems, key airports, and airport business opportunities that will help to advance SPC's Regional Vision and facilitate freight and goods movement to, from, through, and within Southwestern Pennsylvania.

Strategy 12a – National/International Air Cargo Support

Coordinate with Allegheny County Airport Authority to continue to foster a detailed understanding of national and international air cargo trends and related international business or travel market relationships, as well as direct cargo activities and air cargo drayage between Pittsburgh and other national air cargo hubs.[15]

Strategy 12b – Local/Regional Airport Economic Development Relationships

Coordinate with county/municipal officials to continue to foster a detailed understanding of potential regional marketing and/or localized business/industry needs and opportunities related to key regional airport assets.[15]

Strategy 12c – Airport Access Enhancements

Monitor regional project planning, needs, and opportunities to maintain or enhance efficient highway (auto and truck) access to key airport facilities and minimize potential access-driven growth constraints (e.g., Parkway West congestion and accessibility between Pittsburgh International Airport, downtown Pittsburgh, and Oakland).[15]

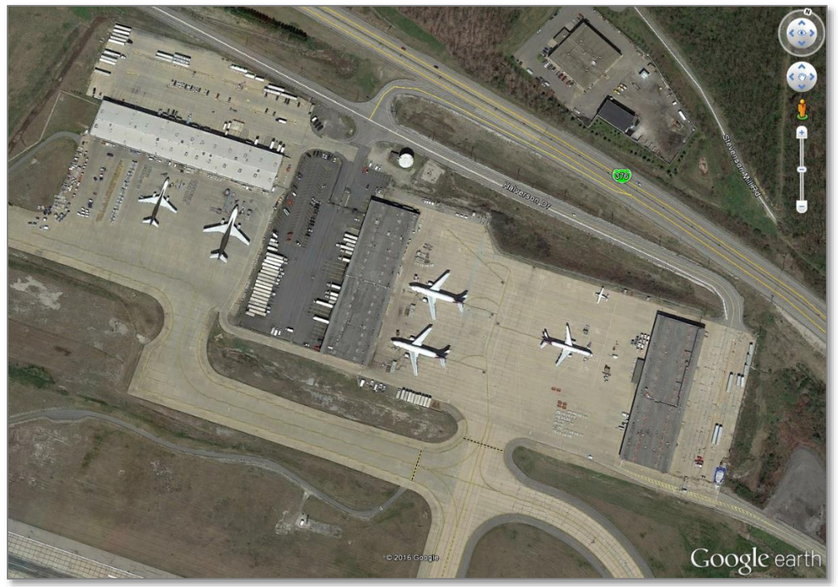
Strategy 12d – Airport Warehousing Enhancements

Monitor regional/county airport needs or opportunities related to additional warehousing interests, local highway-truck access, and related warehouse-driven business and economic development opportunities.[15]

Index #	Location	City	State	Association
	AIR-TRUCK FACILITIES			
1	Youngstown-Warren Regional Airport	Vienna	OH	
2	Emery Forwarding	Moon Township	PA	
3	Emery Customs Brokers	Moon Township	PA	
4	Pittsburgh International Airport	Pittsburgh	PA	

Source: SW PA Regional Freight Plan – Tech Memo 1, Air-Truck Intermodal Facilities

PITTSBURGH INTERNATIONAL AIRPORT



Source: Google Earth, Air Cargo Facilities at Pittsburgh International Airport

[15] Refer to SW PA Regional Freight Plan – Tech Memo 4 (*Air Cargo Deficiencies* section) and Tech Memo 5 (*Air Cargo Opportunities* section) for preliminary discussion of freight-related issues.

OBJECTIVE 13: Modal Integration

Support partnerships, opportunities, and infrastructure improvements that will enhance the region's ability to integrate freight transfer between modes, thereby supporting existing freight markets, expanding new freight market possibilities, and maximizing the multimodal efficiency and utilization of the region's overall freight transportation system.

Strategy 13a – Multimodal Corridor Management

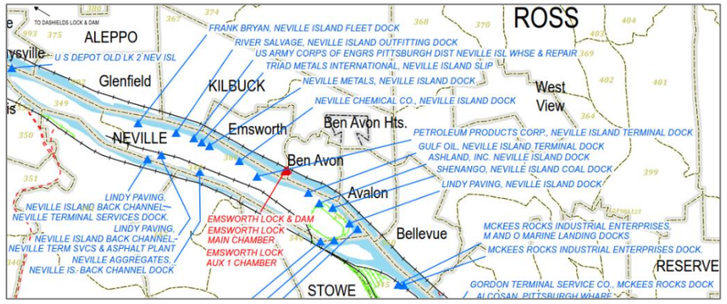
Formally establish, refine, and/or support multimodal corridors in which overlapping or complementary freight transportation capacity can be provided by relatively parallel components of the region's highway, rail, and waterway transportation systems.[16]

Strategy 13b – Multimodal Connectivity Support

Explore opportunities to add new or enhance existing connections and related infrastructure that support multimodal freight transfer and integration.

Strategy 13c – Intermodal Transportation Support

Explore opportunities to support, enhance, and expand intermodal container freight markets and multimodal connections to capitalize on regionally-significant intermodal freight developments, including the CSX Pittsburgh Intermodal Rail Terminal, and support local development through consideration of location-specific connections to the regional highway network.



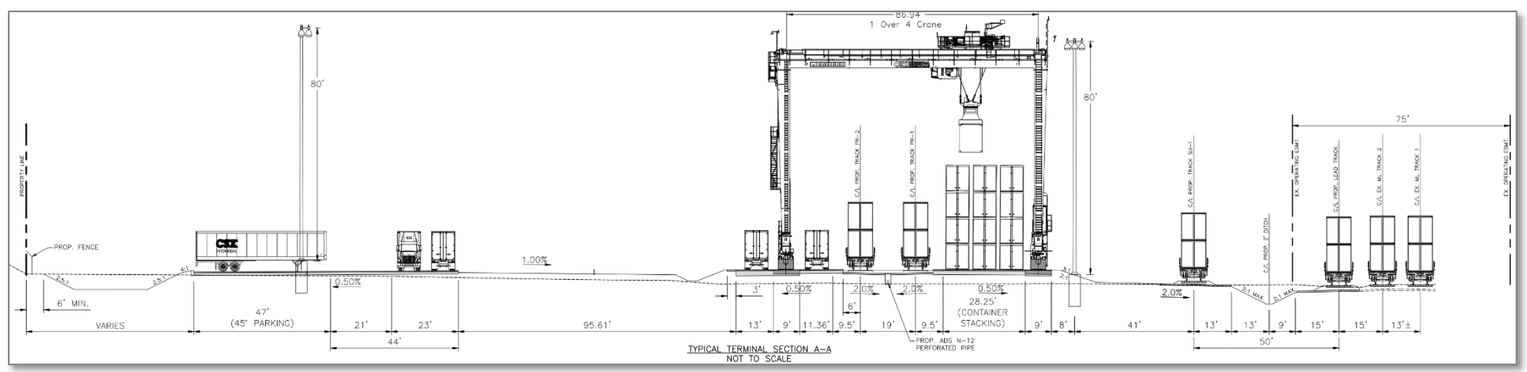
Source: SPC GIS inventories (as based on Port of Pittsburgh and NTAD data)

CSX Pittsburgh Intermodal Rail Terminal

The proposed CSX Pittsburgh Intermodal Rail Terminal in Stowe Township and McKees Rocks near downtown Pittsburgh is a $60M investment to redevelop a brownfield site where the former Pittsburgh & Lake Erie Rail Yard operated. Construction of the facility is anticipated to be completed in mid-2017, will be an important connection in CSX's National Gateway network, and will feature or affect:

- *70-acre facility with 50,000 annual lift capacity*
- *State-of-the-art technology and engineering*
- *Approximately one mile long by one-tenth of a mile wide*
- *Approximately 150 construction jobs and 30 to 40 permanent operating jobs*
- *Approximately 150 indirect jobs, including drayage, once operational*
- *Two processing tracks, one support track, and one lead track*
- *Three rubber-tired gantry cranes capable of stacking containers four-high*
- *Four buildings for terminal administration and operations*

Source: https://www.csx.com/index.cfm/about-us/projects-and-partnerships/pittsburgh-intermodal-rail-terminal/



Source: CSX, Pittsburgh Intermodal Rail Terminal – Overall Site Plan, November 2015; https://www.csx.com/index.cfm/about-us/projects-and-partnerships/pittsburgh-intermodal-rail-terminal/

[16] Refer to later sections of this plan for preliminary discussions and mapping of a regional freight network and potential multimodal corridors.

Regional Freight Network Concepts

An important component of this Regional Freight Plan is a proposed concept for establishing a Southwestern Pennsylvania Regional Highway Freight Network and Regional Multimodal Freight Corridors that would supplement existing or proposed federal or state designated highway freight networks and multimodal freight networks. It is anticipated that SPC and their planning partners will continue to evolve these concepts over time. During that evolution, it will be important to explore ways in which the regional networks may influence or supplement federally-designated components or regional planning processes in a manner that enhances freight planning capabilities and opportunities in and around Southwestern Pennsylvania.

National Highway Freight Network

A Southwestern Pennsylvania Regional Highway Freight Network would build upon federally-designated routes on the National Highway Freight Network (NHFN) established by the FAST Act (see call-out boxes at right). FHWA data for Pennsylvania identify statewide NHFN mileage details as:

- **1,872.57** total NHFN miles (3.4% of the national total)
- **1,412.64** centerline miles of PHFS roadway
- **459.92** centerline miles of non-PHFS interstates
- **282.53** maximum allowable CRFC miles (to be identified by the state, in consultation with MPOs)
- **141.26** maximum allowable CUFC miles (to be identified by MPOs, in consultation with the state)

Based on this mileage data and FHWA criteria, Pennsylvania may obligate FAST Act designated freight funds to projects on the PHFS, CRFC, and CUFC networks, but may not obligate such funds to non-PHFS Interstates.[17]

Relative to future revisions to the federally-designated highway network, the most relevant and/or immediate opportunity for the Southwestern Pennsylvania region is to explore, identify, and promote candidates for the CRFC or CUFC networks (see criteria in call-out boxes at right). Maximum allowable statewide mileage for both networks, however, is limited as noted above; so it is likely that many viable candidates will not qualify for these federal designations.

What is the National Highway Freight Network?

The FAST Act repealed both the Primary Freight Network and National Freight Network that were previously designated under MAP 21, and directed the FHWA Administrator to establish a National Highway Freight Network (NHFN) to strategically direct federal resources and policies toward improved performance of highway portions of the US freight transportation system. The NHFN includes the following subsystems of roadways:

- **Primary Highway Freight System (PHFS):** This is a network of highways identified as the most critical highway portions of the US freight transportation system determined by measurable and objective national data. The network consist of 41,518 centerlines miles, including 37,436 centerline miles of Interstate and 4,082 centerline miles of non-Interstate roads.
- **Other Interstate portions not on the PHFS:** These highways consist of the remaining portion of Interstate roads not included in the PHFS. These routes provide important continuity and access to freight transportation facilities. These portions amount to an estimated 9,511 centerline miles of Interstate, nationwide, and will fluctuate with additions and deletions to the Interstate Highway System.
- **Critical Rural Freight Corridors (CRFCs):** These are public roads not in an urbanized area which provide access and connection to the PHFS and the Interstate with other important ports, public transportation facilities, or other intermodal freight facilities.
- **Critical Urban Freight Corridors (CUFCs):** These are public roads in urbanized areas which provide access and connection to the PHFS and the Interstate with other ports, public transportation facilities, or other intermodal transportation facilities.

What are the FAST Act criteria for Critical Urban Freight Corridors?

