

# Lehigh Valley Passenger Rail Feasibility Study

Stakeholder Coordination Meeting  
*March 27<sup>th</sup>, 2023*





# Agenda

- 1 Project Purpose
- 2 Study Findings
- 3 Project Development Process
- 4 Discussion



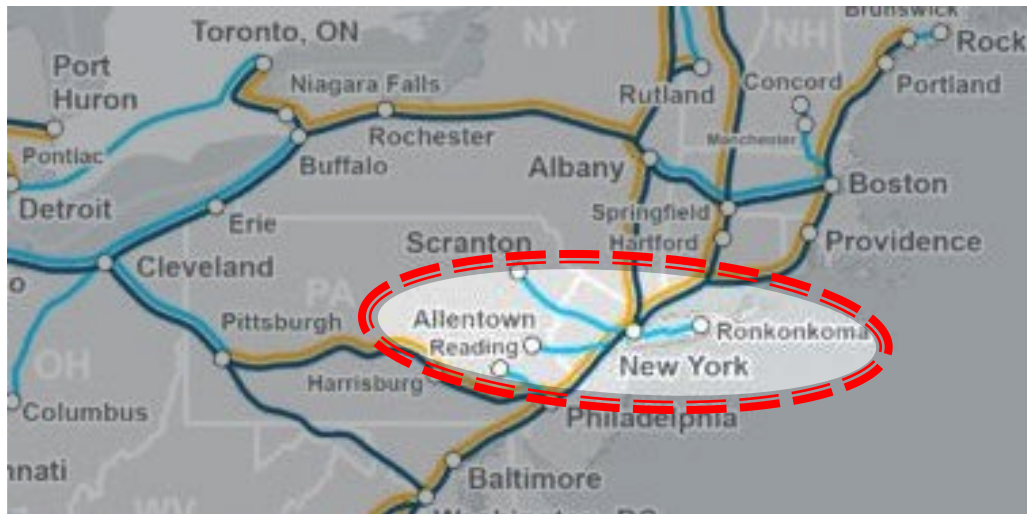
A photograph of railroad tracks running through a town. On the left, there are several large, light-colored industrial buildings with gabled roofs. In the background, there are more buildings and a hillside covered in green trees under a blue sky with scattered clouds. On the right, there is a utility pole and a small brown shed. The tracks are made of steel rails on wooden ties, set on a bed of gravel.

# Project Purpose



# Purpose of the Study

- 2021 "Amtrak Connects US" vision plan identified service from Allentown to NYC
- Establish framework to discuss passenger rail restoration opportunities and challenges in the Lehigh Valley
- Provide a comparative assessment of corridors and service alternatives
- Lay out pathway to implementation for potential project sponsor



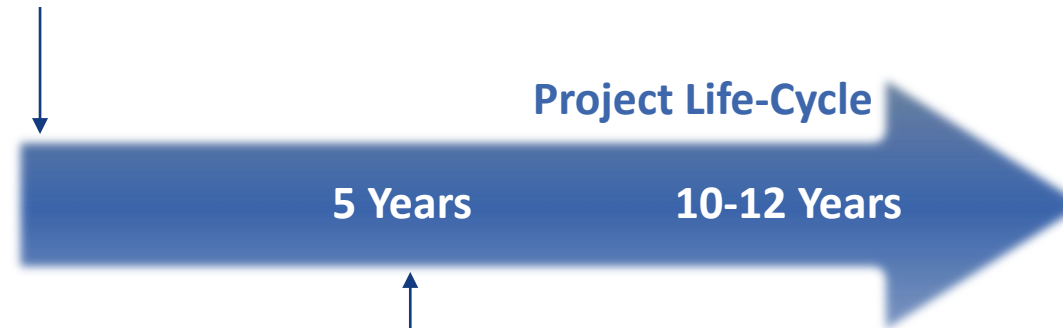
## Lehigh Valley Passenger Rail Feasibility Analysis

FO4113.W0 14  
Final Report  
March 2024



Prepared for:  
pennsylvania  
DEPARTMENT OF TRANSPORTATION

Prepared by:  
wsp



## Reading to Philadelphia Passenger Rail Analysis

Final Report  
December 2020



prepared for:  
pennsylvania  
DEPARTMENT OF TRANSPORTATION

prepared by:  
wsp

## Altoona – Pittsburgh Passenger Rail Study

Final Report  
June 2019



prepared for:  
pennsylvania  
DEPARTMENT OF TRANSPORTATION

prepared by:  
wsp



A photograph of railroad tracks running through a town. On the left, there are several large, light-colored industrial buildings with gabled roofs. In the background, there are more buildings, including a prominent brick one, and a green, hilly landscape under a blue sky with scattered clouds. On the right side of the tracks, there is a small, dark brown utility shed and a utility pole. The tracks themselves are made of steel rails on wooden ties, set on a bed of gravel. The overall scene is a mix of industrial and residential environments.

