

Scranton-New York City Intercity Passenger Rail Analysis Infrastructure Assessment

SCRANTON – DELAWARE WATER GAP SECTION



Prepared for:



Amtrak National Network
Planning Department

February 2023

Prepared by:

Jacobs



February 14, 2023

Mr. Timothy Wells, PE
Senior Operations Planning Manager
National Rail Passenger Corporation
1 Massachusetts Avenue NW, Suite 420F
Washington DC 20001-1401

SUBJECT: Scranton-New York City Intercity Passenger Rail Analysis Infrastructure
Assessment: Scranton-Delaware Water Gap Section

Mr. Wells:

Jacobs Engineering is pleased to submit this final report for the above-referenced task order, produced under Amtrak-Jacobs Letter Agreement 415.

It is a new morning in America with respect to federal investment in intercity passenger rail. Amtrak has initiated *Connects US*—a fresh vision that proposes expanding passenger rail service over nearly 39 new corridors, including Scranton-to-New York City.

Wyoming Valley passenger train service was a robust intercity passenger train route until the 1960s, when a combination national and regional trends led to its decline and ultimate demise on January 6, 1970. Today's portion of the Corridor through Pennsylvania is used by short-line freight trains serving local industries and excursion trains from the National Park Service's Steamtown National Historic Site.

Amtrak entered into an agreement with the Pennsylvania Northeast Regional Railroad Authority to assess the current condition of infrastructure (track, structures, signals, and communication) on the Pennsylvania-portion of the Corridor and to estimate the degree of work and costs of improvements needed to support the addition of Amtrak to the current mix of Corridor carriers. The findings of this assessment are presented in the four technical reports contained in this document.

Please call me at with any questions or concerns.

Sincerely,
JACOBS ENGINEERING, INC

A blue ink signature of T. R. Hickey, written in a cursive style.

T. R. Hickey
Project Manager

3070

1

Pocono Mainline Corridor Overview & Design Assumptions





Scranton-New York City Intercity Passenger Rail Analysis Infrastructure Assessment

TECHNICAL REPORT

Prepared for the Amtrak National Network Planning Department

1

CORRIDOR OVERVIEW & DESIGN ASSUMPTIONS

1. BACKGROUND	2
1.1. PHYSICAL CHARACTERISTICS	2
1.2. CURRENT OPERATIONS.....	6
1.2.1. Governance.....	6
1.2.2. Freight Trains	6
1.2.3. Excursion Trains	3
1.3. FUTURE OPERATIONS	3
1.3.1. Amtrak Trains	3
2. DISCUSSION	6
2.1. OPERATIONAL CONFIGURATION	6
2.1.1. Pocono Main Track (Scranton-Slateford Junction)	7
2.1.2. Controlled Sidings (Moscow & East Stroudsburg)	7
2.1.3. Independent Freight Hostling Zones (Scranton Terminal, Summit & Boiler).....	7
2.2. SCRANTON TERMINAL IFHZ	8
2.2.1. Existing Conditions.....	8
2.2.2. Assumed Configuration.....	10
2.2.2.1. Layover Facility.....	12
2.2.2.2. At-Grade Pedestrian Crossings.....	17
2.3. CONTROLLED SIDING MOSCOW.....	21
2.3.1. Existing Conditions.....	22
2.3.2. Assumed Configuration.....	22
2.4. SUMMIT IFHZ.....	23
2.4.1. Existing Conditions.....	23
2.4.2. Assumed Configuration.....	25
2.5. BOILER IFHZ	26
2.5.1. Existing Conditions.....	26
2.5.2. Assumed Configuration.....	26
2.6. CONTROLLED SIDING EAST STROUDSBURG	27
2.6.1. Existing Conditions.....	27
2.6.2. Assumed Configuration.....	28
3. CONCLUSIONS	31
3.1. COST ESTIMATES.....	31
4. EXHIBITS	32



APPENDICES

- APPENDIX 1A Pocono Mainline Schematic (Existing Conditions)
- APPENDIX 1B: Pocono Mainline Schematic (Assumed Improvements)
- APPENDIX 1C Conceptual Scranton Station Plan & Profile
Using Existing Pedestrian Underpass
- APPENDIX 1D Generic Overnight Servicing & Storage Facility Plan
- APPENDIX 1E Genesee Valley Transportation System Time Table No. 5
Delaware-Lackawanna and National Park Service
Special Instruction Pages



Scranton-New York City Intercity Passenger Rail Analysis Infrastructure Assessment

TECHNICAL REPORT

Prepared for the Amtrak National Network Planning Department

1

CORRIDOR OVERVIEW & DESIGN ASSUMPTIONS

Amtrak engaged the Jacobs Engineering Group, Inc., to assess just over 60 route miles of rail line owned by the Pennsylvania Northeast Regional Railroad Authority (PNRRA), a joint regional authority of Monroe and Lackawanna Counties, between Scranton and the Delaware Water Gap for its suitability for intercity passenger train operations. The purpose of the infrastructure assessment is to provide cost estimates for economically bringing the line up to FRA Track Class 3 or 4 condition where geometry permits based upon existing records supplemented with field sampling and investigation.