In an Urbanized Area with population of 500,000 or more…the representative metropolitan planning organization, in consultation with the state, may designate a public road within the borders of that area of the state as a critical urban freight corridor. In an Urbanized Area with population less than 500,000… the state, in consultation with the representative metropolitan planning organization, may designate a public road within the borders of that area of the state as a critical urban freight corridor. Requirements for CUFC designation cover an eligible corridor that:

- Is in an urbanized area, regardless of population; and
- Connects an intermodal facility to (1) the primary highway freight system, (2) the Interstate System, or (3) an intermodal freight facility;
- Is located within a corridor of a route on the primary highway freight system and provides an alternative highway option important to goods movement;
- Serves a major freight generator, logistic center, or manufacturing and warehouse industrial land; or
- Is important to the movement of freight within the region, as determined by the metropolitan planning organization or the state.

What are the FAST Act criteria for Critical Rural Freight Corridors?

A state may designate a public road within the borders of the state as a critical rural freight corridor if the public road is not in an urbanized area and:

- Is a rural principal arterial roadway and has a minimum of 25 percent of the annual average daily traffic of the road measured in passenger vehicle equivalent units from trucks (Federal Highway Administration vehicle class 8 to 13);
- Provides access to energy exploration, development, installation, or production areas;
- Connects the primary highway freight system, a roadway described in subparagraph (A) or (B), or the Interstate System to facilities that handle more than 50,000 20-foot equivalent units per year; or 500,000 tons per year of bulk commodities;
- Provides access to any of the following: (1) grain elevator, (2) agricultural facility, (3) mining facility, (4) forestry facility, or (5) intermodal facility;
- Connects to an international port of entry;
- Provides access to significant air, rail, water, or other freight facilities in the state; or
- Is, in the determination of the state, vital to improving the efficient movement of freight of importance to the economy of the state.

[17] http://ops.fhwa.dot.gov/freight/infrastructure/nfn/index.htm

Southwestern Pennsylvania Regional Highway Freight Network

On or off the NHFN, highway inventories show several interstate and US routes that span the region and neighboring counties, providing important linkages for both freight and the general traveling public. Though many of these corridors may not be formally designated on a federal or state freight network such as the NHFN, they serve a variety of critical freight needs for the region. Key route examples include the following:

- I-70, I-76, I-79, and I-80 are exceptionally critical corridors given their connections to key points beyond the regional study area, including Cleveland, Columbus, and points west; Charleston, West Virginia, and points south; Washington, D.C., Baltimore, Philadelphia, New York City, and points east; or Erie, New York State, Canada, and points north.
- I-279 and I-376 provide direct linkages to/through downtown Pittsburgh.
- US 19, US 22, US 30, US 40, US 119, and US 422 are important links in the 10-county SPC region relative to the overall number of counties that each route helps to connect.
- I-99, US 62, US 219, US 220, and US 322 are also important links, but with more of a focus on serving an expanded PA region and neighboring areas.
- I-68, US 50, and US 250 are also important links, but with more of a focus on travel across a neighbor state buffer region.
- At a more detailed level, numerous other state routes provide critical interconnections between places and corridors; while many other lower tier state, county, or local roadways provide for direct community access, circulation, and first/last mile connectivity for area freight producers and consumers.

Many of the routes noted above would not typically qualify as roadways of national freight significance or find their way onto a federally-designated network such as the NHFN or its sub-components. Additionally, in certain areas of the region (Armstrong, Fayette, and Indiana Counties), even high-level route coverage on the NHFN is notably limited. The need for the region to self-define its critical highway freight routes becomes even more apparent when discussing topics such as future project, maintenance, or monitoring priorities; competitive funding angles; local project needs; or first/last mile connections.

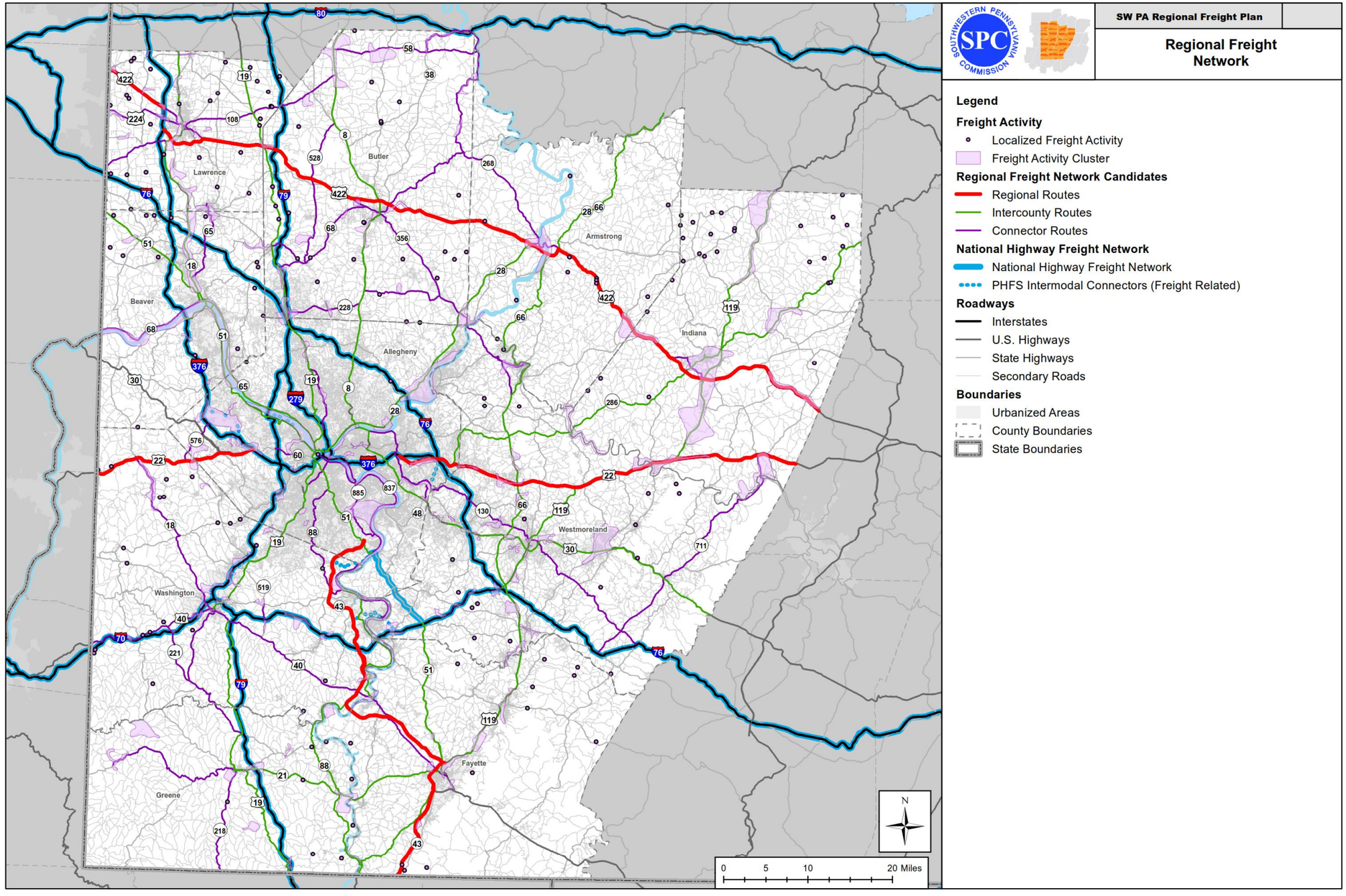
An initial concept for a proposed Southwestern Pennsylvania Regional Highway Freight Network, illustrated in Exhibit 5, was developed to ensure a robust picture of the region's overall highway transportation links and how they serve the specific freight transportation, access, and connectivity needs of Southwestern Pennsylvania.

What is the Southwestern Pennsylvania Regional Highway Freight Network?

The proposed concept for a Southwestern Pennsylvania Regional Highway Freight Network would supplement federal or state-designated highway freight networks to provide a more complete inventory of the key corridors and connections that serve the region's freight movement needs. It is anticipated that SPC and their planning partners will evolve this concept over time. The initial concept details a system of corridors according to the following route tiers:

- **NHFN Routes** – as designated on the federal NHFN.
- **Regional Routes** – not on the NHFN, but typically include major corridors that carry freight through the 10-county region and/or provide important linkages to its surrounding areas.
- **Intercounty Routes** – not on the NHFN, but typically include important corridors that link freight flows between counties inside the SPC region, though not necessarily from a through-route perspective as per the Regional Routes.
- **Connector Routes** – not on the NHFN, but typically include important corridors that link the Regional or Intercounty Routes with other parts of the highway system, and/or that serve freight travel to/from larger freight activity sites or clusters.
- **First/Last Mile Connections** – an additional detailed tier of important roadway connections that would typically link specific freight origin/destination sites with connector routes or other components of the freight transportation system. This level of detail was not addressed in the initial concept for the Regional Highway Freight Network, but may be a topic of interest for future planning studies or inventories.

Exhibit 5: Proposed Southwestern Pennsylvania Regional Highway Freight Network Concept



National Multimodal Freight Network

Beyond highway connectivity, the FAST Act also requires the establishment of a National Multimodal Freight Network (NMFN). FAST Act Section 8001 specifically states that the intention of the NMFN is to:

- Assist states in strategically directing resources toward improved system performance for the efficient movement of freight on the NMFN
- Inform freight transportation planning, and assist in the prioritization of federal investments
- Assess and support federal investments to achieve the national multimodal freight policy goals and national highway freight program goals

What is the National Multimodal Freight Network?

FAST Act Section 8001 references the establishment of a National Multimodal Freight Network (NMFN) that looks beyond highway freight transportation to help assess and support federal investments to achieve national multimodal freight policy goals. The interim NMFN includes the following transportation subsystems:

- National Highway Freight Network, as established under section 167 of title 23
- Freight rail systems of Class I railroads, as designated by the Surface Transportation Board
- Public ports of the United States that have total annual foreign and domestic trade of at least 2,000,000 short tons, as identified by the Waterborne Commerce Statistics Center of the Army Corps of Engineers, using the data from the latest year for which such data is available
- Inland and intracoastal waterways of the United States, as described in section 206 of the Inland Waterways Revenue Act of 1978 (33 U.S.C. 1804)
- Great Lakes, the St. Lawrence Seaway, and coastal and ocean routes along which domestic freight is transported
- The 50 airports located in the United States with the highest annual landed weight, as identified by the Federal Aviation Administration
- Other strategic freight assets, including strategic intermodal facilities and freight rail lines of Class II and Class III railroads, designated by the Under Secretary as critical to interstate commerce

