



## Chapter 1

# Executive Summary

Freight traffic on Route 222 Bypass

The Lehigh Valley Metropolitan Planning Organization (MPO), in cooperation with PennDOT, is developing a freight plan for the MPO region that includes Lehigh and Northampton counties. The MPO entered into an agreement with a planning consultant to develop the plan, in conjunction with current work on Pennsylvania's first-ever *Comprehensive Freight Movement Plan* (CFMP). This regional freight plan includes the following components:

1. Regional freight profile, including:
  - a. Regional employment data
  - b. Regional attractions
  - c. Summary of regional freight flows and forecasts (tonnage, value and commodities)
  - d. Regional freight transportation assets
  - e. Regional freight transportation system performance and conditions
2. Freight transportation trends, needs and issues identified as part of the regional freight profile and discussions with stakeholders
3. Current freight policy, the federal, state and regional levels that guide planning and programming activities for freight infrastructure
4. Regional freight transportation goals and policies, including a discussion of performance measures and options for incorporating freight issues into the MPO's existing project prioritization process
5. Recommendations

**REGIONAL FREIGHT PROFILE** – The regional freight profile supports the importance of efficient freight movement and critical freight transportation assets to the regional economy. Highlights include:

- **Employment** – The mining, manufacturing, transportation and warehousing, and wholesale and retail trade industries accounted for 27% of the total job market within the region in 2010. These are the most freight-dependent industries, with an increased reliance on an efficient goods movement system to support their businesses. Overall, the number of jobs across all sectors is expected to increase in the Lehigh Valley by approximately 38% through 2040.<sup>1</sup>
- **Expansive Roadway Network** – The region is served by the availability of over 4,000 linear miles of roadway. Just over a quarter of this mileage is owned by the state or the Pennsylvania Turnpike Commission.
- **Growing Travel Demand** – Total daily travel demand in the region is approximately 13.6 million vehicle miles traveled (VMT), an increase of 4% since 2002.<sup>2</sup>
- **Growth on Local System** – For the ten-year period ending in 2012, the region’s highway network expanded by 215 linear miles; however, 213 miles of this includes locally or municipally-owned roadways. Volume growth on the locally-owned network over the past decade was 12%.
- **Representation on National Primary Freight Network** – The region has one facility, Interstate 78, on the Federal Highway Administration’s (FHWA’s) suggested Primary Freight Network (PFN).
- **Bethlehem Intermodal** – Approximately 8% of Pennsylvania’s rail freight tonnage both originates and terminates in Bethlehem. Norfolk Southern estimates that 200,000 freight containers could eventually move through the terminal annually.
- **Aviation** – The Lehigh Valley International Airport serves approximately 4,000 businesses annually, including freight carriers such as FedEx. In 2013, the airport facilitated the movement of over 16,000 freight tons, a decline of one-third from a decade ago.

<sup>1</sup> *Lehigh Valley Employment Forecast...2040*

<sup>2</sup> *Pennsylvania Highway Statistics. 2012. PUB 600 Highway Data.*

**Freight Movement Overview** – The Lehigh Valley’s freight infrastructure facilitates the movement of a significant volume of freight traffic through the year, approximately 40.9 million tons. All three modes—truck, rail and air—support the movement of goods in the region, yet trucking far surpasses the others in total volume and in the value of goods being moved. This profile provides an overview of the role all three modes play in goods movement in the Lehigh Valley and offers forecasts for the anticipated share by mode by the year 2040.

In 2011, 40.9 million tons of goods moved into, within and out of the Lehigh Valley, with a value of approximately \$51.1 billion. The majority of the tonnage (approximately 60%) was inbound freight, followed by freight moving outside of the region (approximately 38%). The remaining amount was freight moving within the region, predominantly by truck.