The assessment is primarily comprised of three technical reports organized by engineering discipline:

TRACK AND ASSOCIATED INFRASTRUCTURE ASSETS

An inventory in a technical report format of track assets accompanied by an evaluation as to their present suitability to support passenger train operations and the degree of work necessary to make them passenger train ready including estimated costs for design and construction.

STRUCTURES

An inventory in a technical report format of structural assets, such as railroad bridge spans, culverts, railroad-owned overhead structures, tunnels, and other items that may emerge in scoping the route, accompanied by an evaluation of their present suitability to support passenger train operations the degree of work necessary to remediate major deficiencies and make them passenger train-ready including estimated costs for design and construction.

SIGNALS AND COMMUNICATIONS

An inventory in a technical report format of signal and communications assets including highway warning devices, accompanied by an evaluation as to their present suitability to support passenger train operations and the degree of work necessary to make them passenger train ready including estimated costs for design and construction.

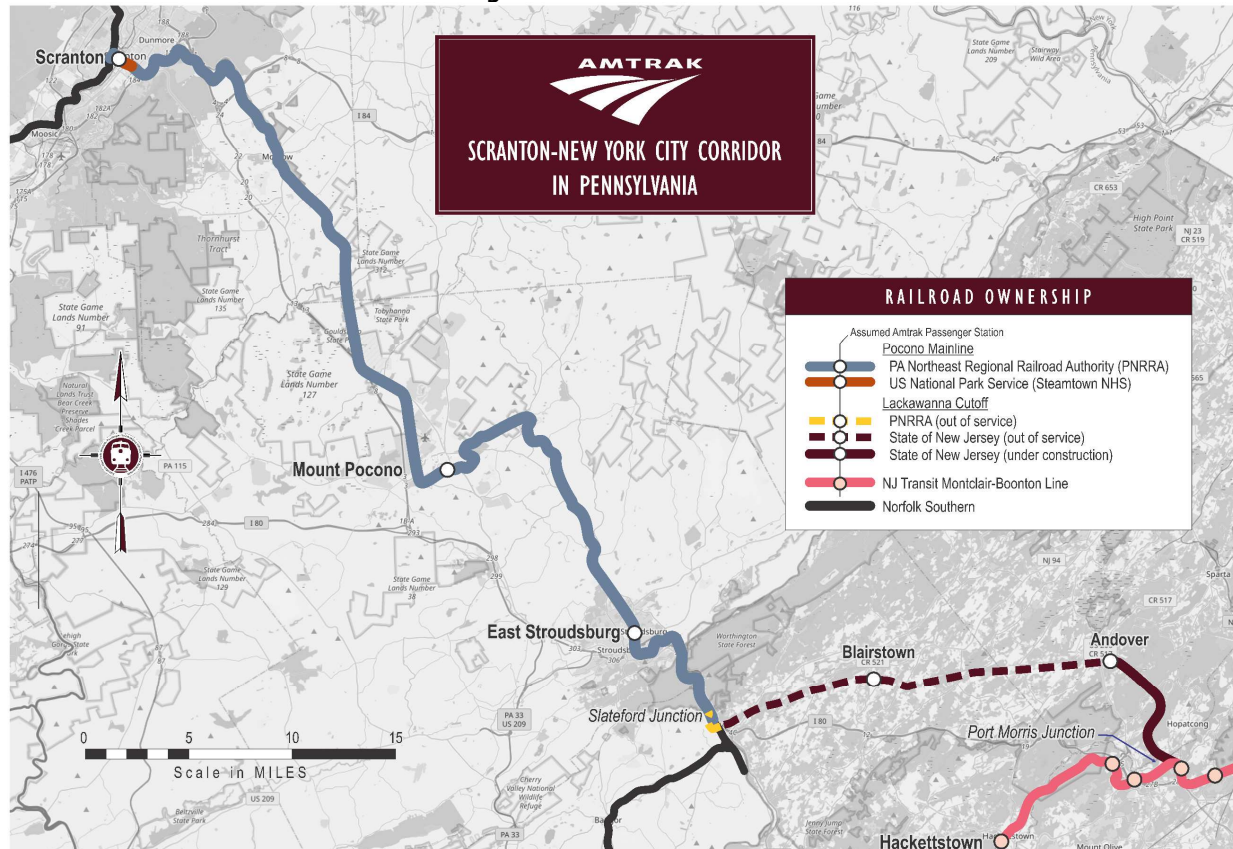
The three technical reports are supplemented by this fourth introductory report presenting a corridor overview summarizing existing conditions, operational assumptions, assumed design criteria for engineering, and consolidated summary of cost estimates applicable to all three disciplines.



1. BACKGROUND

This technical report presents an overview of existing conditions for the Pennsylvania portion of the former Delaware, Lackawanna & Western Railroad main line between Scranton and Slateford Junction at the Delaware River —referred to hereinafter as the “Pocono Mainline” (see Figure 1-1). It also documents assumptions made regarding future operations and changes to the physical plant anticipated as a prelude to estimating the scope and costs of infrastructural improvements to upgrade the corridor for intercity passenger rail.