Southwestern Pennsylvania Regional Multimodal Freight Corridors

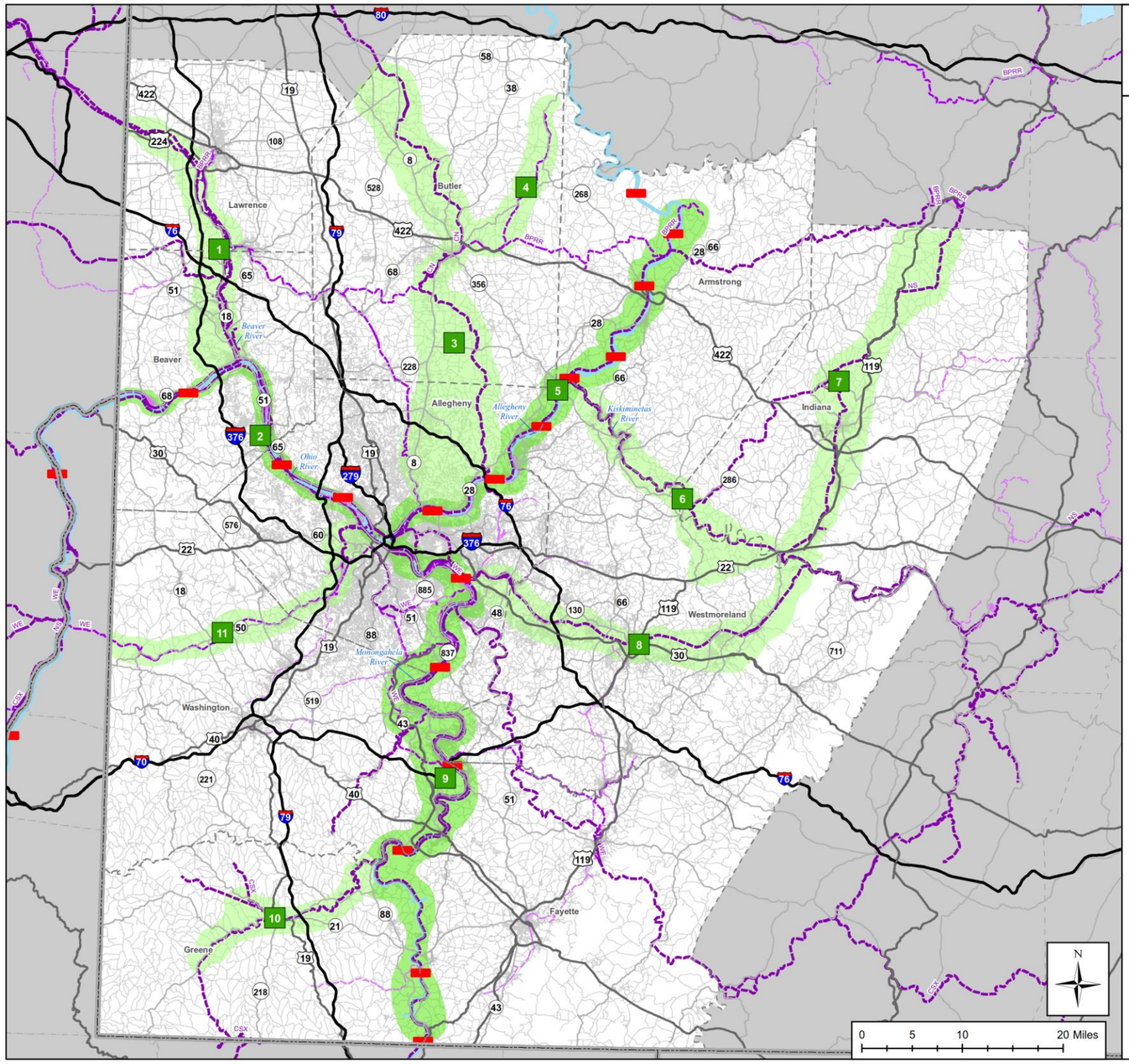
The Southwestern Pennsylvania region consists of a vital network of rail and river corridors that serve the region's freight transportation needs. In many cases, parallel highway, rail, and/or river corridors function together as a system in which each mode meets unique freight needs and connections, but also in a manner that provides a sort of system redundancy and resiliency in terms of their parallel capacities. Investments or improvements in waterway or rail freight service that parallels a highway connection between two areas may, for example, provide an alternate way to enhance and serve those connections more efficiently or effectively than highway investments alone. As such, it is important to also look beyond the proposed Southwestern Pennsylvania Regional Highway Freight Network discussed previously to consider parallel multimodal resources throughout the region. To that end, an initial concept for defining Regional Multimodal Freight Corridors was also developed as part of this plan as illustrated in Exhibit 6.

What factors are considered in designating NMFN components?

Designation of the NMFN aims to achieve the goal of: (a) improving network and intermodal connectivity; and (b) using measurable data as part of the assessment of the significance of freight movement, including the consideration of points of origin, destinations, and linking components of domestic and international supply chains. Factors to be considered in designating NMFN components include:

- Origins and destinations of freight movement within, to, and from the United States;
- Volume, value, tonnage, and the strategic importance of freight;
- Access to border crossings, airports, seaports, and pipelines;
- Economic factors, including balance of trade;
- Access to major areas for manufacturing, agriculture, or natural resources;
- Access to energy exploration, development, installation, and production areas;
- Intermodal links and intersections that promote connectivity;
- Freight choke points and other impediments contributing to significant measurable congestion, delay in freight movement, or inefficient modal connections;
- Impacts on all freight transportation modes and modes that share significant freight infrastructure;
- Facilities and transportation corridors identified by a multi-state coalition, a state, a state freight advisory committee, or a metropolitan planning organization, using national or local data, as having critical freight importance to the region;
- Major distribution centers, inland intermodal facilities, and first- and last-mile facilities; and
- The significance of goods movement, including consideration of global and domestic supply chains.

Exhibit 6: Proposed Southwestern Pennsylvania Regional Multimodal Freight Corridor Concept



SW PA Regional Freight Plan

Multimodal Corridors

Legend

- Lock/Dam

Multimodal Corridors

- Road, Rail
- Road, Rail, Water

Railroads by Class

- Class I
- Class II
- Class III

Roadways

- Interstates
- U.S. Highways
- State Highways
- Secondary Roads
- County Boundaries
- State Boundaries

Multimodal Corridors Index

ID	Multimodal Assets	Road	Rail	Water
1	Road, Rail	PA 18, I-376	NS, CSXT	
2	Road, Rail, Water	PA 65, PA 68, PA 51	NS, CSXT, PVTX	Ohio RIver
3	Road, Rail	PA 8	CN	
4	Road, Rail	PA 68, PA 268	BPRR	
5	Road, Rail, Water	PA 28,	NS, AVR	Allegheny River
6	Road, Rail	PA 66, PA 356, PA 819, PA 981, US 22	NS, MCLR	
7	Road, Rail	US 119	NS	
8	Road, Rail	US 30, PA 217	NS	
9	Road, Rail, Water	PA 43, PA 837, PA 88, PA 885, PA 906	NS, CSXT, URR, WE	Monongahela River
10	Road, Rail	PA 188, PA 21, PA 18	CSX	
11	Road, Rail	PA 50, PA 19, PA 51	WE	

Freight Funding Resources

Funding opportunities for freight-related improvement projects include traditional or formula-based project funding programs, as well as various discretionary grant or financing programs.

The FAST Act continued or modified many of the traditional or formula-based programs authorized under MAP-21, including those highlighted in Exhibit 7. These opportunities include federal and state allocations under general highway, bridge, maintenance, congestion, and rail crossing programs that generally provide the resources to fund projects on the four-year Transportation Improvement Program (TIP) and Twelve Year Plan (TYP). Programmed efforts using these funds typically benefit all general users of the highway system and are not specifically freight-focused.

For the first time, the FAST Act establishes both formula and discretionary grant programs to provide a dedicated source of federal funding for freight projects. These programs include National Freight Program (NFP) funding, which is currently being held in a Pennsylvania statewide line item pending FHWA guidance; and an annual competitive FASTLANE Grant Program, which was previously authorized at $4.5 billion through 2020, and which saw its first round of applications submitted as of April 2016.

Additional funding options to specifically support freight projects include a variety of grant or financing programs, including those summarized in Exhibit 8. These options include, for example, USDOT's competitive FASTLANE and TIGER Grant Programs. In light of the changing and competitive environment surrounding freight-related funding opportunities, continuing to proactively explore, prioritize, and maintain a list of freight project candidates should be an ongoing point of focus for the region.

Exhibit 7: Traditional Project Funding Programs

Code	Funding Program/Category	Brief Notes/Updates
-	Transportation Infrastructure Investment	Formerly Economic Development
-	Statewide Line Items	Reserve average $36M/year in federal/state highway/bridge funds
-	Interstate Management Program	Continues to be managed on statewide basis
SPIKE	Discretionary Funding	20% Surface Transportation Block Grant Program reserved
NHPP	National Highway Performance Program Formula	20% NHPP funds in in statewide reserve
STP, STN, STR	Surface Transportation Block Grant Program Formula	Remaining 80% distributed among urban & rural areas
-	Bridge Funding Formula (State)	Funding based on square feet of deck area of deficient bridges
-	Highway Capital Funding (State)	Act 89 mandated 15% available funds for highway capital projects
BOF	Off System Bridges	Based on square feet of deck area of deficient bridges
STU	Surface Transportation Block Grant Program-Urban	For populations > 200k based on current federal formula
TAP, TAU	Surface Transportation Block Grant Program Set-Aside	(former Transportation Alternatives Program); Similar to STP; 50% sub-allocated by population, 50% to any area
CMAQ	Congestion Mitigation and Air Quality	Based on federal factors to account for air quality classification
HSIP	Highway Safety Improvement Program	$35M safety initiatives, $12M divided evenly among urban & rural, remaining based on formula
NFP	**National Freight Program**	**Funding held in statewide line item pending FHWA guidance**
RRX	Highway-Rail Grade Crossing Safety	Continue to be managed on statewide basis
SXF	Special Federal Funding	Earmarked for Specific Projects in ISTEA, TEA-21, SAFETEA-LU
APD / APL	Appalachia Development Highway	Not continued by MAP-21 or FAST Act
-	All Discretionary Federal Funding	Most programs not continued by MAP-21 or FAST Act
-	Appropriation 179	State revenue established under Act 26
-	Local and Private Funding	Considered additional funding

Source: Pennsylvania's 2017 Transportation Program Financial Guidance

FASTLANE Grants

USDOT Requests Applications for $800 Million New FASTLANE Grant Program

WASHINGTON – The U.S. Department of Transportation (USDOT) announced that it is now soliciting applications for the Fostering Advancements in Shipping and Transportation for the Long-term Achievement of National Efficiencies (FASTLANE) grant program. The FASTLANE program is a new program in the Fixing America's Surface Transportation (FAST) Act to fund critical freight and highway projects across the country. The FAST Act authorizes $800 million in funding for the FASTLANE program for fiscal year 2016, with 25 percent reserved for rural projects, and 10 percent for smaller projects.

Source: USDOT, https://www.transportation.gov/FASTLANEgrants

United States Department of Transportation

Communities Across America Seek $9.3 Billion in Transportation Funding

Department of Transportation sent this bulletin at 06/07/2016 11:19 AM EDT
DOT 64-16
Monday, June 6, 2016
Contact: Office of Public Affairs
Tel.: (202) 366-4570

Communities Across America Seek $9.3 Billion in Transportation Funding

DOT Receives 585 Applications for 2016 TIGER Grant Program

WASHINGTON – U.S. Transportation Secretary Anthony Foxx today announced that the Transportation Investment Generating Economic Recovery (TIGER) grant program has received 585 applications from across the country totaling $9.3 billion in requested funding – over 18 times more than the $500 million that will be awarded. Now in its eighth year, the TIGER program has continued to attract overwhelming demand from communities of all sizes, with 337 applications coming from urban areas and 248 from rural communities. The high level of interest underscores the continued need for transportation investment nationwide.