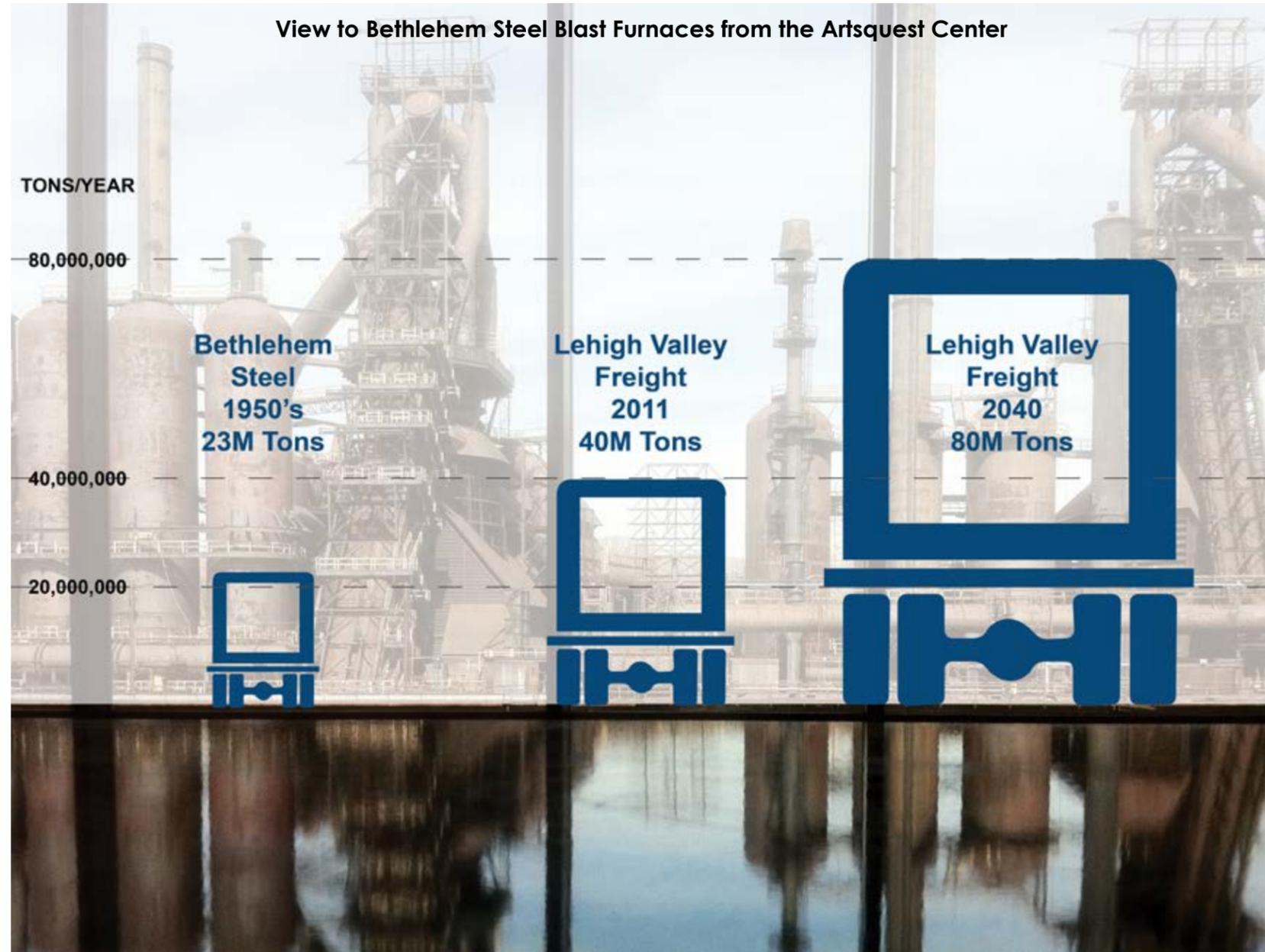
As seen in **Figure 1**, the majority of freight is carried by truck (90% of the total tonnage and 86% of the total value). The overwhelming majority of goods (in terms of value and tonnage) destined to points within the Lehigh Valley currently arrive by truck. While rail only carries 10% of total tonnage and 11% of total value, respectively, it does carry a considerable amount of inbound freight (14% of total inbound tonnage and 17% of total inbound value).

**Freight Forecast** – By 2040, total volume is expected to increase by 96%, to 80.2 million tons, with an approximate value of \$129.6 billion. The majority of the tonnage continues to be inbound freight. However, this share has dropped from 60% of total movement in 2011 to just over 50% by 2040. The share of outbound freight rises to 46%, an increase from the 38% share in 2011. The remaining amount was freight moving within the region, predominantly by truck.