Figure 1-1. Pocono Mainline



1.1. Physical Characteristics

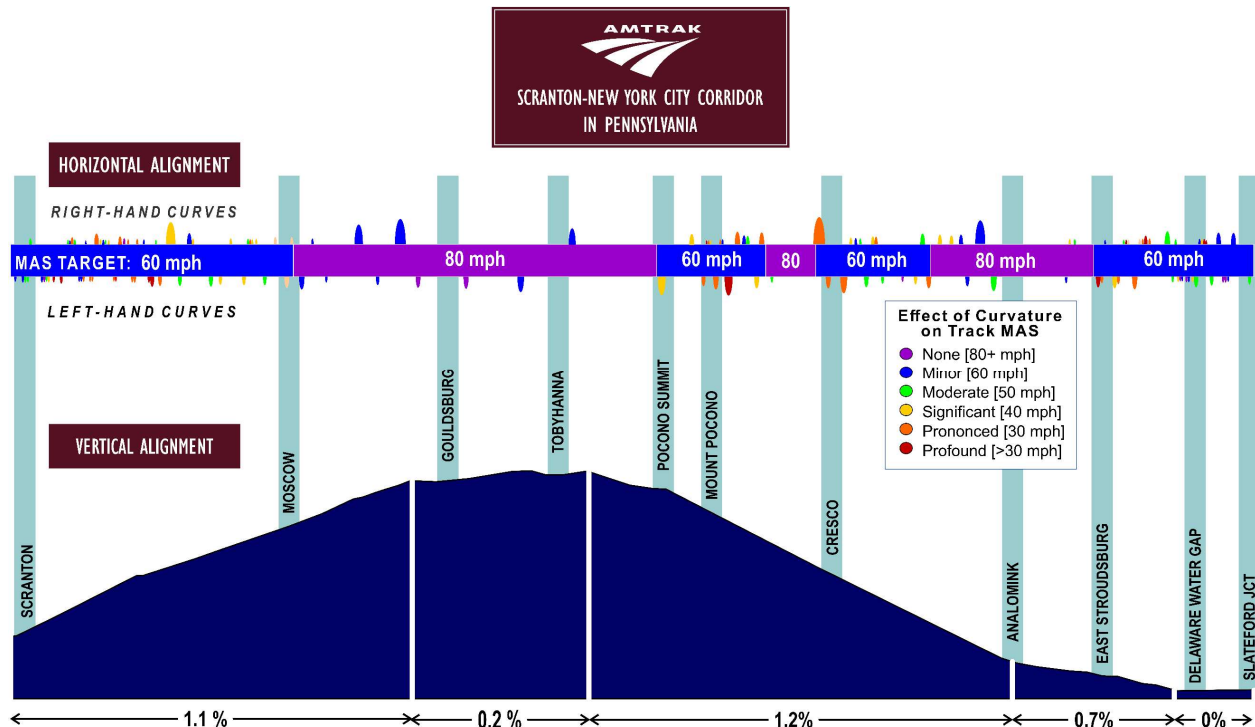
The Pocono Mainline winds its way 60.25 miles through Pennsylvania between connections with the Norfolk Southern Railway (NS) Sunbury Line in Scranton and the NS Stroudsburg Portland Secondary Track at Slateford Junction near the Delaware River. The alignment describes a twisting, single-track path through mountainous terrain with 130 demarcated curves between its two end points (2.2 curves per mile) with an average curvature of 4.2° and a maximum curvature of 8.8° . It is also a steeply graded alignment with a sustained 1.1% average ascending grade from Scranton to Gouldsboro, followed by a sustained 1.2% average descending grade from Tobyhanna to Analomink, west of East Stroudsburg (see Figure 1-2).

The Pocono Mainline consists of two components:

1. Pocono Main Line Track, which runs 57.7 miles from NAY AUG (Milepost (MP) 131.45) on the outskirts of Scranton to SLATE (MP 73.75); and



Figure 1-2. Pocono Mainline Physical Characteristics



2. Scranton Running Track, which runs 2.55 miles within Scranton between NAY AUG and BLOOM (MP 133.90) and HYDE PARK (MP 134.00)—two legs of a wye connecting the Pocono Mainline to the NS Sunbury Line.

The majority of the Pocono Mainline is owned by the PNRRA with about a mile in Scranton owned by the United States National Park Service (NPS) as part of its Steamtown National Historic Site (NHS). The PNRRA owns from the SCRANTON block station marker (MP 132.75) east to the end of track at the SLATE block station marker (MP 73.75) and from the Cliff Street undergrade bridge (MP 133.76) west to connections with NS at BLOOM and HYDE PARK.