Source: USDOT, TIGER Grant Update Notification, June 2016

Exhibit 8: Freight Funding Programs/Sources

Funding Program/Source	Source/Organization	Eligible Organizations	Program/Source Summary
The Railroad Rehabilitation and Improvement Financing Program	Federal Railroad Administration (FRA)	Railroads, state & local governments, government sponsored authorities & corporation, joint ventures that include at least one railroad, limited option freight shippers who intend to construct a new rail connection	• Provides federal loans and loan guarantees to finance the development of railroad infrastructure • 80% of loans have been executed with Class II and Class III railroads • Direct loans for up to 100% of project cost and repayment periods of up to 35 years • Substantive & procedural changes to the funding program under FAST Act
Airport Improvement Program (AIP)	Federal Aviation Administration (FAA)	Airports included in the National Plan of Integrated Airport Systems (NPIAS)	• Provides grants for the planning and development of public-use airports that are included in the National Plan of Integrated Airport Systems (NPIAS) • Eligible projects include improvements related to enhancing airport safety, capacity, security, and environmental concerns
EDA Investment Programs	Department of Commerce, (DOC) Economic Development Administration (EDA)	Distressed Communities, state and local governments and organizations, companies, universities, and nonprofits	• A variety of programs to develop, diversify, and sustain economic growth, aimed particularly in economically disadvantaged areas
Pennsylvania Infrastructure Bank	PennDOT	Municipalities, councils of governments, businesses, economic development organizations, public transportation agencies, and ports and rail freight entities	• Revolving loan fund administered by PennDOT to provide flexible financing opportunities for eligible transportation improvement projects • Among the objectives of the PIB are spurring economic development and facilitating non-traditional projects, including intermodal facilities
Federal Rail Safety Improvement Act of 2008	Federal Railroad Administration (FRA)	Passenger and freight railroads, railroad suppliers, and state and local governments	• Authorizes funding through several grants including those for rail safety technology, railroad safety infrastructure improvement, rail grade crossing safety, and education programs
Rail Line Relocation and Improvement Capital Grant Program	Federal Railroad Administration (FRA)	States, counties, and municipalities	• Funds projects that improve the route or structure of a portion of rail line, or mitigate the adverse effects of rail traffic on safety, motor vehicle traffic flow, community quality of life, or economic development
Act 13 Highway Bridge Improvement Fund, County Critical Bridge Legacy Funding	Motor License Fund	Counties	• Establishes a Marcellus Legacy Fund that allocates a portion of the Marcellus Shale Impact Fee to the Highway Bridge Improvement Restricted Account in the Motor License Fund
Act 13 Rail Infrastructure Set Aside	Motor License Fund	PennDOT Bureau of Rail Freight	• Funding to be used at the discretion of PennDOT's Bureau of Rail Freight to augment the Rail Freight Assistance Program and Rail Transportation Assistance Program
Port of Pittsburgh Bonds, Financing, Revolving Loan Fund	Port of Pittsburgh	Private companies	• Issues private-activity lease-backed bonds to finance economic development projects in the port district • Also administers a revolving loan fund to assist water-related manufacturing and transportation industry growth in the port district

Source: PA On Track; Pennsylvania CFMP

Exhibit 8: Freight Funding Programs/Sources (continued)

Funding Program/Source	Source/Organization	Eligible Organizations	Program/Source Summary
Fostering Advancements in Shipping and Transportation for the Long-term Achievement of National Efficiencies Grant (FASTLANE)	US Department of Transportation (USDOT)	State(s), MPOs with 200k population, local governments, political divisions, public authorities with transportation function, federal land management agencies, tribal government/consortiums, multi-state or multijurisdictional public entities	• FAST Act established the Nationally Significant Freight and Highway Projects (NSFHP) program, also known as FASTLANE grants • $4.5 billion in project funding available over next 5 fiscal years (2016-2020) under the FAST Act • Provides dedicated, discretionary funding for projects with national or regional significance that address critical freight issues for highways and bridges
Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grants Program	US Department of Transportation (USDOT)	State and local governments, transit agencies, port authorities, MPOs, and multi-state or multi-jurisdictional groups	• Appropriated $500 million in 2016 to be awarded by the USDOT for national infrastructure investments • Nearly $4.6 billion has been allocated to 381 projects • Applicants must detail the benefits their project would deliver in terms of safety, economic competitiveness, state of good repair, livability, and environmental sustainability
Appalachian Regional Commission (ARC) Grant	Appalachian Regional Commission (ARC)	State, regional, local and other governmental agencies, and nonprofit organizations	• ARC's Access Road program is designed to better link businesses, communities, and residents to the Appalachian Development Highway System and to other key parts of the region's transportation network • States may now select a federal share of up to 100%, a revision under the FAST Act
Transportation Infrastructure Finance and Innovation Act (TIFIA)	US Department of Transportation (USDOT)	State departments of transportation, transit operators, special authorities, local governments, and private entities	• Provides credit assistance in the form of direct loans, loan guarantees, and standby lines of credit to transportation projects of national or regional significance • $1.435 billion in funding available over the next 5 fiscal years (2016-2020) under the FAST Act • Substantive & procedural changes to the funding program under FAST Act
Rail Freight Assistance Program and Rail Transportation Assistance Program	General Fund/Capital Budget	Railroad owners, railroad operators or lessees, railroad users or shippers, municipalities and other governmental entities	• Funding to preserve essential rail freight service where economically feasible, and to preserve or stimulate economic development through the generation of new or expanded rail freight service
Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Program	US Department of Transportation (USDOT)	State or local governments, transit agencies, MPOs, and other political subdivisions of a state or local government	• Grants to develop model deployment sites for large scale installation and operation of advanced transportation technologies • Intended to improve the return-on-investment of safety, efficiency, system performance and infrastructure improvements, including the enhanced use of existing transportation capacity
Earmark Repurpose Funds	US Department of Transportation (USDOT)	States and territories	• Section 125 of the Department of Transportation Appropriations Act, 2016 provides the authority for a state or territory to repurpose any earmark that was designated on or before September 30, 2005, and is less than 10 percent obligated or final vouchered and closed • Repurposed funds may be obligated on a new or existing project in the state within 50 miles of the earmark designation. Project must be an eligible project under the Surface Transportation Block Grant Program (STBG)

Source: PA On Track; Pennsylvania CFMP

Exhibit 8: Freight Funding Programs/Sources (continued)

Funding Program/Source	Source/Organization	Eligible Organizations	Program/Source Summary
Multimodal Transportation Fund	PennDOT	Municipalities, councils of governments, businesses, economic development organizations, public transportation agencies, and ports and rail freight entities	• Provides grants to encourage economic development and ensure safe and reliable transportation
Airport Improvement Program	Federal Aviation Administration (FAA)	Commercial Service Airports	• Federal funding administered directly by the FAA to federally-eligible airports, mostly commercial service airport sponsors and any general aviation airport they may own
State Block Grant Program	PennDOT Bureau of Aviation	General aviation airports, airports designed as reliever airports, and non-primary commercial airline airports	• Federal funding administered by the state to federally-eligible general aviation airport sponsors
Aviation Development Program	PennDOT Bureau of Aviation	Public Use Airports	• State funding that is generated from taxes on jet fuel and available for eligible projects at any public-use airport
Partnerships for Opportunity and Workforce and Economic Revitalization (POWER) Initiative Grant Program	Appalachian Regional Commission (ARC); US Economic Development Administration (EDA)	Local Development Districts; Indian Tribe or a consortium of Indian Tribes; state, county, city, or other political subdivision of a state, including a special purpose unit of a state or local government engaged in economic or infrastructure development activities, or a consortium of political subdivisions; or institution of higher education or a consortium of institutions of higher education; public or private non-profit organization or association	• Multi-agency initiative that targets federal resources to help communities and regions that have been affected by job losses in coal mining, coal power plant operations, and coal-related supply chain industries due to the changing economics of America's energy production • Projects must be located within and targeted to “coal-impacted communities” or regions

Source: PA On Track; Pennsylvania CFMP; http://www.arc.gov/funding/POWER.asp

Freight Performance Management Insights

Fully establishing and developing freight-related performance measures and targets specifically for usage by SPC within the Southwestern Pennsylvania regional freight planning area is an ongoing effort that must continue beyond the completion of this plan. Freight performance measurement, in general, is an evolving issue across jurisdictional levels – one that will require subsequent coordination between SPC and PennDOT relative to consistency between regional and statewide freight planning efforts, as well as compliance with recent federal rulemakings on the subject.

Separate from state or federal coordination, and considering the relative infancy of many of the data sets, inventories, and findings that were newly identified or compiled with the development of this plan, detailed follow-up coordination internally at SPC is also warranted. Conducting a targeted assessment of regional freight performance measurement and management processes independent of this Regional Freight Plan can allow SPC to more thoroughly explore regionally-relevant process needs; internal capabilities; cross-program or cross-jurisdictional opportunities; potential data constraints, costs, or challenges; future statewide freight planning revisions; or similar factors that will ultimately influence the efficiency and effectiveness of the final performance measurement/monitoring process.

Information presented here aims to compile and interpret basic freight performance measurement insights with reference to the latest federal requirements, existing Pennsylvania state processes, and other state-of-the-practice knowledge.

National Freight Performance Measures

FHWA has presented detailed guidance on National Performance Management Measures through a series of Notice of Proposed Rulemaking (NPRM) summaries that address the relevant goals and objectives of the national policy requirements in the FAST Act. To date, three NPRM summaries have been released, covering performance measures related to safety, infrastructure, and system performance (Exhibit 9).

The third and latest NPRM specifically addresses freight-related performance measures, but these are only applicable to the Interstate system. More, specifically, two measures are included to assess truck travel time reliability on the Interstate system, and to assess the mileage of uncongested Interstate based on average truck speed (see call-out box above). Other measures from the NPRM summaries (per Exhibit 9) relate more to general highway travel and overlap other non-freight planning programs, but these still be of interest in terms of tracking changes that would also affect freight (e.g., background traffic congestion and pavement or bridge conditions).

Aside from the actual measures, the NPRM summaries include a number of other requirements or implications that could impact SPC's approach to freight performance measurement – particularly as it relates to coordination and consistency with statewide processes. It is anticipated that SPC's performance measures and targets must at least match corresponding PennDOT details, as there is a strong emphasis on coordination to:

- Determine performance measures collaboratively
- Utilize equivalent data sets, noting that the National Performance Management Research Data Set (NPMRDS) is the preferred metric source, and alternate sources must be pre-approved by FHWA
- Utilize equivalent and contiguous reporting segments
- Analyze equivalent desired peak period travel times
- Include collaborative consideration of interim performance targets, noting that state DOTs are required to create two and four-year targets within one year of the final ruling effective date (TBD), while MPOs will be required to set and adjust four-year targets (or commit to state targets) within 180 days of when state targets are finalized

Once performance measures are set, states and MPOs will be held accountable to meet performance targets as established in the Initial Progress Report. It should also be noted other measures and targets (beyond the national requirements) may be selected; however, as more measures are established, more target requirements must be met. Since the FAST Act has established significant progress determination requirements for NHPP targets and freight movement related targets, accountability levels will be monitored closely for both state DOTs and MPOs.

NPRM Performance Measure Details for Freight Movement on the Interstate System

[§490.607(a)] Percent of the Interstate System Mileage providing for Reliable Truck Travel Times

- *Metric*: Truck Travel Time Reliability
- *Data*: NPMRDS or equivalent; 5-minute data collection cycle
- *Reporting*: Annual metric reporting to HPMS
- *Calculation*: Percentage of the Interstate direction-miles of reporting segments with "Truck Travel Time Reliability < 1.50"

[§490.607(b)] Percent of the Interstate System Mileage Uncongested

- *Metric*: Average Truck Speed
- *Data*: NPMRDS or equivalent; 5-minute data collection cycle
- *Reporting*: Annual metric reporting to HPMS
- *Calculation*: Percentage of the Interstate direction-miles of reporting segments with "Average Truck Speed ≥ 50 mph"

State Freight Performance Measures

Current statewide performance management processes from *PA On Track* and the Pennsylvania CFMP focus on the four statewide policy goals of system preservation, safety, personal and freight mobility, and stewardship; including specific measures as listed in Exhibit 10. Freight-related measures include annual hours of truck delay, and percent/number of freight bottlenecks eliminated. As with the NPRM summary lists, other statewide measures relate more to general highway travel, but may still be of interest relative to changes that would also impact freight (e.g., pavement and bridge conditions).

Compared to the latest NPRM guidance, it is anticipated that PennDOT will need to refine their current statewide freight measures to fully meet the provisions of the FAST Act. As noted in the previous discussion on national performance measures, there is also a strong emphasis and expectation that a high level of collaboration and consistency between the state DOTs and MPOs will be integrated throughout the development of their respective performance management processes, ideally in a manner that allows details to be aggregated up from the MPO, to the state, to the national level.