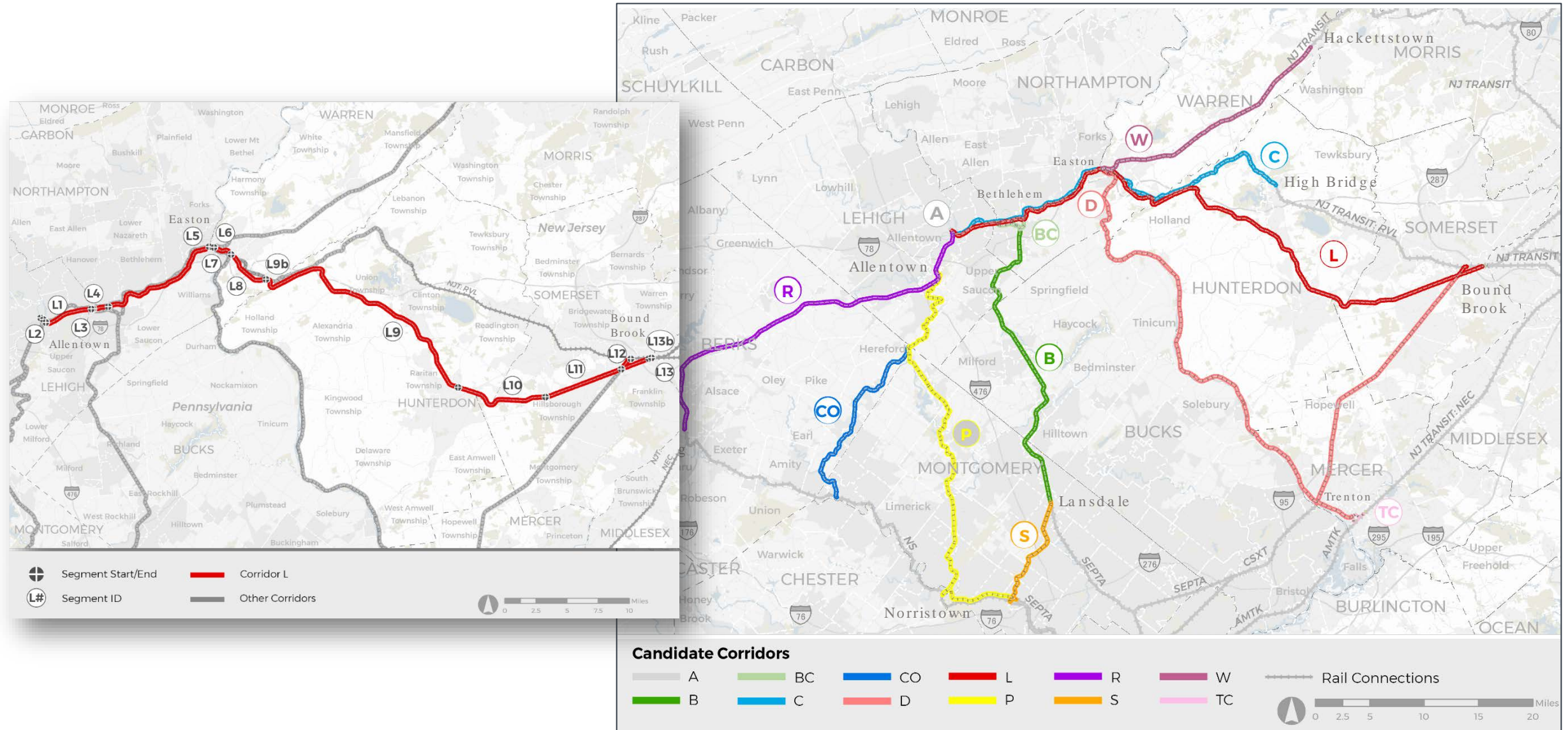
# Study Findings



# Market Pairs

- Lehigh Valley to **Newark/New York**
- Lehigh Valley to **Philadelphia**
- Lehigh Valley to **Reading**

# Candidate Corridors



# Corridor Characteristics

- Rail Conditions
  - Track
  - Structures
- ROW Conditions
- Operations
- Environmental Screening



# Infrastructure and Operations

- **Infrastructure**

- Making maximum use of existing railroad rights-of-way
- Reactivation of abandoned rail infrastructure
- In some locations, construction of new railroad rights-of-way may be needed
- All rights-of-way used would need new signaling, station, siding infrastructure