Track on the Pocono Mainline is maintained to standards consistent with FRA Track Class 2, which permits a maximum authorized speed (MAS) of 30 mph for passenger trains / 25 mph for freight. The current MAS limits on the Pocono Mainline are:

<u>Pocono Main Track</u>	DISTANCE	FREIGHT	PASSENGER
NAY AUG and SUMMIT	28.92 miles.....	25 MPH	30 MPH
SUMMIT and GAP	26.50 miles.....	25 MPH	25 MPH
GAP and SLATE	2.25 miles.....	10 MPH	10 MPH
<u>Scranton Running Track</u>			
BLOOM/HYDE PARK	2.55 miles.....	10 MPH	10 MPH
and NAY AUG			

Amtrak aspires for higher passenger speeds, however, shown as “MAS Target” in Figure 1-2.

The Pocono Mainline is a “dark railroad” with no existing train control signaling. It has 23 at-grade crossings (six of which are pedestrian-only crossings), most of which are protected with active flashing lights, bells and gates.



SCRANTON-NEW YORK CITY INTERCITY PASSENGER RAIL ANALYSIS INFRASTRUCTURE ASSESSMENT

CORRIDOR OVERVIEW & DESIGN ASSUMPTIONS



Table 1-1
POCONO MAINLINE
TABLE OF PHYSICAL CHARACTERISTICS
Part 1 of 2

Name	Location	Notes	Passenger Active	Passenger Former	Passenger Proposed	Block Station	Switch/Crossover	OH Bridge	UG Bridge	Ped Xing	Hwy Xing	Tunnel	Operating Rules in Effect	Height above sea level	Average Grade (Westbound)	Targeted Maximum Speeds †
HYDE PARK	MP134.00	Connection to NS														
BLOOM	MP133.90	Connection to NS														
DIAMOND	MP133.82	Strawberry Hill RT														
Proposed Speed Change	MP133.80													744		
CLIFF ST	MP133.76															
DIVIDER	MP133.75															
DEPOT WEST	MP133.73															
SCRANTON (PROPOSED)	MP133.73	Intermodal Center													-0.58%	
BOARDWALK	MP133.70															
NPS DEPOT/ELECTRIC CITY TROLLEY	MP133.64															
DEPOT EAST	MP133.54															
WASHINGTON ST	MP133.37															
EAST MALL	MP133.32															
CEDAR ST	MP133.27															
WEST RECEIVER	MP133.19															
WEST STATION	MP133.18															
RADISSON HOTEL	MP133.17															
EAST STATION	MP133.10															
BIDEN EXPRESSWAY	MP133.00															
WEST UNIVERSITY	MP132.85															
WEST HAT	MP132.80															
SCRANTON	MP132.75															
EAST UNIVERSITY	MP132.63															
EAST HAT	MP132.62															
EAST RECEIVER CROSSOVER	MP132.55															
RIDGE	MP133.50															
HARRISON AV																
ROARING BROOK	MP131.88															
WEST PORTAL	MP131.73															
NAY AUG TUNNEL	MP131.66															
EAST PORTAL	MP131.58															
NAY AUG	MP131.45															
MYRTLE ST	MP131.35															
ASH ST	MP131.12															
ROARING BROOK	MP130.89															
ROARING BROOK	MP130.78															
INTERSTATE 81	MP130.65															
MILL ST	MP130.62															
ROARING BROOK	MP130.21															
ERIE RR	MP128.85															
WINTON	MP127.75															
INTERSTATE 84	MP127.67															
ERIE RR	MP127.50															
COBBS	MP126.60															
INTERSTATE 84	MP124.50															
PA ROUTE 435	MP123.49															
FREIGHT HOUSE	MP120.90															
MOSCOW	MP120.80															
MOSCOW	MP120.55															
MARKET ST	MP120.47															
DALE	MP120.37															
Proposed Speed Change	MP118.60															
JUBILEE RD	MP117.85															
LEHIGH RD	MP114.92															
LARSEN LAKE	MP113.51															
GOULDSBORO	MP112.87															
ARMY	MP109.85	Switch OOS														
MIDDAY DR / HAP ARNOLD BLVD	MP108.35															
WEST TOBY	MP108.00															
TOBYHANNA																
EAST TOBY	MP107.61															
PA ROUTE 423 / CHURCH ST																
TOBY	MP107.49															
MILL ST / LAKESIDE DR	MP107.44															

† Height above sea level in feet per 1960 Erie-Lackawanna Scranton Division Track Chart

‡ Targeted maximum authorized speed (MAS) suggested by Amtrak in RFP.