MPO Freight Performance Measures

Current MPO performance management processes from *Mapping the Future*, SPC's LRTP, focus on four themes of safety and reliability, maintenance, economy, and community; including specific measures as listed in Exhibit 11. Freight-related measures include total export value, and freight tonnage or value to/from the region. As with the state and national lists, other MPO measures relate more to general traffic, but may still reflect conditions influencing freight (e.g., peak hour delay or weight posted bridges). As part of current processes, SPC maintains a performance monitoring sheet that summarizes performance measures at-a-glance relative to its trend (i.e., trending up, down, or flat; and positive or negative; in relation to stated policy goals, strategies, and the Regional Vision.

Safety & Reliability	Trend	Maintenance	Trend	Community	Trend
Annual Serious Injury Rate	↓	Pavement in Excellent or Good Condition	↓	Population	↔
Annual Fatality Rate	↓	Square Feet of Structurally Deficient Bridge Deck	↓	Minority Population	↑
Roadway Related Pedestrian Major Injuries	↔	Weight Posted Bridges	↔	Foreign-Born Population	↑
Roadway Related Pedestrian Fatalities	↓	Average Age of Regional Bus Fleet	↑	Age	Table*
Roadway Related Bike Major Injuries	↓	**Economy**	**Trend**	Occupied & Vacant Housing Units	Chart*
Roadway Related Bike Major Fatalities	↑	Number of Jobs	↔	Educational Attainment High School Graduate	↑
Drove Alone to Work	↔	Net Job Creation	↑	Educational Attainment Bachelor's Degree	↑
Carpool to Work	↔	Annual Unemployment Rate	Chart. Indexed against State & National	Dropout Rate	↓
Public Transit to Work	↔	Total Exports (value)	↑	Proximity to Parks and Trails	↔
Bike to Work	↑	Tourism Spending	↑	Proximity to Transit	↔
Work from Home	↑	Tourism Industry Employment Impacts	↑	Air Quality Good Days	↑
Per Capita DVMT	↓	Percent Change in Regional GDP	Chart. Indexed against State & National*	Air Quality Unhealthy Days	↓
Transit Passenger Trips	↓	Cost of Living Index	Table*	Population Density	Map*
Peak Hour Delay	Chart. Regional Data Being Collected*	Freight Tonnage to the Region	↑	Housing Unit Density	Map*
Travel Time Reliability	Chart. Regional Data Being Collected*	Freight Dollar Value to the Region	↑	Miles of Impaired Stream	↑
		Freight Tonnage from the Region	↑	Land in Active Farms	↓
		Freight Dollar Value from the Region	↑	Number of Farms	↓

Source: SPC Performance Measures at-a-glance; Mapping the Future; SPC

Exhibit 9: National Performance Management Measures

NPRM Rulemaking		23 CFR Part 490 Section	Proposed Performance Measure	Measure Applicability
First NPRM	Safety PM Final Rule	490.207(a)(1)	Number of fatalities	All public roads
		490.207(a)(2)	Rate of fatalities	All public roads
		490.207(a)(3)	Number of serious injuries	All public roads
		490.207(a)(4)	Rate of serious injuries	All public roads
		490.207(a)(5)	Number of non-motorized fatalities and non-motorized serious injuries	All public roads
Second NPRM	Infrastructure PM NPRM	490.307(a)	Percentage of pavements of the Interstate System in Good condition	The Interstate System
		490.307(a)(2)	Percentage of pavements of the Interstate System in in Poor condition	The Interstate System
		490.307(a)(3)	Percentage of pavements of the non-Interstate NHS in Good condition	The non-Interstate NHS
		490.307(a)(4)	Percentage of pavements of the non-Interstate NHS in Poor condition	The non-Interstate NHS
		490.407(c)(1)	Percentage of NHS bridges classified as in Good condition	NHS
		490.407(c)(2)	Percentage of NHS bridges classified as in Poor condition	NHS
Third NPRM	System Performance PM NPRM	490.507(a)(1)	Percent of the Interstate System providing for Reliable Travel	The Interstate System
		490.507(a)(2)	Percent of the non-Interstate NHS providing for Reliable Travel	The non-Interstate NHS
		490.507(b)(1)	Percent of the Interstate System where peak hour travel times meet expectations	The Interstate System in urbanized areas with a population over 1 million
		490.507(b)(2)	Percent of the non-Interstate NHS where peak hour travel times meet expectations	The non-Interstate NHS in urbanized areas with a population over 1 million
		490.607(a)	***Percent of the Interstate System Mileage providing for Reliable Truck Travel Time***	***The Interstate System***
		490.607(b)	***Percent of the Interstate System Mileage Uncongested***	***The Interstate System***
	System Performance PM NPRM: CMAQ – traffic congestion	490.707	Annual Hours of Excessive Delay Per Capita	The NHS in urbanized areas with a population over 1 million in nonattainment or maintenance for any of the criteria pollutants under the CMAQ program
	System Performance PM NPRM: CMAQ – On-road mobile source emissions	490.807	Total tons of emissions reduced from CMAQ projects for applicable criteria pollutants and precursors	Projects financed with CMAQ funds in all nonattainment and maintenance areas for one or more of the criteria pollutants under the CMAQ program

Source: National Performance Management Measures NPRM

Exhibit 10: State Performance Management Measures

State Policy Goal Area	Performance Measures
System Preservation	– Percent of pavements in excellent, good, fair, and poor conditions (International Roughness Index (IRI)) – Pavement structure index (Overall Pavement Index (OPI)) – Percent of structurally deficient bridges (by deck area) – Number of "weak bridges" and load-restricted bridges
Safety	– Number of fatalities and serious injuries – Rates of crashes with fatalities and serious injuries per VMT – Number of fatalities and serious injuries in work zones – Number of rail crossing fatalities, serious injuries, and incidents
Personal and Freight Mobility	– ***Annual hours of truck/auto delays (cost of delays)*** – ***Percent/number of freight bottlenecks eliminated***
Stewardship	– Annual savings through PennDOT modernization – Timely delivery of approved local projects – Timely delivery of highway occupancy permits (issues for occupancy of highway right-of-way, opening the surface of highway, placing a facility or structure, or opening access to the highway) – Number of municipal officials trained through the Local Technical Assistance Program (LTAP) on the coordination of land use and transportation planning

Source: PA On Track; Pennsylvania CFMP

Exhibit 11: MPO Performance Management Measures

MPO Planning Theme	Performance Measures
Safety & Reliability	– Annual serious injury rate – Annual fatality rate – Roadway related pedestrian major injuries and fatalities – Roadway related bike major injuries and fatalities – Drove alone to work; Carpool to work; Public transit to work; Bike to work; Work from home – Per capita DVMT – Transit passenger trips – Peak hour delay – Travel time reliability
Maintenance	– Pavement in excellent or good condition – Square feet of structurally deficient bridge deck – Weight posted bridges – Average age of regional bus fleet
Economy	– Number of jobs – Net job creation – Annual unemployment rate – ***Total exports (value)*** – Tourism spending – Tourism industry employment impacts – Percent change in regional GDP – Cost of living index – ***Freight tonnage to/from the region*** – ***Freight dollar value to/from the region***
Community	– Population; Minority population; Foreign-born population – Age – Occupied & vacant housing units – Educational attainment bachelor's degree – Dropout rate – Proximity to parks and trails – Proximity to transit – Air quality good days; Air quality unhealthy days – Population density – Housing unit density – Miles of impaired stream – Land in active farms – Number of farms

Source: Mapping the Future, SPC

Other Freight Performance Measures

As noted previously, states and MPOs can establish other measures and targets as appropriate and applicable to their freight related needs. According to the *National Cooperative Freight Research Program (NCFRP) Report 10: Performance Measures for Freight Transportation*, hundreds of potential freight performance measures are identified in research literature, but in practice only a handful of them are used by state DOTs. Pioneer performance measurement states such as Washington, Missouri, and Minnesota use between 5 and 10 measures and most states have different measures using a broad range of metrics. Typical truck measures include travel time, delay, and miles of congested roadway; though in research, most of the measures serve as broad trend indicators for overall transportation system performance. Examples of other freight performance measures by mode are summarized in Exhibit 12.

As indicated previously, it is anticipated that final development and refinement of freight-related performance measures and targets for use within SPC's processes will be an ongoing and targeted effort related to this plan. The information provided here – including national, state, MPO, and other performance measure options or insights – may serve as a reference for such follow-up efforts.

Exhibit 12: Other Performance Management Options

Mode/Category	Performance Measures
Highway	– Freight volumes (trucks per day or percentage of trucks in daily counts) – Percentage of miles of highway that meet "good" and "poor" ride quality targets – Percentage of interregional connectors/bottleneck removal projects with ROW needs protection – Clearance time for incidents, crashes, or hazardous material incidents – Snow and ice removal clearance time – Percentage of major generators with adequate access to interregional connectors and major highways – Peak period travel time reliability – Ratio of peak to off-peak travel time – Miles of peak period congestion per day – Crash rates and fatalities involving large trucks – Percentage of trucks using advanced technology at weigh stations
Rail	– Percentage of major generators with appropriate rail access – Total crashes at at-grade rail crossings (three-year average) – Number of truck-related fatalities at at-grade rail crossings (three-year average) – Percentage of rail track-miles with track speeds greater than 25 mph – Percentage of rail track-miles with 286,000-pound railcar capacity rating – Rail fuel use per ton-mile – Rail freight tonnage – Average rail revenue per ton-mile
Waterways	– Container shipments through state ports – Conditions of locks and dams
Airports	– General aviation fatal accident rate – Total runway incursions – Airport average daily capacity
Freight Markets	– Approximate travel times to major external markets – Percentage of satisfied motor carriers – Customer satisfaction with timeliness of motor carrier services

Source: NCFRP Report 10: Performance Measures for Freight Transportation

Freight-Relevant Project/Study Candidates

In addition to the freight planning objectives, strategies, and other planning resources addressed throughout this Regional Freight Plan, overall plan development efforts also considered an initial review and compilation of candidate projects and follow-up freight studies that may be beneficial for freight. Candidates were identified based on their potential to influence freight movements or relevant economic development opportunities on a broader level within the 10-county SPC region (see callout box at right).

Freight-relevant project candidates (Exhibit 14 through Exhibit 19) were extracted from existing planning references such as state or regional TIP listings; 12-year or long-range plan projects and aspirations; statewide rail or freight plan recommendations; and similar sources. They are listed in this plan as samples for reference only and do not imply specific project funding commitments or priorities.

Follow-up freight study candidates (Exhibit 20) were also compiled based on screenings of freight focus areas identified for each county (as detailed in Section 4 of this plan). Focus areas in the County Profiles were generally determined based on a quantitative/qualitative review of county-specific freight activity areas using freight data and discussions compiled throughout the development of this plan. Focus area screening considerations included evidence of (1) current freight activity, (2) future freight activity, (3) infrastructure needs, (4) operational issues, (5) access or connectivity issues, and (6) relevance to the proposed Southwestern Pennsylvania Regional Highway Freight Network. All project and study candidates compiled on the following pages are also listed by county on the detailed County Profile sets located in Section 4 of this plan.

Moving beyond this Regional Freight Plan, a logical next step toward investigating or refining these interim lists of project or study candidates would include additional coordination with their related PennDOT District, county planning or maintenance officials, local municipalities, and key freight stakeholders (e.g., business or industry partners, truck or rail companies, etc.). For potential study efforts, this coordination should aim to validate or further define area-specific issues or opportunities – efforts that may benefit from collaborative field views between SPC and local area contacts. Where detailed studies may be justified, discussions should establish a scope and study area for targeted follow-up assessments. From such efforts, detailed recommendations and/or additional project candidates may be developed or refined for inclusion in future updates of the Regional Freight Plan.

Follow-up discussions should also consider local, county, or regional highway project types (Exhibit 13) or multimodal efforts relative to future funding or programming opportunities. The FAST Act, for example, specifies that projects that contribute to the efficient movement of freight on the National Highway Freight Network, and that are identified in a freight investment plan that is included in a freight plan of the state, may be eligible for funds apportioned to the state under the National Highway Freight Program.