- **Operational Conflicts with Freight Railroads**

- Contending with freight train traffic both on main lines and in yards
- Bethlehem is a particularly difficult area for passenger trains to interface with freight trains

- **Operations**

- Run-time to:

- New York



- Philadelphia

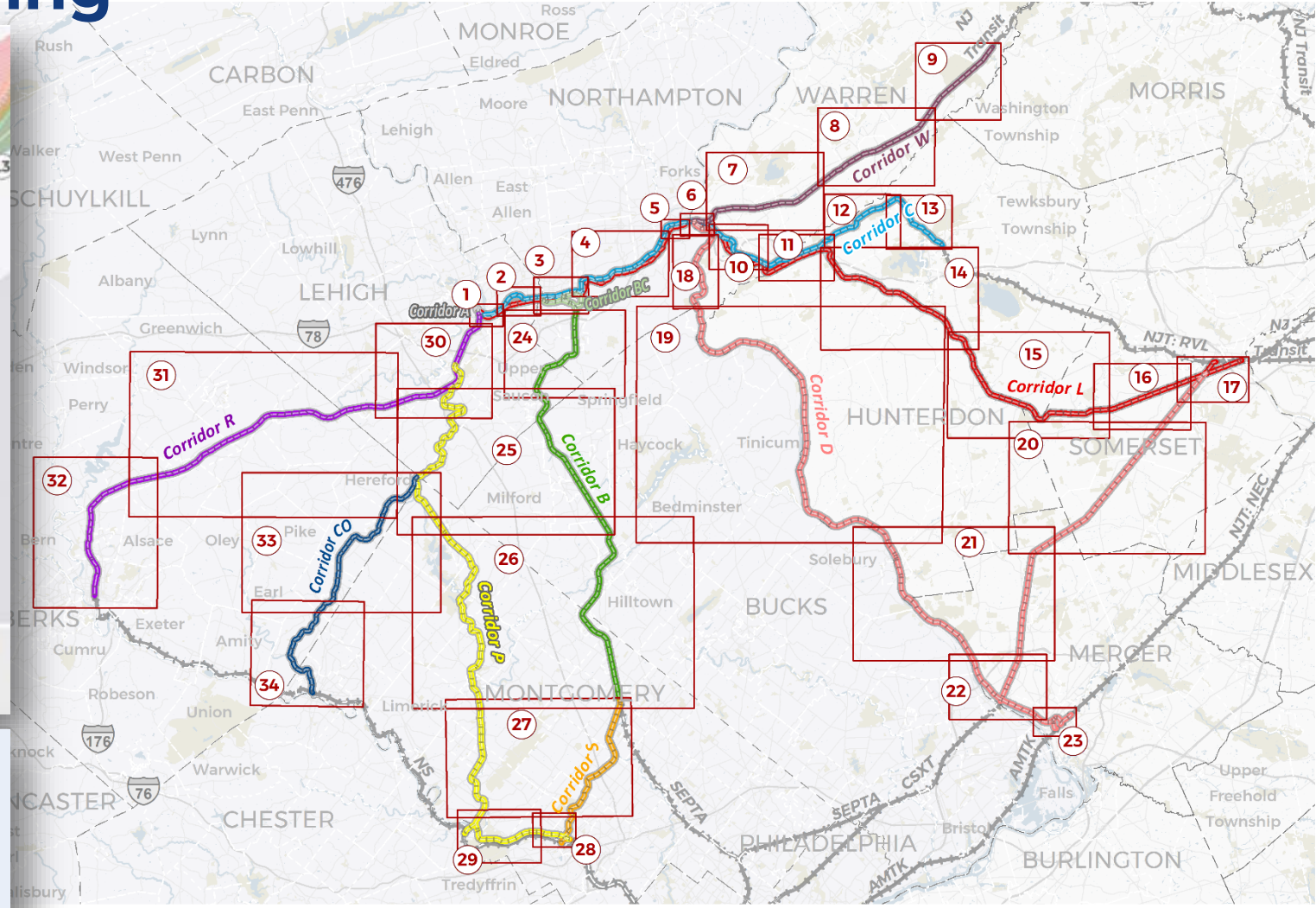
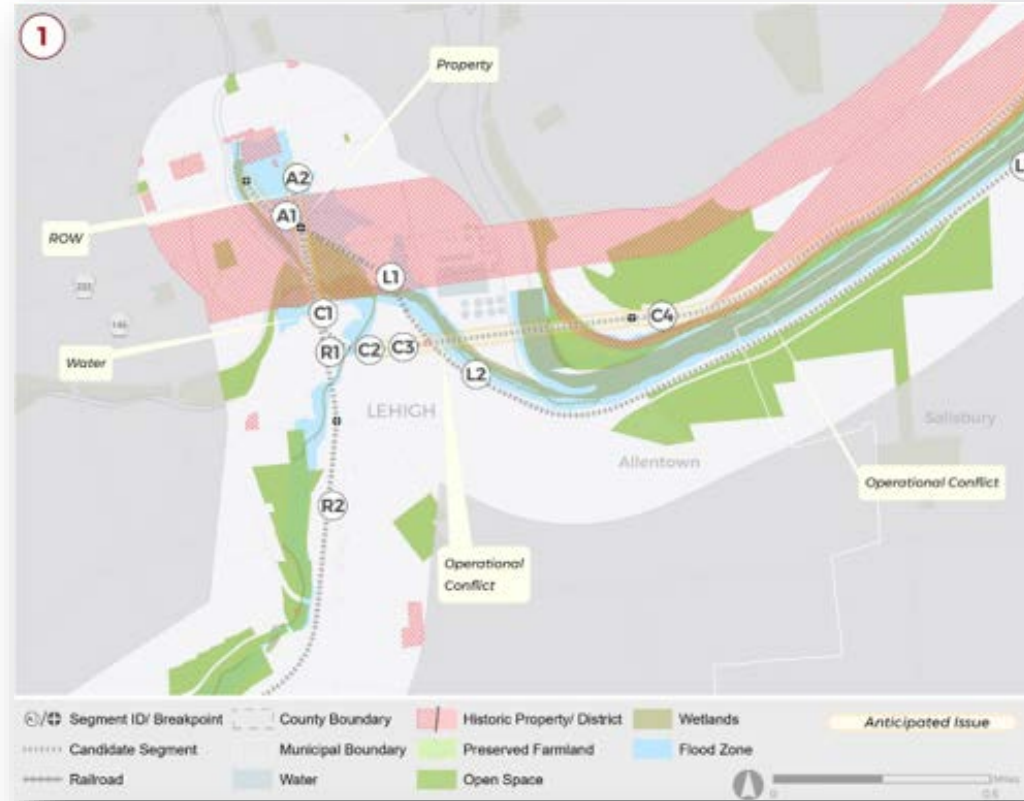