X



SCRANTON-NEW YORK CITY INTERCITY PASSENGER RAIL ANALYSIS INFRASTRUCTURE ASSESSMENT

CORRIDOR OVERVIEW & DESIGN ASSUMPTIONS



Table 1-1 (continued)
POCONO MAINLINE
TABLE OF PHYSICAL CHARACTERISTICS
Part 2 of 2

Name	Location	Notes	Passenger Active	Passenger Former	Passenger Proposed	Block Station	Switch/Crossover	OH Bridge	UG Bridge	Ped Xing	Hwy Xing	Tunnel	Operating Rules in Effect	Height above sea level†	Average Grade (Westbound)	Targeted Maximum Speeds ‡
MILL ST / LAKESIDE DR	MP107.44													1968	-0.06%	
TOBYHANNA CREEK	MP107.38															
LAUREL DR	MP107.05													1961		
PA ROUTE 611 / MEMORIAL BLVD	MP106.26															
MONADNOCK	MP103.45														-0.40%	60 MPH MAS
HAWKEY RUN	MP102.90															
CRAMER	MP102.71															
POCONO SUMMIT	MP102.59															
SUMMIT AV	MP102.54													1882	-1.53%	
SUMMIT	MP102.50															
PA ROUTE 940	MP102.28															
WEST RAMP	MP101.60															
MILL CROSSOVER	MP101.60															
EAST RAMP	MP101.30															
FAIRVIEW AV	MP101.07															
MOUNT POCONO (PROPOSED)	MP101.45	Propert Set-Aside														
MILL	MP101.00															
Proposed Speed Change	MP100.80															
MOUNT POCONO	MP100.30															
PA ROUTE 611	MP100.25															
PA ROUTE 611	MP98.46															
DEVILS HOLE RD	MP97.37															
PARADISE STUB	MP97.00															
Proposed Speed Change	MP96.80															
Proposed Speed Change	MP94.80															
PA ROUTE 390	MP94.62															
CRESCO	MP94.58															
BESTWAY	MP94.15															
HENRY'S CROSSING RD	MP92.27															
BROWNS HILL RD	MP90.17															
Proposed Speed Change	MP88.80															
PA ROUTE 191 / PARADISE VALLEY RD	MP86.10															
ANA	MP85.00															
PA ROUTE 191 / N 5TH ST	MP84.71															
GRAVEL WEST END	MP83.85															
GRAVEL EAST END	MP83.30															
MILL CREEK RD	MP83.21															
GRAVEL	MP83.00															
BOILER SIDING	MP82.44															
COURTLAND ST	MP82.32															
BURSON ST	MP82.15															
BROAD ST	MP81.93															
HUGHES	MP81.85	Switch OOS														
ANALOMINK ST	MP81.66															
EAST STROUDSBURG	MP81.56															
BRIDGE ST / RIDGEWAY ST	MP81.72															
INTERSTATE 80	MP81.00															
Proposed Speed Change	MP80.90															
FORGE ST	MP80.70															
INTERSTATE 80																
BELL'S BRIDGE / BROADHEAD CREEK	MP78.77															
WESTTROC SWITCH																
RIVER RD	MP77.83															
CHERRY CREEK	MP77.50															
DELAWARE WATER GAP	MP77.17															
INTERSTATE 80	MP77.07															
GAP	MP76.00															
CHUCK	MP74.49															
SLATEFORD WEST																
SLATEFORD EAST	MP74.19															
PRIVATE RD	MP74.06															
DECKER FERRY RD	MP73.95															
SLATE	MP73.75	Connection to NS												317	0.00%	60 MPH MAS

† Height above sea level in feet per 1960 Erie-Lackawanna Scranton Division Track Chart

‡ Targeted maximum authorized speed (MAS) suggested by Amtrak in RFP.



1.2. Current Operations

1.2.1. Governance

All train movements over the Pocono Mainline are dispatched from Bridge 60 Tower in Scranton (see Figure 1-3) by the Delaware-Lackawanna Railroad Company, Inc. (D-L), a subsidiary of the Genesee Valley Transportation Company (GVT). The Northeast Operating Rules Advisory Committee (NORAC) rulebook is in effect of the Pocono Mainline using:

- Rule 98 (*Movement on a Running Track*) between SLATE (MP 73.75) and GAP (MP 76.00);
- Form D Control System (DCS) rules between GAP and NAY AUG (MP 131.45); and
- Rule 97 (*Movement on a Track Not Governed by ABS, DCS, or Interlocking Rules*) between NAY AUG and the connections with NS at BLOOM (MP 133.90) and HYDE PARK (MP 134.00).

These limits are illustrated in Appendix 1A (*Pocono Mainline Schematic—Existing Conditions*).



Figure 1-3. Bridge 60 Tower.

1.2.2. Freight Trains

D-L operates freight service over the Pocono Mainline between Scranton and the mountainous region to the east. It has a diverse customer base encompassing grain, plastics, lumber, propane, and food commodities. D-L connects to NS at both ends but interchanges traffic at Taylor Yard on the NS Sunbury Line at the Scranton end of the line due to more favorable uphill grades for loaded cars traveling in the eastbound direction.

There is no regular service over the easternmost six miles of Pocono Mainline between the RockTenn siding and Slateford Junction as there are neither customers along that segment of the rail corridor nor regular interchange with NS at Slateford Junction.

With continued reliance on the west-end interchange and an anticipated overall growth in traffic, the track between Scranton and Mount Pocono is expected to see significantly more cumulative ton-miles in the foreseeable future than the track east of Mount Pocono.