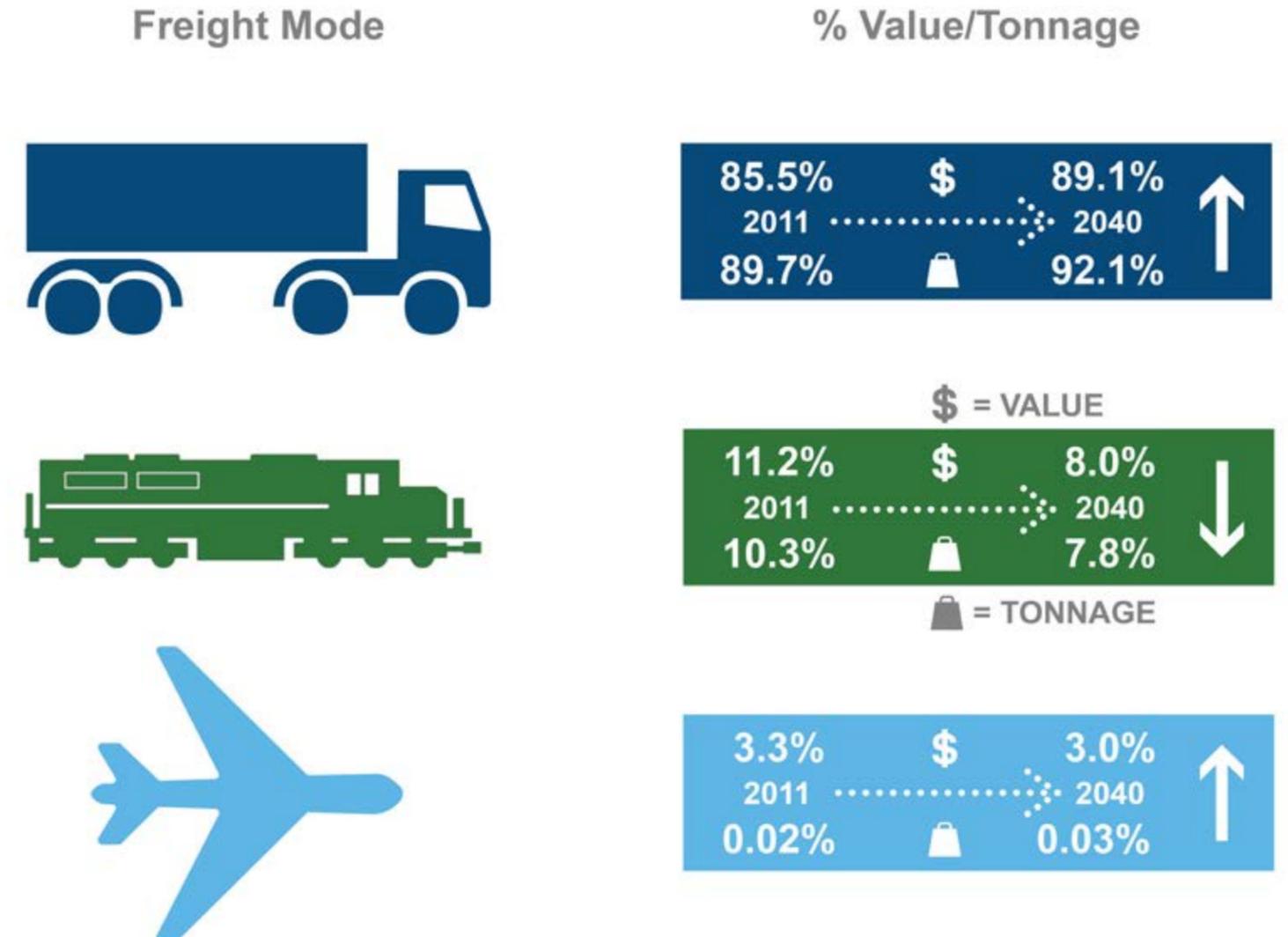
As seen in **Figure 1**, the majority of freight will still be carried by truck (92% of the total tonnage and 89% of the total value). Rail is only forecasted to carry about 8% of total tonnage and value, respectively. It will still carry a considerable amount of inbound freight in 2040 (12% of total tonnage and 14% of total value), although a slight decrease from 2011. Rail is forecasted to carry more lower value commodities, while air will carry the lower weight, higher value commodities.

**Commodity Types/Highway** – The top five commodity types entering the region via truck account for nearly 60% by tonnage and nearly 50% by value of all commodities in 2011. This share of the top five commodities is expected to remain roughly the same in 2040. The top five commodities being shipped from the region in 2011 account for 58% of the total share by tonnage and 62% by value. By 2040, the top five commodities exiting the region are forecasted to account for 64% of the total tonnage and 71% of the total value.