- Reading





# Environmental Screening



	<b>Operational Conflict</b>	Shared use with main line freight rail; slow-speed yard-related traffic
	<b>Property</b>	Alignment for old CNJ Allentown station site
	<b>ROW</b>	Alignment for old LVRR Allentown station site

**Corridor**

A BC CO L R W  
B C D P S

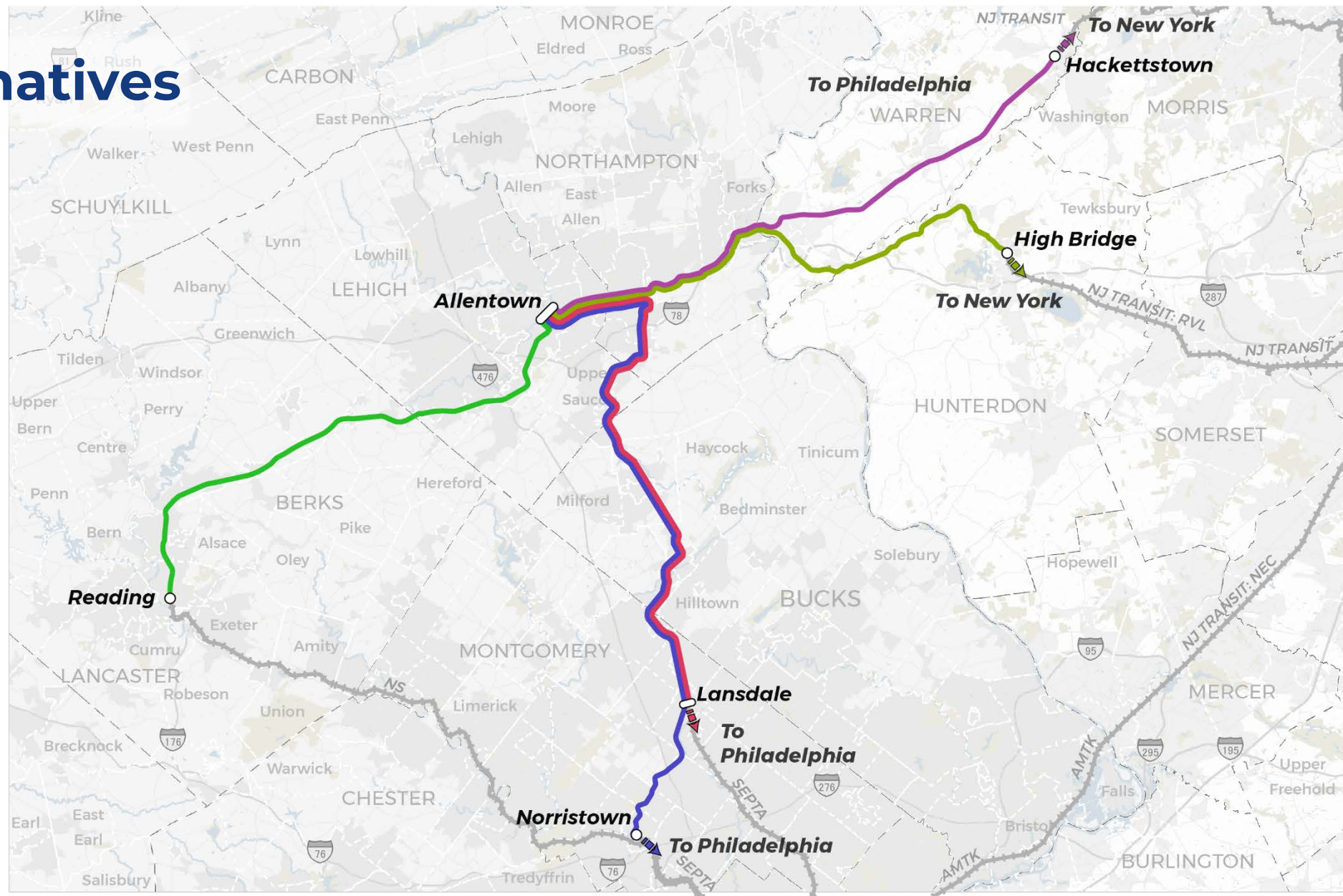
# Map ID

0 2.5 5 10 15 20 Miles



# Service Alternatives

- Allentown to New York **via Hackettstown**
- Allentown to New York **via High Bridge**
- Allentown to Philadelphia **via Lansdale**
- Allentown to Philadelphia **via Norristown**
- Allentown to **Reading**


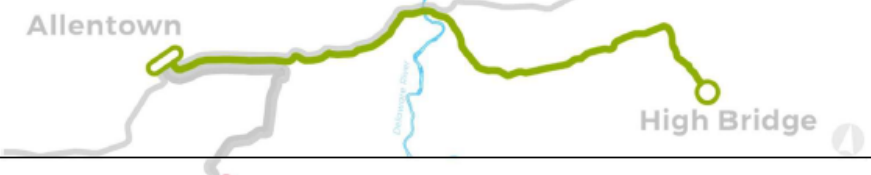
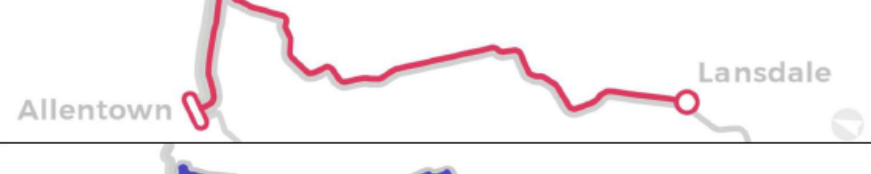




## Service Alternatives

- |                           |                             |
|---------------------------|-----------------------------|
| New York via Hackettstown | Philadelphia via Norristown |
| New York via High Bridge  | Reading                     |
| Philadelphia via Lansdale | Rail Connections            |



# Service Alternatives - Comparison

Market Area Served	Alignment	Estimated Costs (in million \$)			Environmental Constraints	Flagged Constraints	Travel Time
		Capital	Rolling Stock	Operation (Yearly)			