Traffic. The majority of D-L traffic is wheat in covered hopper cars bound for delivery to the Ardent Mills at Mount Pocono (MP 102.28). It also regularly provides manifest freight service to following customers:

- | | |
|---------------------------------------|--|
| ▪ Keystone Propane (MP 107.61) | ▪ Royal Chemical (MP 83.85) |
| ▪ Monadnock (MP 103.45) | ▪ Morgan Advanced Materials (MP 83.30) |
| ▪ Trevdan Building Supply (MP 102.28) | ▪ RockTenn (MP 79.79) |
| ▪ Bestway Lumber (MP 94.15) | |



D-L moves 10,000 carloads per year and as many as 1,100 carloads per month—a 25-fold increase over the 400 carloads carried in 1985 at the start of public ownership. This present volume is equivalent to as many as 52 carloads per day in a peak month and an average of 32 carloads per day. Each car moves loaded inbound and empty outbound, so total daily and annual number of car movements are twice these numbers.

Movement. D-L typically operates freight trains up to six days per week over the Pocono Mainline as well as the Laurel Line, Carbondale Line, and several industrial tracks. Reflecting customer requirements, freight is predominately a daylight operation, starting around 8 AM in Scranton on operating days. D-L operates over the Pocono Mainline at least three days per week to Mount Pocono and Cresco, with service extending further on to Gravel Place and East Stroudsburg on two of those days per week, which is assumed will remain the practice after the advent of Amtrak service.

The Ardent Mills at Mount Pocono have a daily production capacity of 18,000 hundredweight of flour, which is 900 tons or the equivalent of 12-13 cars of wheat grain consumed per day. The Mills are currently operating at about 85% capacity, generating just over 3,600 carloads per year. This volume translates to roughly 70 carloads per week or about 24 carloads per day with triweekly operation.

All of the other Pocono Mainline customers combined amount to somewhat under half this number in terms of carloads. Outside of the Mills and a few other shippers adjacent to them between MP 101 to MP 103 in Mount Pocono, the remaining Pocono Mainline shippers are clustered in four discrete areas:

- Scranton Terminal (MP 131 to 134 and adjacent portions of the Carbondale and Laurel Lines);
- Tobyhanna (MP 107);
- Cresco (MP 94); and
- Gravel Place (MP 78 to MP 84).

In most of these areas, customers are shifted directly from the Pocono Main Track. This practice effectively ties up the Main Track while D-L is hostling cars, denying its use by other through train movements. A notable exception is Gravel Place in Stroud Township, where customers are typically shifted from the Gravel Siding using the parallel Main Track as a running track.

It is assumed that following the introduction of Amtrak service, freight will continue servicing customers in this manner as a daylight operation. Furthermore, market trends suggest continued growth in the volume of freight traffic for the foreseeable future. It is necessary to reconfigure operating procedures and infrastructure in the Corridor in ways that will keep freight movements transparent to Amtrak's and vice versa.

Yards. D-L does not have dedicated yard infrastructure. Instead, loaded cars arriving from NS and awaiting delivery to customers and returning empties awaiting interchange are scattered across spurs, sidings and secondary tracks, wherever capacity is available. Between the Scranton Terminal area and Tobyhanna, often used locations include portions of the Mall Siding (2,100 feet), the Steamtown and Scranton Running Tracks (2,100 and 5,800 feet, respectively), the Hat Track (950 feet), and sidings at Winton (4,800 feet), Moscow (1,600 feet), and Tobyhanna (1,681 feet), as well as on adjacent portions of the Laurel and Carbondale Lines (see the Appendix 1A for the location of these tracks).

If additional storage capacity is needed, there is also approximately 3,000 feet of graded roadbed that could be converted into yard tracks east of Gouldsboro near MP 112 and another 1,500 feet near Tobyhanna west



of MP 108. In Gravel Place north of East Stroudsburg, there is a 5,700-foot out-of-service siding and numerous sidings to support customer switching, as there are at Pocono Summit. All siding switches are hand-thrown Number 10 turnouts. The sidings are protected with derails in the direction of the downhill grade.

The new line configuration must support existing freight interchange operations, car classification, and daytime customer freight switching and freight volumes without impacting Amtrak operations, suggesting a less laissez faire approach to yard and car management.

1.2.3. Excursion Trains

Steamtown currently operates four three-mile round trip excursion train movements on weekends over the western end of the line as far as the East University at-grade crossing. Ten additional round-trips over the Pocono Mainline are also carried on its 2022 excursion train operating schedule, with turnbacks at Gouldsboro, Tobyhanna, Cresco, East Stroudsburg, and the Delaware Water Gap.

Note that Steamtown's excursion schedule was significantly affected in recent years by the COVID-19 pandemic. Its 2022 schedule may not be representative of excursion train operations in future years.

1.3. Future Operations

It is assumed for design purposes that D-L freight operations and Steamtown excursion train service will remain unchanged after the implementation of Amtrak service in the corridor.