Interim Freight-Relevant Project Screening

As an interim step (pending future freight project screening or prioritization refinements by SPC), sample project candidates included in this Regional Freight Plan were generally screened from available sources based on the following perspectives:

1. **Regional Significance**: Is the project related to a future regionally-significant development opportunity and/or would it support such opportunities?
2. **Federal Freight Network**: Is the project located on federally-designated networks (e.g., NHFN, PHFS, NN)?
3. **Regional Freight Network**: Is the project located on part of the proposed Regional Freight Network?
4. **Freight Focus Area**: Is the project related to an identified Freight Focus Area on the County Profile maps (per Section 4 of this plan), and/or would it provide a relevant freight benefit to the Freight Focus Area?
5. **Multimodal Activity**: Does the project promote multimodal connectivity and/or include a non-highway mode?
6. **Corridor Enhancement**: Would the project provide a significant corridor enhancement benefitting freight, such as capacity, safety, or operations (e.g., including reconstruction, restoration, safety, or signals projects)?
7. **Project Scope/Scale**: Could the magnitude of the project (e.g., size, cost, duration, length, economic impact, modes) have significant freight or broader regional impacts?
8. **Planning Support**: Is the project identified in other planning documents by SPC, PennDOT, or related planning partners or stakeholders as important for freight or related economic development opportunities?
9. **State Support**: Is the project specifically identified as a regional highlight on statewide plans (e.g., PennDOT TYP MPO Profiles)?
10. **Outreach Support**: Is the project identified through multiple sources (including freight-related outreach discussions) as a project of regional and/or freight significance?

Exhibit 13: Eligible Project Types for State Apportioned Funds under the National Highway Freight Program

1	Development phase activities, including planning, feasibility analysis, revenue forecasting, environmental review, preliminary engineering and design work, and other preconstruction activities.
2	Construction, reconstruction, rehabilitation, acquisition of real property (including land relating to the project and improvements to land), construction contingencies, acquisition of equipment, and operational improvements directly relating to improving system performance.
3	Intelligent transportation systems and other technology to improve the flow of freight, including intelligent freight transportation systems.
4	Efforts to reduce the environmental impacts of freight movement.
5	Environmental and community mitigation for freight movement.
6	Railway-highway grade separation.
7	Geometric improvements to interchanges and ramps.
8	Truck-only lanes.
9	Climbing and runaway truck lanes.
10	Adding or widening of shoulders.
11	Truck parking facilities eligible for funding under section 1401 of MAP–21 (23 U.S.C. 137 note).
12	Real-time traffic, truck parking, roadway condition, and multimodal transportation information systems.
13	Electronic screening and credentialing systems for vehicles, including weigh-in-motion truck inspection technologies.
14	Traffic signal optimization, including synchronized and adaptive signals.
15	Work zone management and information systems.
16	Highway ramp metering.
17	Electronic cargo and border security technologies that improve truck freight movement.
18	Intelligent transportation systems that would increase truck freight efficiencies inside the boundaries of intermodal facilities.
19	Additional road capacity to address highway freight bottlenecks.
20	Physical separation of passenger vehicles from commercial motor freight.
21	Enhancement of the resiliency of critical highway infrastructure, including highway infrastructure that supports national energy security, to improve the flow of freight.
22	A highway or bridge project, other than a project described in clauses (i) through (xxi), to improve the flow of freight on the National Highway Freight Network.
23	Any other surface transportation project to improve the flow of freight into and out of a freight intermodal facility described in subparagraph (B).

Source: FAST Act Section 1116

Exhibit 14: Freight-Relevant Project Candidates (Interstates)

Corridor/Location	Project Name	County	Cost/Time Frame	Source
I-70	I-70 Belle Vernon Bridge Preservation	Washington	$16.5M (ST)	TYP
I-70	I-70 at SR 3009 Bridge Replacement	Washington	$14.2M (MT)	TYP
I-70	I-70 Cap Maintenance: Wash to WV Border	Washington	$115M (LT)	SPC LRTP
I-76	I-76 - PA 8 Interchange to Allegheny Valley Interchange	Allegheny	$210M (ST)	PA Turnpike Commission
I-76	I-76: Beaver River Bridge Replacement	Beaver	$150M (ST)	PA Turnpike Commission
I-76	I-76: Mainline Bridge Replacement over Brush Creek	Beaver	$6M (ST)	PA Turnpike Commission
I-76	I-76: Cranberry Interchange to Pine Twp Mile Post 28-31	Butler	$80M (ST)	PA Turnpike Commission
I-79	I-79 Neville Island Bridge and Ramps, Preservation / Painting	Allegheny	$77M	SPC LRTP
I-79	I-79 Widening: SR 228 to SR 528 (4 to 6 lanes)	Butler	$65M (LT)	SPC LRTP
I-79	I-79: Reconstruction Butler County	Butler	$158M	SPC LRTP
I-79	I-79 Mt Morris Interchange Area Improvements	Greene	$6M (MT)	SPC LRTP
I-79	I-79 from Waynesburg to WV State Line	Greene	$20M (LT)	SPC LRTP
I-79	I-79 Expansion: ALCO Line to I-70 N Junction (4 to 6 lanes)	Washington	$70M (LT)	SPC LRTP
I-376	I-376/PA 18 Intersection Realignment	Beaver	$60M (ST)	TYP, SPC LRTP
I-376	I-376 Pkwy East: Squirrel Hill Tunnel to Turnpike, Operational & Interchange Upgrades	Allegheny	$300M	SPC LRTP
I-376	I-376 Pkwy East: Downtown to Squirrel Hill Tunnel, Operational & Interchange Upgrades	Allegheny	$100M	SPC LRTP
I-376	I-376 & I-79 - Capital Maintenance	Lawrence	$200M	SPC LRTP
I-376	I-376 Pkwy E Corridor Safety Improvements	Allegheny	$6.1M (ST), $35.4M (MT)	SPC LRTP

Table Note: Time frame references include (ST) short term; (MT) medium term; and (LT) long term

Exhibit 15: Freight-Relevant Project Candidates (US Highways)

Corridor/Location	Project Name	County	Cost/Time Frame	Source
US 19	US 19 Hwy Reconstruction (West End Bypass/Pkwy West)	Allegheny	$9.2M (ST)	TYP
US 19	US 19 Hwy Restoration (PA 68 to PA 488)	Butler	$2.5M (MT)	TYP
US 19	US 19 Hwy Restoration (Tower Rd to Moore St)	Greene	$2M (MT)	TYP
US 19	US 19 Hwy Restoration (Walnut St to Mall Rd)	Washington	$6.2M (ST)	TYP
US 19	US 19: 6 Lanes from Rochester Rd to PA 528	Butler	-	SPC LRTP
US 19	US 19/PA 221 Ruff Creek Intersection Improvements	Greene	$2M (MT)	SPC LRTP
US 22	US 22 Armagh Bypass Reconstruction	Indiana	$31.3M (MT)	TYP, SPC LRTP
US 22	US 22 Hwy Reconstruction at PA 217 Interchange	Indiana	$14.3M (LT)	TYP, SPC LRTP
US 22	US 22 Route Safety Improvements	Indiana	$4M (MT)	TYP
US 30	US 30 Corridor Improvements	Westmoreland	$40M (MT)	SPC LRTP
US 119	US 119 Hwy Restoration (Pechin Rd to Bell Dr)	Fayette	$10.3M (ST)	TYP
US 119	US 119 Grove Chapel Climbing Lane	Indiana	$12.5M (ST)	TYP
US 119	US 119 Grove Chapel Safety Improvements	Indiana	$10.8M (MT)	TYP
US 119	US 119 Homer City North Safety Improvements	Indiana	$5M (ST)	TYP
US 119	US 119 Hwy Reconstruction (Co Line to Crossover Rd)	Westmoreland	$45M (ST, MT)	TYP, SPC LRTP
US 119	US 119 at McClure Rd/Kingview Rd Improvements	Fayette	$40M (MT)	SPC LRTP
US 119	US 119 thru Connellsville Safety Improvements	Fayette	-	SPC LRTP
US 119	US 119 Homer City Group Bridges Rehabilitation	Indiana	$25.5M (MT)	SPC LRTP
US 422	US 422 Shelocta Bridge #1 Replacement	Indiana	$5M (ST)	TYP
US 422	US 422 Hwy Reconstruction (Line Ave to New Butler)	Lawrence	$2M (MT)	TYP
US 422	US 422 Hwy Reconstruction (Turnpike to Moravia)	Lawrence	$12M (MT)	TYP
US 422	US 422 WB Bridge Restoration at PA 60	Lawrence	$4.5M (LT)	TYP
US 422	US 422 West Lane Expansion	Butler	-	SPC LRTP
US 422	US 422 EB Bridge Restoration at PA 18	Lawrence	$7.5M (LT)	SPC LRTP

Table Note: Time frame references include (ST) short term; (MT) medium term; and (LT) long term

Exhibit 16: Freight-Relevant Project Candidates (State Highways)

Corridor/Location	Project Name	County	Cost/Time Frame	Source
PA 18	PA 18 Hwy Restoration (PA 21 to County Line)	Greene	$6.9M (ST)	TYP
PA 18	PA 18 Hwy Restoration (PA 21 to Browns Creek)	Greene	$4.4M (ST)	TYP
PA 18	PA 18 Hwy Restoration (WV Line to TR 469)	Greene	$9.3M (MT)	TYP
PA 18	PA 18 Hwy Restoration (PA 351 to PA 108)	Lawrence	$4M (ST)	TYP
PA 18	PA 18 Mahoning Viaduct Bridge Restoration	Lawrence	$11M (ST)	TYP
PA 18	PA 18 Signal Upgrades	Washington	$7.3M (ST)	TYP
PA 18	PA 18 Hwy Reconstruction (Wilmington/Grove to Mercer Co)	Lawrence	$15.6M (MT)	SPC LRTP
PA 21	PA 21 over PA 166 Bridge Replacement	Fayette	$2.8M (MT)	TYP
PA 21	PA 21 Hwy Restoration (Bailey's Crossroads)	Greene	$5M (ST)	TYP
PA 21	PA 21 Corridor Improvements	Fayette	$20M (MT), $70 (LT)	SPC LRTP
PA 28	PA 28 Hwy Reconstruction (Allegheny Valley)	Allegheny	$8.8M (MT)	TYP
PA 28	PA 28 Truck Climbing Lane	Armstrong	$10M (LT)	SPC LRTP
PA 28	PA 28 Geometry Improvements	Armstrong	$20M (LT)	SPC LRTP
PA 28	PA 28 North Lane Expansion to County Line	Armstrong	-	SPC LRTP
PA 50	PA 50 Hwy Restoration (PA 18 to Wabash St)	Washington	$6.3M (MT)	TYP
PA 51	PA 51 Hwy Restoration (Lebanon Church)	Allegheny	$7.3M (MT)	TYP
PA 51	PA 51 Hwy Restoration (Ohio State to SR 4004)	Beaver	$10.3M (MT)	TYP
PA 51	SR 51 Underpass Intermodal Site	Beaver	-	SPC LRTP
PA 65	PA 65 Hwy Reconstruction (Ft Duq Bridge to Cal Ave)	Allegheny	$17.5M (MT)	TYP
PA 65	PA 65 Hwy Restoration (Allegheny Co to PA 51)	Beaver	$10.1M (MT)	TYP
PA 65	PA 65 Corridor Improvements	Lawrence	-	SPC LRTP
PA 66	PA 66 North of US 22	Westmoreland	-	SPC LRTP
PA 68	PA 68 Safety Improvements	Butler	$5 M (MT), $20M (LT)	SPC LRTP
PA 85	PA 85 Preventative Maintenance (Armstrong Co to US 119)	Indiana	$2.6M (MT)	TYP
PA 85	PA 85 Geometry Improvements	Armstrong	$10M (LT)	SPC LRTP
PA 88	PA 88 over Whitely Creek Bridge Replacement	Greene	$5.4M (MT)	TYP, SPC LRTP
PA 88	PA 88 over Trib Mon River Bridge Replacement	Washington	$1.2M (MT)	TYP