To New York via Hackettstown		\$474,909,110	\$145,018,585	\$23,564,400 – \$28,776,600	<ul style="list-style-type: none"> <li>Historic properties and preserved farmlands are located along the route</li> </ul>	Operations over freight lines	2 hours, 30 mins
To New York via High Bridge		\$469,923,680	\$145,018,585	\$16,471,500 – \$20,114,800	<ul style="list-style-type: none"> <li>Historic properties and preserved farmlands are located along the route</li> <li>Contaminated site along route</li> </ul>	Operations over freight lines	2 hours, 20 mins
To Philadelphia via Lansdale		\$635,811,084	\$102,016,680	\$5,132,200 – \$10,186,900	<ul style="list-style-type: none"> <li>Historic properties are located along the route</li> </ul>	Operations over freight lines, Portions of route have been converted to rail-trail	1 hour, 46 mins
To Philadelphia via Norristown		\$739,026,613	\$102,016,680	\$5,451,200 – \$10,820,000	<ul style="list-style-type: none"> <li>Historic properties are located along the route</li> <li>Contaminated site along route</li> </ul>	Operations over freight lines, Portions of route have been converted to rail-trail	1 hour, 52 mins
To Reading		\$450,325,639	\$102,016,680	\$2,174,700 – \$4,316,500	<ul style="list-style-type: none"> <li>Historic properties and preserved farmlands are located along the route</li> <li>Potential reconstruction of a creek crossing</li> </ul>	Operations over freight lines	46 mins