**Commodity Types/Rail** – The top five commodity types entering the region via rail account for nearly 54% by tonnage and 68% by value of all commodities in 2011. This share of the top five commodities is forecast to drop slightly in tonnage for 2040 (49%) and increase slightly by value (73%). The top five commodities being shipped from the region by rail in 2011 account for 80% of the total share by tonnage and 85% by value. By 2040, the top five commodities exiting the region by rail are forecasted to account for 83% of the total tonnage and 88% of the total value.



**Figure 1**  
**Lehigh Valley Freight**  
 Share of Total Tonnage and Value by Mode (2011 + 2040)



Source: IHS Global Insight

**TRENDS, NEEDS AND ISSUES** – Building on the analysis of the transportation system and regional freight flows, the trends, needs and issues highlight the importance of close public and private coordination.

- **Growth on local system:** For the ten-year period ending in 2012, the region's highway network expanded by 215 linear miles, with 213 miles of this being on locally or municipally-owned roadway. Volume growth on the locally-owned network over the past decade was 12%.
- **Need for alternate routes:** Accidents, congestion and construction can force trucks from their intended routes onto other roads. If a suitable alternate does not exist, trucks end up on local roads not designed to handle such large vehicles. Therefore, in order to ensure efficient freight movement, major trucking routes should have a designated alternate route suited to handle truck traffic.
- **Road and bridge conditions:** Locally-owned bridges in the Lehigh Valley region are in worse condition than the state-owned bridges. Locally-owned bridges are about seven times more likely to be posted than state-owned bridges and ten times more likely to be closed. The locally-owned bridges are also twice as likely to be classified as structurally deficient as the state-owned bridges. This illustrates a need to improve maintenance and upkeep on the locally-owned bridges in the Lehigh Valley.
- **Rail abandonment:** The region is at risk of losing some existing rail lines to abandonment, precluding the reuse of adjacent sites by rail-served businesses.
- **At-grade rail crossings:** From both the rail and highway side, stakeholders noted that at-grade rail crossings were a concern. As noted in section 7.5, there are 33 at-grade rail crossings in the Lehigh Valley. When a train passes through an at-grade crossing, traffic on the road is forced to stop until the train has passed. Additionally, train speeds are reduced when traversing an at-grade crossing. Furthermore, at-grade rail crossings can pose a safety concern as collisions can occur between trains and other vehicles. Eliminating these at-grade crossings would improve the flow of both trucks and trains and remove a potential safety hazard.
- **Congestion:** Roadway congestion increases travel time and decreases travel time reliability, increasing the cost of doing business for companies. During stakeholder interviews, US 22 and I-78 were mentioned as being particularly congested. Sections of US 22 from SR 100 to SR 378 were also identified as among the top truck freight bottlenecks in the state. Unless improvements are made, the congestion is only projected to get worse as the region continues to grow. In addition to roadway congestion, there is also congestion on the Class I rail lines. In particular, as the economy has recovered, congestion along Norfolk Southern's mainline in the region and in the Allentown Yard have increased. Additionally, approximately 8% of Pennsylvania's rail freight tonnage both originates and terminates in Bethlehem. Norfolk Southern estimates that 200,000 freight containers could eventually move



Abandoned rail lines near Lehigh River in Bethlehem

through the terminal annually. It is important that this terminal keep up with growing demand.

- **Truck parking:** One issue that was prevalent throughout the stakeholder input was the need for more truck parking in the region. The updated federal hours of service requirements for commercial motor vehicles, which went into effect July 1, 2013, necessitate the need for more truck parking as drivers are required to take more breaks. A truck parking shortage can force drivers to pull over on the side of the road, creating a safety hazard. The availability of truck parking is a concern within the region. Independent studies by the state Transportation Advisory Committee (TAC) have determined the region qualifies as a “region with unmet truck parking demand.”
- **Commercial driver shortage:** Commercial driver shortages are another concern that appeared throughout the stakeholder input. Companies are struggling to hire enough drivers to keep up with their growing businesses. Long stretches away from home and family, as well as stagnant salaries, have made trucking unattractive to potential drivers in recent years. The American Trucking Association estimated that, in 2014, there were between 30,000 and 35,000 unfilled commercial vehicle driver jobs. As the economy continues to recover and demand for freight expands, this problem is only projected to get worse.