Table Note: Time frame references include (ST) short term; (MT) medium term; and (LT) long term

Exhibit 17: Freight-Relevant Project Candidates (State and Other Highways)

Corridor/Location	Project Name	County	Cost/Time Frame	Source
PA 130	PA 130 Corridor Safety & Operation Improvements	Westmoreland	-	SPC LRTP
PA 136	PA 136 West Newton Bridge Replacement	Westmoreland	$10.7M (MT)	TYP
PA 168	PA 168 Hwy Reconstruction	Lawrence	$2.1M (MT)	TYP
PA 168	PA 168 Hwy Reconstruction (Mallory to PA 18)	Lawrence	$3.3M (MT)	TYP
PA 218	PA 218 Hwy Restoration (Bluff Ridge to Cook)	Greene	$4.1M (ST)	TYP
PA 221	PA 221 Hwy Restoration (PA 188 to US 19)	Greene	$3.6M (MT)	TYP
PA 221	PA 221 Hwy Restoration (US 19 to County Line)	Greene	$3.8M (MT)	TYP
PA 224	PA 224 Transportation Improvements	Lawrence	-	SPC LRTP
PA 228	PA 228 Mars West Expansion	Butler	$0.5M (ST), $74M (MT)	TYP, SPC LRTP
PA 286	PA 286 Signal Upgrades	Indiana	$1.5M (MT)	TYP
PA 286	PA 286 Reconstruction	Indiana	$10M (MT)	SPC LRTP
PA 288	PA 288 Wampum Ave Bridge Replacement	Lawrence	$6M (ST)	TYP
PA 351	PA 351 Koppel Bridge Replacement	Beaver	$9.8M (ST), $21.5M (MT)	TYP, SPC LRTP
PA 356	PA 356 Truck Climbing Lane	Westmoreland	$10.3M (ST)	TYP
PA 356	PA 356 Corridor Upgrades	Butler	$9M (MT)	SPC LRTP
PA 519	PA 519 Safety Improvement (PA 980 to I-79)	Washington	$30M (ST)	TYP
PA 528	PA 528 Bridge Reconstruction	Butler	$21.5M (MT)	SPC LRTP
PA 711	PA 711 Crawford Ave Bridge Replacement	Fayette	$18M (MT)	TYP, SPC LRTP
PA 711	PA 711 Hwy Restoration (US 30 to Wilpen Rd)	Westmoreland	$4.8M (MT)	TYP
PA 711	PA 711 Hwy Restoration (PA 1015 to PA 381)	Fayette	$2.8M (MT)	SPC LRTP
PA 837	PA 837 Hwy Reconst. (State St – Rankin Bridge to PA 885)	Allegheny	$5.5M (MT)	TYP
PA 906	PA 906 Slide & Realignment	Fayette	$3.8M (ST)	TYP
PA 981	PA 981 Hwy Restoration at Kennametal	Westmoreland	$12M (ST)	TYP
PA 981	PA 981 over Loyalhanna Creek Bridge Replacement	Westmoreland	$6.4M (ST)	TYP
PA 981	PA 981 Laurel Valley Transportation Improvements	Westmoreland	$45M (MT), $55M (LT)	SPC LRTP
PA 2004	PA 2004 Freedom Road Improvements	Beaver	$82M (ST)	TYP
PA 3020	PA 3020 Freedom Rd Improvements	Butler	$17.7M (MT)	TYP, SPC LRTP
PA 3069	PA 3069, Liberty Bridge Preservation	Allegheny	$79M (ST)	TYP
Highway (Other)	Jeanette Truck Route	Westmoreland	-	SPC LRTP
Highway (Other)	Southern Beltway US 22 to I-79 New Construction	Allegheny	$745M (2022)	PA Turnpike Commission
Highway (Other)	Southern Beltway Secondary Traffic Impacts, I-79 to Mon-Fay Expwy	Washington	$50M (LT)	SPC LRTP
Highway (Other)	Southern Beltway Secondary Traffic Impacts, SR 22 to I-79	Washington	$30M (LT)	SPC LRTP

Table Note: Time frame references include (ST) short term; (MT) medium term; and (LT) long term

Exhibit 18: Freight-Relevant Project Candidates (Rail)

Corridor/Location	Project Name	County	Cost	Source
Major Rail	CSX – Lead Track and Crossover Prep for future McKees Rocks Terminal	Allegheny	$3M	RTAP
Major Rail	CSX Southwest - Pittsburgh Multimodal Rail Terminal, McKees Rocks	Allegheny	$60M	PA State Rail Plan
Major Rail	NS Main Line - Double Stack Clearance Project	Allegheny	$80M	PA State Rail Plan
Major Rail	NS Main Line - Perry Bridge Rehab/Replacement	Allegheny	$35M	PA State Rail Plan
Major Rail	NS Main Line - Track Stabilization Project	Beaver	$60M	PA State Rail Plan
Major Rail	NS Main Line - Shire Oaks Yard Project	Washington	$15M	PA State Rail Plan
Major Rail	NS Main Line - Load Out Area Construction	Westmoreland	-	PA State Rail Plan
Regional Rail	Buffalo & Pittsburgh Railroad (between Kittanning and New Castle)	Armstrong	$2M	RTAP
Regional Rail	Buffalo & Pittsburgh Railroad - Northern Subdivision	Butler	$3.6M	RTAP
Regional Rail	Wheeling & Lake Erie Railway - Continuous Welded Rail Project	Allegheny	$9.0M	PA State Rail Plan
Regional Rail	Wheeling & Lake Erie Railway - Construct new rail siding	Washington	$1.1M	Rail (RTAP - RFAP)
Shortline Rail	AVR - 36th St Trestle Project	Allegheny	$1.9M	PA State Rail Plan
Shortline Rail	D&I Silica	Fayette	$1.3M	RTAP
Shortline Rail	Hill Railroad Car Company	Lawrence	$0.2M	RFAP
Shortline Rail	Kiski Junction Railroad Extension Project	Armstrong	$26M	PA State Rail Plan
Shortline Rail	Middleton Properties West (4,800' track rehab; 2,700' new track)	Beaver	$0.6M	RFAP
Shortline Rail	PSWR – Rehabilitate five tracks, a pit track, turnout	Beaver	$0.5M	RFAP
Shortline Rail	PSWR – Track and Yard Improvements Project	Beaver	$4.4M	PA State Rail Plan
Shortline Rail	SWP Fay-Penn Industrial: rehabilitate track on FM&P subdivision line	Fayette	$1.2M	Rail (RTAP - RFAP)
Shortline Rail	SWP Capacity Improvements Project	Fayette	$3.0M	PA State Rail Plan
Shortline Rail	SWP Bowest Yard: install 5 yard track and runaround track	Fayette	$2M	RTAP
Shortline Rail	SWP Rail Rehabilitation Program	Fayette	-	PA State Rail Plan

Table Note: Time frames references not shown for non-highway project candidates

Exhibit 19: Freight-Relevant Project Candidates (Port, Terminal, or Airport)

Corridor/Location	Project Name	County	Cost	Source
Freight Terminal	Alicia Transshipment Facility (Applicant: Port of Pittsburgh Commission)	Allegheny	$13M to $44M	TIGER Applications (2010-2011)
Freight Terminal	Greene County Airport Industrial Spur Extension	Greene	$1.8M	PA State Rail Plan
Freight Terminal	New Kensington Smart Growth Corridor & Multimodal Facility (Applicant: City of Kensington)	Westmoreland	$13M to $25M	TIGER Applications (2011-2013)
Freight Terminal	Three Rivers Marine & Rail Terminals Multimodal Expansion Project (Applicant: Port of Pittsburgh)	Allegheny	$1.2M	TIGER Application (2010)
Freight Terminal	Three Rivers Marine Rail Terminal - Construct new track & rehabilitate storage track	Westmoreland	$0.3M	Rail (RTAP - RFAP)
Freight Terminal	Three Rivers Marine Rail Terminal - Build 8,000' track & three switches to enhance storage tracks	Westmoreland	$1.1M	Rail (RTAP - RFAP)
Freight Terminal	Three Rivers Marine Rail Terminal - Rehabilitate crossing/connection to WLE & track on Koppers	Westmoreland	$0.3M	RFAP
Freight Terminal	Westmoreland Industrial - Phase 2 of 3, replacing 3.2 miles of rail and associated work	Westmoreland	$1.5M	RTAP
Freight Terminal	Westmoreland Industrial - Replace rail/steel components on Radebaugh Sub. Rail Relay	Westmoreland	$1.1 M	RTAP
River/Port	Clean Fuels/Clean Rivers Program (Port of Pittsburgh Commission)	Multiple	-	Port of Pittsburgh
River/Port	M-70 Marine Highway Corridor Designation	Multiple	-	Port of Pittsburgh
River/Port	USACE Lower Monongahela Project	Multiple	-	USACE
River/Port	USACE Upper Ohio Navigation Study	Multiple	-	USACE
Airport	Green County Airport Access Road	Greene	$1M	SPC LRTP
Airport	The Airport Corridor Development Project (Applicant: Moon Transportation Authority)	Allegheny	2013 - $17.8M	TIGER

Table Note: Time frame references not shown for non-highway project candidates

Exhibit 20: Follow-up Freight Study Candidates

County	Potential Planning Actions	Focus Areas
Allegheny	Ohio River/PA 65/PA 51 Multimodal Corridor Access Assessment (coordinate efforts with Beaver County)	Neville Island - McKees Rocks
Allegheny	Downtown Pittsburgh Truck Route Assessment	Downtown Pittsburgh
Allegheny	PA 28 Freight Route Assessment	Millvale - Fox Chapel
Allegheny	Allegheny River Corridor Freight Access Assessments	Fox Chapel - Blawnox - Harmar - Indianola
Allegheny	Monongahela River Corridor Freight Access Assessments	Hazelwood - Homestead
Armstrong	Support and/or expand long term improvement options for the PA 28/PA 66 Corridor	PA 28/66 Corridor (North of Kittanning)
Armstrong	PA 268 Freight Route Assessment	West Kittanning
Armstrong	US 422 Corridor Freight Assessment	US 422 Corridor (East of Kittanning)
Beaver	Ohio River/PA 65/PA 51 Multimodal Freight Corridor Assessment	Ambridge - Aliquippa - Monaca
Beaver	PA 18 Freight Access and Connectivity Assessment	West of Monaca - Beaver Falls - Homewood
Butler	Coordinate with ongoing City of Butler Truck Study	Butler
Butler	Zelienople Area Freight Route, Access, and Connectivity Assessment	Zelienople
Butler	Jackson Township and Cranberry Township Freight Route, Access, and Connectivity Assessment	Jackson Township - Cranberry Township
Butler	PA 228 Corridor and Southern Butler County Freight Route, Access, and Connectivity Assessment	MULTIPLE
Fayette	PA 51 Corridor Access and Freight Route Assessment	Perry Township - Perryopolis - Franklin Township
Fayette	US 119 Corridor Connellsville Area Freight Route Assessment	Scottsdale - Connellsville
Fayette	Fayette County First/Last Mile Quarry Access and Localized Freight Route Assessment	MULTIPLE
Fayette	US 40 Corridor Freight Route Assessment	Brownsville
Greene	PA 221 Corridor Freight Route Assessment	Washington Township
Greene	PA 21 and Waynesburg Area Freight Access and Growth Assessment	Waynesburg
Greene	Perry Township/Mt Morris Freight Assessment (I-79 and US 19)	Perry Township - Mt Morris
Greene	PA 88 Corridor Freight Route Assessment	Cumberland Township - Carmichaels
Indiana	US 119 and PA 85 Freight Route Assessment and/or Monitoring	Home
Indiana	Blairsville and Burrell Township Freight Access and Connectivity Assessment	Blairsville - Burrell Township
Indiana	US 422 Strongstown Area Corridor Freight Route Assessment	Strongstown Area
Lawrence	US 224 Corridor Freight Access, Operations, and Connectivity Assessment	Oakwood
Lawrence	PA 18 Corridor Lawrence County and New Castle Area Freight Route Assessment	MULTIPLE
Washington	Cecil Township and Canonsburg Area Local Freight Access and Connectivity Assessment	MULTIPLE
Washington	PA 88 Corridor Freight Route Assessment	MULTIPLE
Westmoreland	Greensburg Area Freight Route and Connectivity Assessment	Greensburg - South Greensburg
Westmoreland	Latrobe Area Freight Route and Connectivity Assessment	Latrobe
Westmoreland	I-70 Corridor Freight Inventory, Connectivity, and Interchange Access Assessment	MULTIPLE

Freight Action Planning Next Steps

Southwestern Pennsylvania has experienced decades of challenges, but it is becoming recognized around the world as a place that can adapt and renew itself through concerted action. It also has unique assets that will help bring it through significant new challenges being experienced nationally.