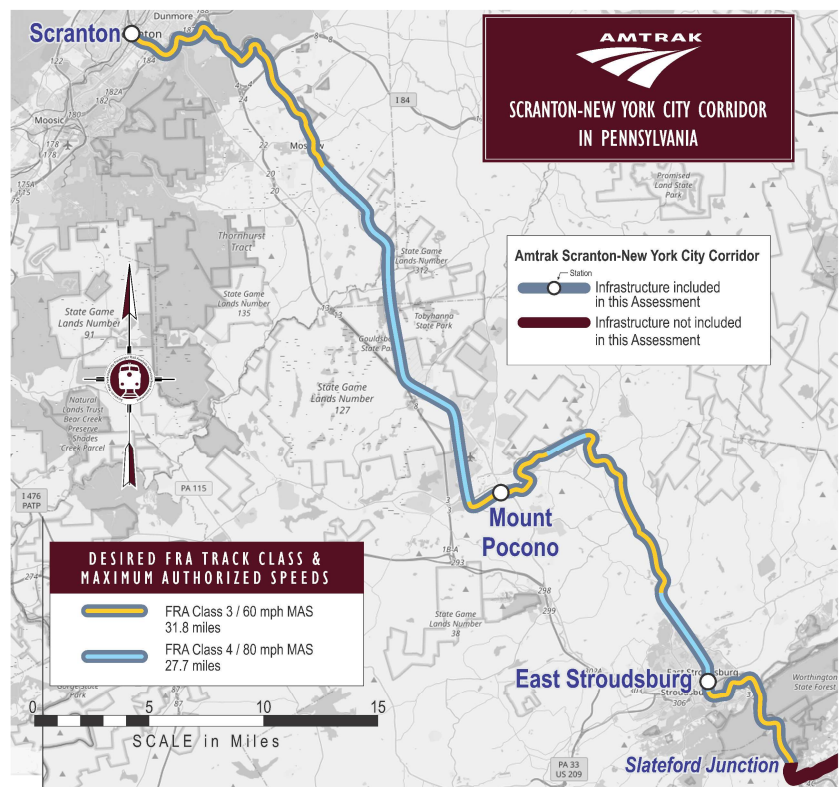
1.3.1. Amtrak Trains

Amtrak provided a draft operating plan¹ to guide design of infrastructure and upgrades, reflecting its aspirations for the Scranton service. Key elements of the plan are as follows:

Stations. Three ADA-accessible station stops are presently planned at Scranton, Mount Pocono, and East Stroudsburg.

Service Plans: The plan included four draft schedule options for the

Figure 1-4. Proposed Track Speed Upgrades



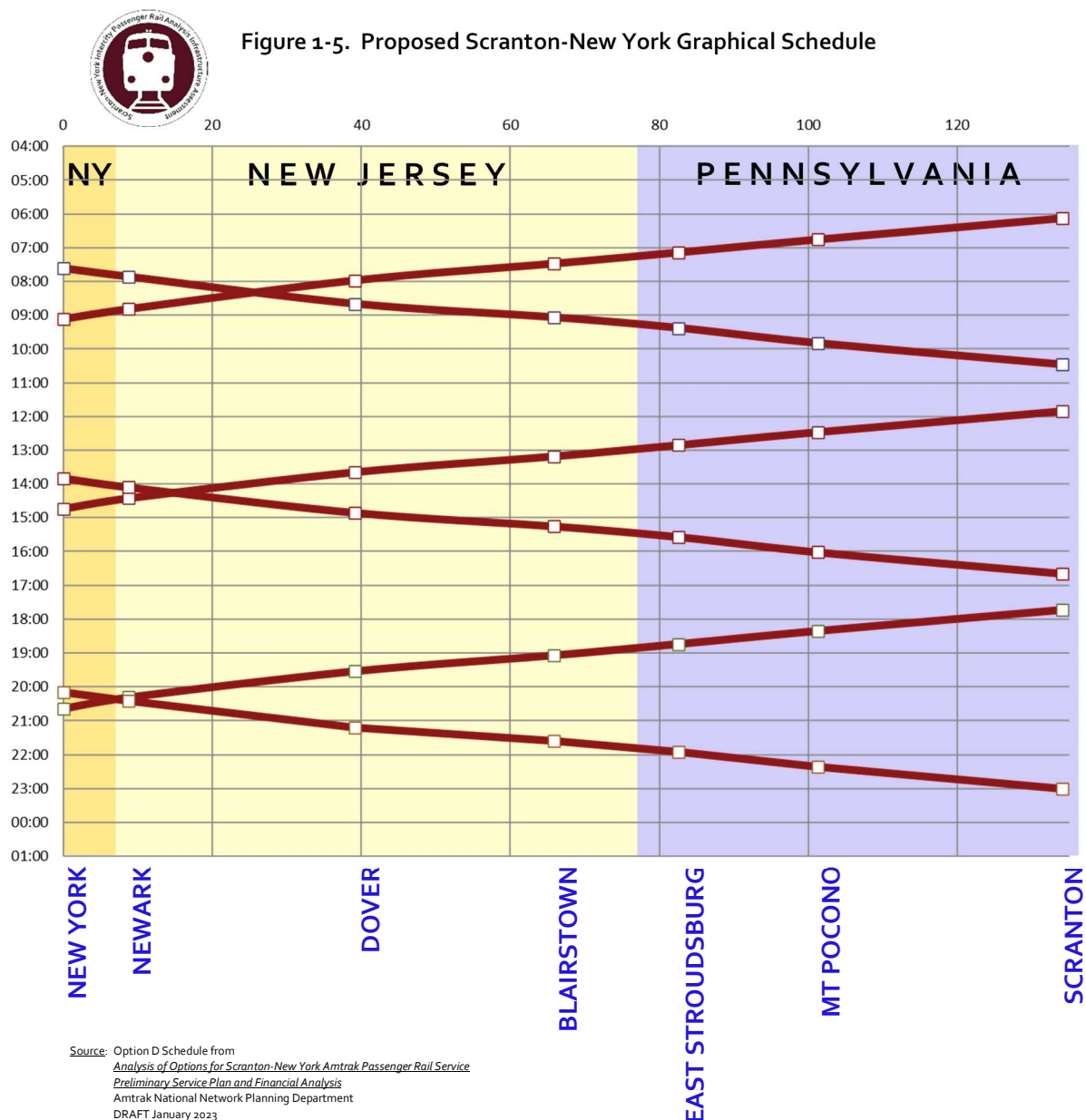
¹ *Analysis of Options for Scranton-New York Amtrak Passenger Rail Service: Preliminary Service Plan and Financial Analysis* by Amtrak National Network Planning Department; DRAFT January 2023