- **Data collection and accuracy:** Having accurate and updated data is critical when planning for the future of freight movement. Stakeholders stated that there was a lack of data available, especially with regards to commodity movements in the region. For instance, the Lehigh-Northampton Airport Authority does not track the commodities going in and out of the airport, nor do they have information on trends. This lack of data makes it difficult to develop future projections of freight movement that might indicate a need to invest in expanding the freight capacity at the airport.
- **Coordination:** In order to implement an effective plan, coordination among agencies, such as the LVPC and PennDOT, must take place. Inconsistent permitting issues across levels of government and cumbersome permitting processes for oversize/overweight trucks were also mentioned as an issue. It is also important that specific projects are looked at as part of a larger picture so as not to put two roads under construction at the same time that might act as alternative routes for one another. Additionally, it is equally important for the public and private sector to work together. During the stakeholder interviews, it was noted that Norfolk Southern does not have a liaison with the LVPC. The private sector can help provide valuable input and data during the development of plans, and efforts should be made to include them in the planning process whenever possible. Another form of coordination that should be explored is the expansion of public/private partnerships to fund projects.



Truck Parking at warehouses near Route 100

**Regional Freight Policies** - The *Lehigh Valley Regional Freight Plan* (LVRFP) freight policies are aligned with national freight goals and are consistent with the LVPC *Long Range Transportation Plan* and PA on Track, the *Pennsylvania Long Range Transportation Plan* (PA LRTP) and *Pennsylvania Comprehensive Freight Movement Plan* (CFMP). This provides several benefits for the LVRFP:

- Ensures that the LVRFP recommendations support the PA LRTP goals.
- Ensures that the LVRFP recommendations support the statewide and national freight plan initiative and goals.
- Establishes policies that have been shared with the public and stakeholders and thus already have substantial buy-in.
- Enhances the LVPC's strategic direction and ensures consistency and alignment of the policies across different transportation plans.

These policies articulate the region's freight investment priorities, help define freight system investment needs and identify the desired future performance of the multimodal regional freight network.

Many of these policies support multiple LVPC transportation goals; consequently, the LVPC can identify future transportation investments that address multiple policies and overall transportation goals.

The LVRFP's supporting freight policies are consistent with the *Pennsylvania Comprehensive Freight Movement Plan* and the *Pennsylvania Long Range Transportation Plan*, namely: Safety, System Preservation, Mobility and Stewardship. The LVPC freight and multimodal goal and associated policies are:

**Freight and Multimodal Goal** – Provide transportation choices, improve system connectivity and improve safety for all passenger and freight modes.

**Policies**

- **Safety:** Identify projects that reduce rates of crashes, fatalities and injuries on the regional freight transportation system.
- **System Preservation:** Improve the overall ratings of pavement and bridges on the regional freight transportation system.
- **Mobility:** Improve freight corridor mobility and first/last mile connectivity between freight modes and major generators and gateways. The first/last mile connectivity refers to the part of the supply chain where the good is either moved from its point of origin into an intermodal shipping center or from a shipping center to its final destination.
- **Mobility:** Identify the most cost-effective methods to improve freight system capacity (including technology and operations).
- **Stewardship:** Lead efforts to foster greater coordination among the agencies responsible for freight system investment.



Fixed object marker and rumble strips on new interchange at Route 33 + Main Street near Tatamy

## RECOMMENDATIONS

The recommendations were developed in an effort to address the trends, needs and issues and meet the regional freight goal and accompanying policies. These high level policy recommendations are designed to ensure the safe, efficient movement of freight in the future. Further analysis can be undertaken to identify specific projects that can help achieve these policy recommendations. The recommendations are grouped under the policy they help to accomplish.

Implementation of this plan will require further action and follow-up by LVPC members, committees and staff, including potential adoption of additional policies and guidance.

### Safety

- Eliminate at-grade rail crossings on critical rail and highway freight corridors.
- Identify and analyze potential new truck parking locations.

### Mobility

- Develop and publicize alternative routes for heavily used freight corridors.
- Reduce congestion and bottlenecks at critical first/last mile connectors to major freight generators and gateways.
- Identify options for reducing bottlenecks and congestion along major regional freight corridors.
- Work with the private sector and educational institutions to highlight the issues related to driver shortages and impact of federal regulations.

### System Preservation

- Develop a maintenance plan to address and prioritize critical bridge and roadway improvements on the regional freight network.
- Develop a regional rail plan to identify regional freight rail corridors, including identifying those corridors at risk of abandonment.

### Stewardship

- Incorporate freight issues into the *Long Range Transportation Plan* and project selection process, with accompanying freight-specific performance measures.
- Develop a data collection and storage initiative in order to serve as a freight data clearinghouse, analyze freight system conditions and performance, and track system performance measures.
- Continue to coordinate with PennDOT and other public agencies, economic development agencies and the private sector on regional freight mobility issues.



View of traffic on I-78 from West Rock Road looking east