Source: Mapping the Future, SPC

This Regional Freight Plan compiles key background details, multimodal freight transportation system insights, and relevant outreach perspectives to develop an overall freight context for Southwestern Pennsylvania. Within that context, the plan describes a freight narrative for the region, and presents federal, state, and regional policy perspectives to arrive at a set of regionally-relevant freight planning objectives and strategies. Coupled with this approach, it outlines additional planning resources to help explore regional freight network concepts, freight funding, freight performance measures, and freight-relevant project or study candidates. Additionally, the County Freight Profiles included in Section 4 of the plan organize much of this content on a county-specific basis to help simplify the presentation of many details and facilitate ongoing coordination with SPC's county and local planning partners and stakeholders.

Collectively, these efforts aim to equip SPC with the freight planning tools and resources needed to guide choices for meeting freight challenges, optimizing freight efficiencies, and advancing freight opportunities into the future.

There are a variety of ongoing or follow-up freight planning efforts linked with the regional freight planning objectives and strategies detailed in Section 3 of the plan. The following list summarizes six important groups of next steps for SPC to consider:

Continue collaboration at all levels.

Continue to build relationships and partnerships across interregional and intraregional boundaries to support and actualize opportunities for Southwestern Pennsylvania to work together and compete on a broader scale. Specific actions may include, for example, interregional outreach, the development of freight educational components, or follow-up collaboration with county planning partners relative to the County Freight Profile summaries.

Refine and/or formalize the Southwestern Pennsylvania Regional Highway Freight Network and Regional Multimodal Freight Corridor concepts.

Continue to review, refine, or formalize the proposed Southwestern Pennsylvania Regional Highway Freight Network and Regional Multimodal Freight Corridor concepts in a manner that will better enable regional significance while also providing a tool to enhance local project support. Specific actions may include, for example, further review and/or analysis of NHS intermodal connector opportunities, Critical Urban Freight Connector (CUFC) or Critical Rural Freight Connector (CRFC) eligibility, or first/last mile components.

Continue to explore freight performance measure requirements and needs.

Continue efforts toward interpreting the implications of freight-related performance management policies, guidelines, and requirements released in the latest federal NPRM, while also continuing to explore performance measure details that may be needed to more effectively monitor key freight transportation components within the region. Specific actions may include, for example, follow-up coordination with PennDOT to ensure statewide and MPO consistency and compliance relative to federal requirements.

Pursue and/or support freight-relevant project prioritization.

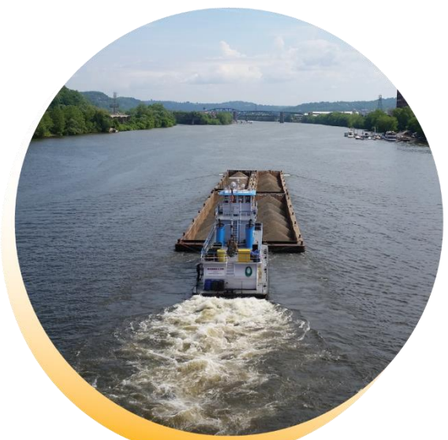
In parallel with the development of freight performance measures, or independently through the development of separate freight project screening methodologies, build upon the planning resources and project candidate lists included in this plan to identify key freight projects or freight-relevant project priorities. Specific actions may include, for example, reviews of SPC's recent *Livability throughout Smart Transportation Program* as a case-study in project scoring and ranking processes; reviews of project candidates by project category or relative to special funding or grant opportunities (e.g., future TIGER or FASTLANE Grant candidates); or discussions of how to further integrate freight priorities into other existing SPC planning processes (e.g., TIP, LRTP, CMP, etc.).

Pursue the completion of follow-up freight studies or planning actions.

In collaboration with PennDOT, county, and local planning partners, pursue and/or prioritize follow-up freight planning studies relative to the initial list of candidates and focus areas identified in this plan. Include considerations for an approach that would use such studies as a medium to supporting local project delivery alongside safety, efficiency, or operational enhancements. Specific actions may include, for example, area or facility specific coordination meetings and/or field views to validate or further define specific study issues, study areas, study scopes, etc. SPC efforts may also consider the integration of larger studies as part of their UPWP, or via independent projects.

Enhance in-house freight data management, inventories, and capabilities.

Continue ongoing compilation, refinements, and/or additions related to managing the variety of freight-related data explored during the development of this plan, as well as discussions of how to best apply this data to future freight planning updates. Specific actions may include, for example, further refining GIS inventories, enhancing regionally-specific rail or river terminal data, or pursuing online data compilations similar to DVRPC's Philly Freight Finder tool. Data management discussions may also review approaches to maintaining or updating the County Freight Profile sets, preparing for future NPMRDS analyses relative to future performance monitoring needs, or further exploring resources such as PennDOT's sign maintenance database or Pennsylvania Commodity Flow Tool.



SECTION 4: COUNTY FREIGHT PROFILES

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Section 4: County Freight Profiles

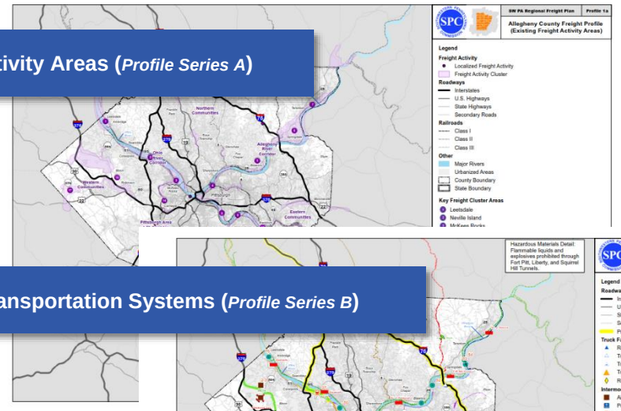
Overview

As its title implies, the Southwestern Pennsylvania Regional Freight Plan was intentionally developed with a regional perspective in mind. It considers the freight trends and assets of SPC's overall 10 county region, as well as potential influences, opportunities, or partnerships beyond SPC's borders into neighboring areas of Pennsylvania, Ohio, West Virginia, and Maryland. In establishing a general understanding of the region's freight places and stories, it then outlined a series of relevant objectives and strategies to help chart a course for freight planning efforts that should continue into the future. Within this context, the initial plan is not so much location, company, or project specific; rather it is a launching pad that attempts to compile an initial comprehensive freight inventory and set the stage for SPC to refine its details through ongoing collaboration with public and private freight stakeholders across the region and at all levels.

However, as a regional plan that considered at least 37 counties across 4 states, and with freight being a subject that runs a gamut of topics from international import/export opportunities to first/last mile concerns, it can be difficult to filter or interpret so much information without becoming overwhelmed or losing sight of how to prepare for or react to what the information communicates. Additionally, it is a reality that each of the 10 counties in the SPC region are unique in many ways, and their freight assets, resources, issues, or opportunities all contribute in a slightly different manner to the overall freight story for the region. For these reasons, this plan has compiled the following series of County Freight Profiles – one for each of SPC's 10 counties – to supplement the overall regional freight planning objectives and strategies included in previous sections of this plan. These profiles aim to compartmentalize and interpret many of the broader freight details in a more practical and digestible manner, may be referenced as standalone documents for county-specific discussions, and should ideally be treated as living documents to help foster ongoing collaboration between SPC, PennDOT Districts, county and municipal planning or economic development staff, private industry, multimodal freight transportation representatives, or similar freight stakeholders. These profiles are tools; and while they may reflect a snapshot in time, ongoing collaboration should aim to periodically update, enhance, or explore refinements to their content and application as needed to further the regions freight knowledge base and planning capabilities.

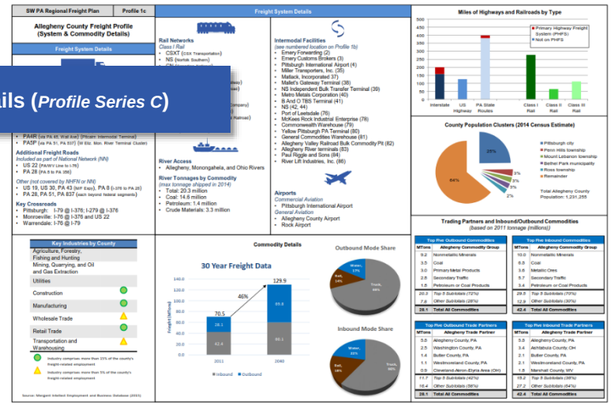
Each freight profile presents a standard set of information that generally encompasses the topics described below, and culminates in the identification of potential freight focus areas, planning actions, and sample projects specific to each county.

Existing Freight Activity Areas (*Profile Series A*)

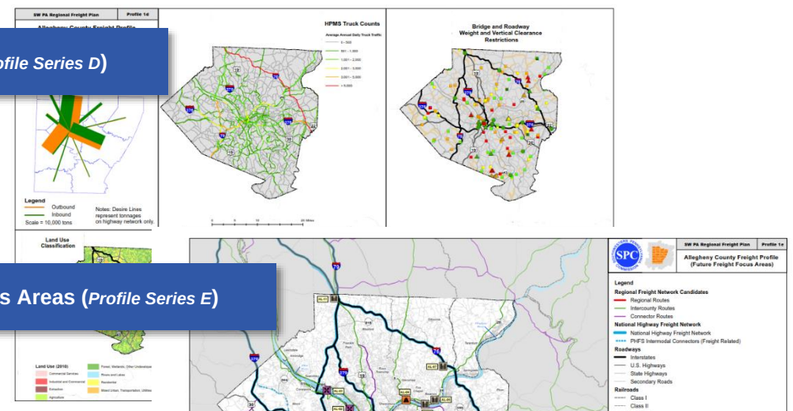


Existing Transportation Systems (*Profile Series B*)

System & Commodity Details (*Profile Series C*)

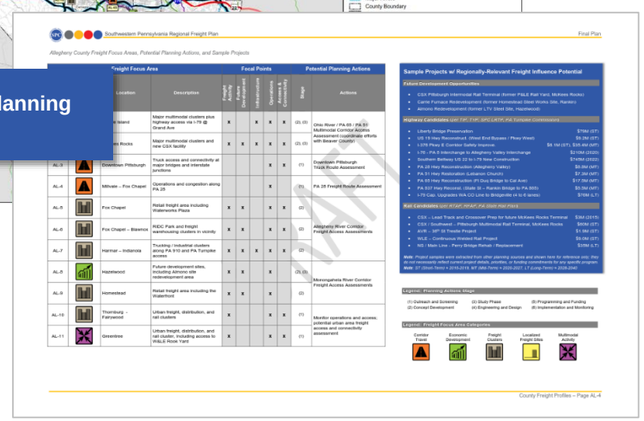


System Data & Analyses (*Profile Series D*)



Future Freight Focus Areas (*Profile Series E*)

Freight Focus Areas, Potential Planning Actions, and Sample Projects



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