# Service Alternatives

## Allentown to New York **via** Hackettstown



### Advantages

- Entirely utilizes active rail corridors
- Minimize the need to operate Norfolk Southern by utilizing Dover & Delaware River Railroad
- Class 1 freight rail infrastructure in place over Norfolk Southern segment – passenger service upgrades needed

### Concerns

- High Bridge route is more direct than Hackettstown to New York
- Operations over Norfolk Southern may affect Lehigh Valley and Port of NY/NJ supply chain
- Uncertain surplus capacity on NJT and Amtrak lines east of Hackettstown
- NJ portion adds complexity, requiring careful coordination



Estimated Trip Duration

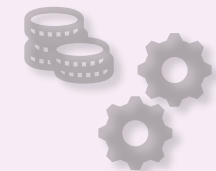
**2:30**



Estimated Capital Costs

**474.9 M**

Rolling Stock: 145.0 M



Estimated Annual Operating Costs

**23.6 – 28.8 M**



# Service Alternatives

## Allentown to New York **via High Bridge**



### Advantages

- Most direct route to New York City from Allentown
- Class 1 freight rail infrastructure largely in place over Norfolk Southern segment – passenger service upgrades needed

### Concerns

- Operations over Norfolk Southern may affect Lehigh Valley and Port of NY/NJ supply chain
- Uncertain surplus capacity on NJT and Amtrak lines east of High Bridge
- NJ portion adds complexity, requiring careful coordination



Estimated Trip Duration

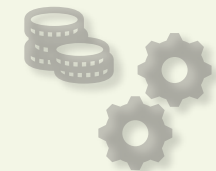
**2:20**



Estimated Capital Costs

**469.9 M**

Rolling Stock: 145.0 M



Estimated Annual Operating Costs

**16.5 – 20.1 M**

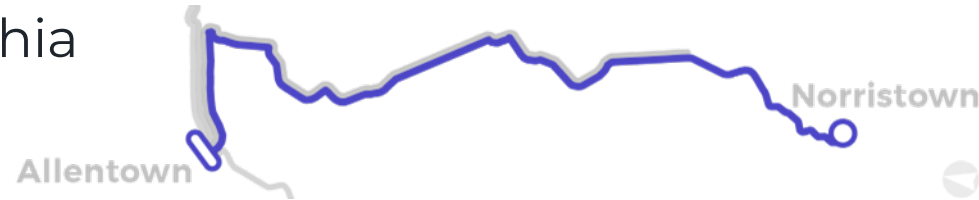






# Service Alternatives

## Allentown to Philadelphia via Norristown



### Advantages

- Can provide a diesel-only route to 30th Street Station in Philadelphia

### Concerns

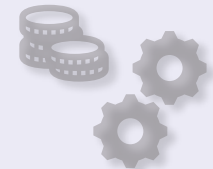
- Operations over Norfolk Southern may affect Lehigh Valley and Port of NY/NJ supply chain
- Unclear optimal routing in Bethlehem
- 12 miles converted to rail trails
- Conflicts with SEPTA Norristown Line



Estimated Trip Duration  
**1:52**



Estimated Capital Costs  
**739.0 M**  
Rolling Stock: 102.0 M



Estimated Annual  
Operating Costs  
**5.5 – 10.8 M**

# Service Alternatives

## Allentown to **Reading**



### Advantages

- Lowest operating costs of all rail alternatives
- Class 1 freight rail infrastructure largely in place – passenger service upgrades needed

### Concerns

- Operations over Norfolk Southern may affect Lehigh Valley and Port of NY/NJ supply chain
- Schuylkill River Passenger Rail Authority rail connection to Philadelphia proposed – no yet certain
- Reading may not have the same travel demand characteristics of New York and Philadelphia



Estimated Trip Duration

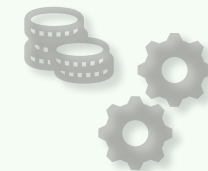
**0:46**



Estimated Capital Costs

**450.3 M**

Rolling Stock: 102.0 M



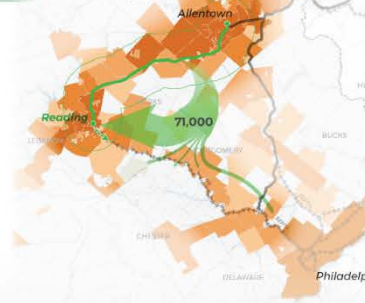
Estimated Annual  
Operating Costs

**2.2 – 4.3 M**

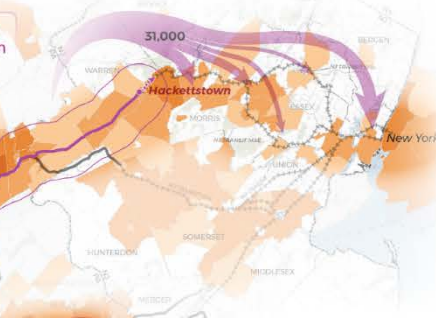


# Potential Ridership Demand

Lehigh Valley to Reading



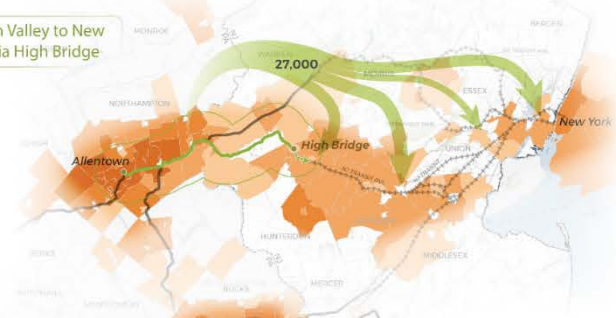
Lehigh Valley to New York via Hackettstown



Lehigh Valley to Philadelphia via Lansdale



Lehigh Valley to New York via High Bridge

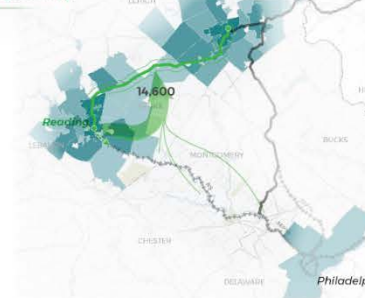


Lehigh Valley to Philadelphia via Norristown

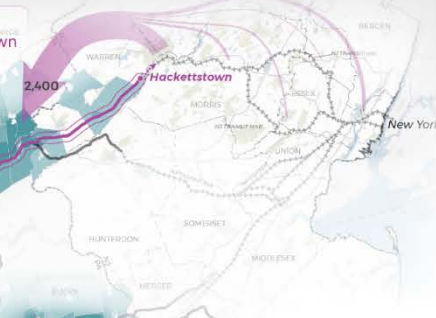


Work Location of People Living within 5 Miles of Alternative

Reading to Lehigh Valley



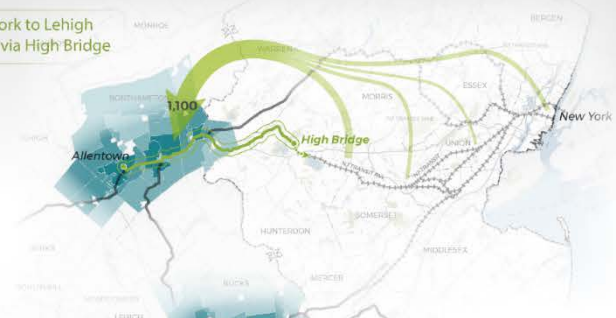
New York to Lehigh Valley via Hackettstown



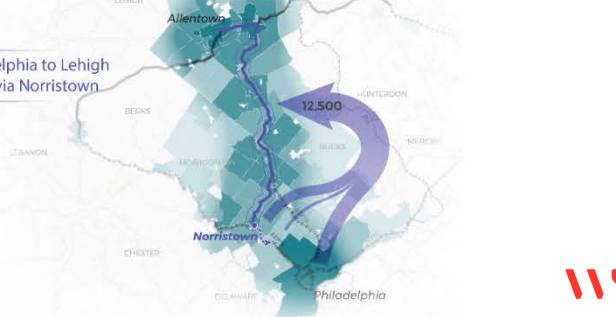
Philadelphia to Lehigh Valley via Lansdale



New York to Lehigh Valley via High Bridge



Philadelphia to Lehigh Valley via Norristown



Home Location of People Working within 1 Mile of Alternative

# Cost Methodology

## Capital Cost

- Planning-level costs to allow for comparative assessment
- Includes infrastructure costs for new track alignments, earthwork, flyovers, and stations
- Includes rolling stock procurement cost
- ROW acquisition would add approximately \$0.5M-\$1M, depending on the service alternative

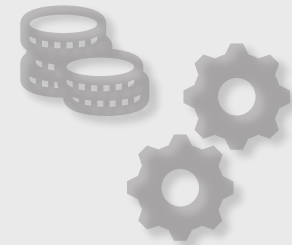




# Cost Methodology

## Operations Cost

- Based on hypothetical, conceptual operating plans
- **Ongoing, annual costs**
- Only includes train-related expenses; does not include the cost of operating and maintaining stations
- No coordination with other rail providers or freight railroads



# Operations, Approvals, and Funding

- **Requirements for service**
  - Identify project sponsor and operator/creation of authority
  - Enter into agreement with freight railroad(s) to allow service in privately-owned ROW
  - Establish model for operations
  - Acquire ROW in locations where corridor is not currently used by or available for rail service
- **Sources of capital and operating funding**



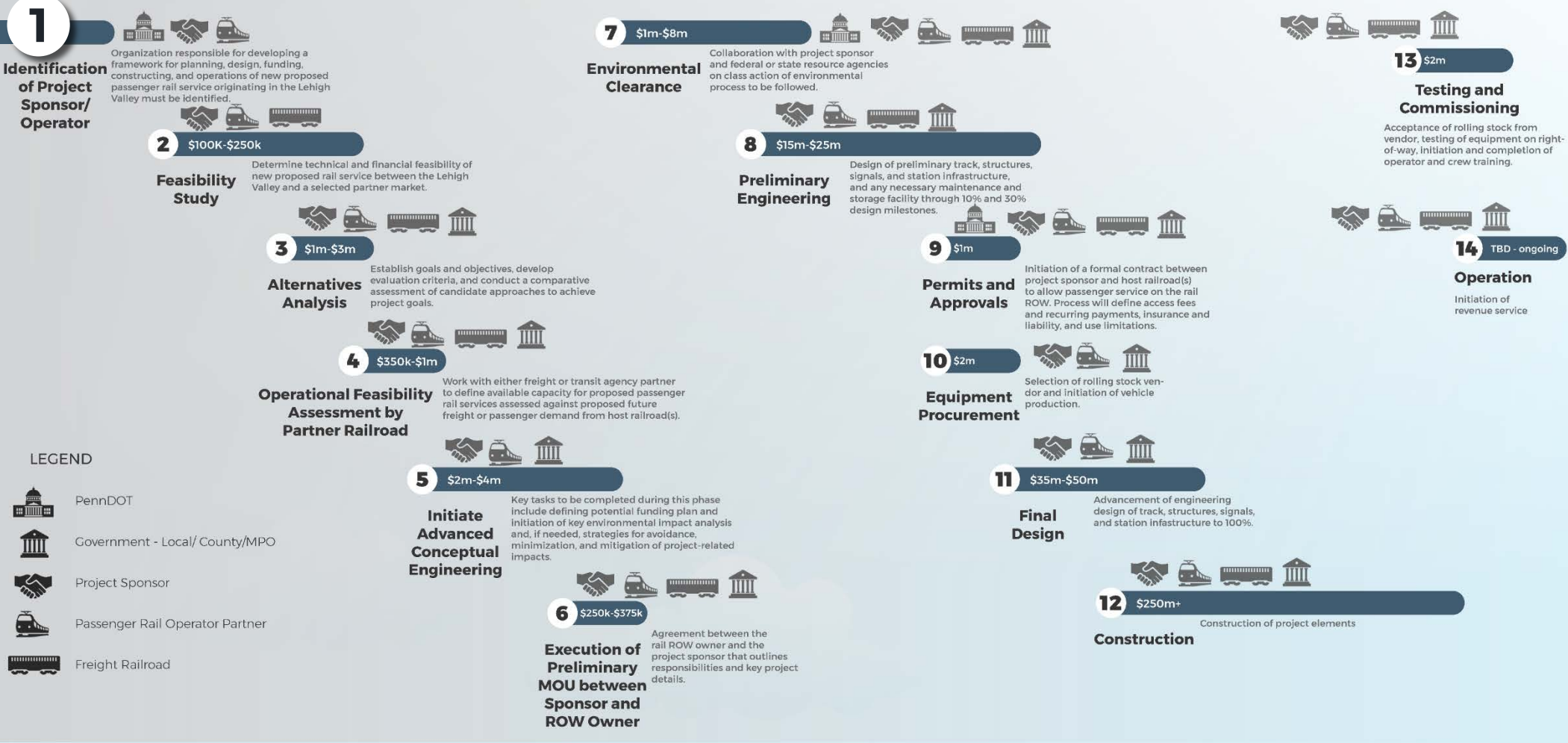
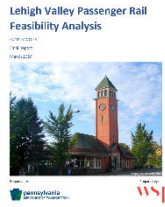
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# Project Development Process



# Lehigh Valley Rail Study

Project Lifecycle 10 to 12 Years 



## LEGEND

-  PennDOT
-  Government - Local/ County/MPO
-  Project Sponsor
-  Passenger Rail Operator Partner
-  Freight Railroad







# DISCUSSION