new Scranton service showing three daily roundtrips. The calculated New York- Scranton) run times averaged 2 hours, 54 minutes outbound and 2 hours, 50 minutes inbound.

Track Speeds. In order to achieve plan’s calculated running times, Amtrak proposes upgrading the track to Class 3 and 4 condition (for 60 and 80 mph MAS, respectively) where grades and curvature permit. Figure 1-4 illustrates the portions of the Pocono Mainline where Amtrak believed a higher MAS may be achievable

Passing Tracks The Amtrak operating plan included four draft schedule options for the new Scranton service showing three daily roundtrips. Opposing Amtrak movements are scheduled to meet in NJ Transit multiple-track territory well east of Blairstown NJ, so only one Amtrak train should be on the Pennsylvania portion of the rail corridor at a time. One of the four draft schedules (Option D) is graphically represented in the form of a time-distance diagram (“Stringline”) in Figure 1-5.





The stringlines illustrate the large windows between successive Amtrak movements during which D-L and NPS can transit over the Pocono Mainline. It suggests that the Amtrak service can absorb nearly two hours of delay in Scranton departure times before affecting outbound trains and the meeting point shifts into single-track territory in Pennsylvania.

Nevertheless, additional double-tracked controlled sidings are recommended for resiliency by relieving potential conflicts between Amtrak and unscheduled excursion and freight trains sharing the single-track Pocono Mainline. The controlled sidings give dispatchers a tool to defuse operating conflicts and prevent in cascading delays in Amtrak, D-L freight, and NPS excursion services.

Pocono Mainline tracks and operations should be configured to minimize disruptive interactions while optimizing freight service and excursion train operations to be responsive to customer needs, even when Amtrak trains are present.

Rolling Stock. For design purposes, it is assumed that new Amtrak Intercity Trainset (ICT) dual-powered (diesel and electric power) trainsets (expected to be branded as “*Airo*”) will be assigned to Scranton-NYC service. The ICT trainsets will be equipped for bidirectional push-pull operation, so there will be no routine need to turn trainsets at Scranton, although access to a wye or turning loop is advisable for unusual situations. Each passenger car will be equipped with an onboard wheelchair lifts for low-level platforms.

The *Airo* trainsets in Scranton service are planned to consist of one ALC-44 “Charger” locomotive and six passenger carrying cars in their Type-B1 NEC configuration (see Figure 1-6). Amtrak recommended basing infrastructure design on the longer Type-B2 NEC configuration, however, to accommodate future growth.

Service may be initiated using legacy fleet equipment (e.g.: Amfleet) if *Airo* trainsets are not available. Amtrak currently lacks dual-powered motive power (required for entry into New York Penn Station), so the initial trainset would require some combination of electric and diesel-electric locomotives, a non-powered control unit, or dual-mode locomotives leased from another carrier. Figure 1-6 illustrates that legacy fleet trainsets would fit on infrastructure designed for Type B2 NEC configuration trainsets.

Figure 1-6. Prospective *Airo* Intercity Trainsets for Scranton Service

B1

DUAL-POWERED CATENARY-ELECTRIC INTERCITY TRAINSET (SIX PASSENGER CARS)

1 COACH CLASS CAB CAR - 3 COACH CLASS CARS - 1 FOOD SERVICE/ COACH CLASS CAR - 1 AUXILIARY POWER VEHICLE (APV)/BUSINESS CLASS CAR - 1 ALC-44 CHARGER LOCOMOTIVE
582-FOOT CONSIST (360 FEET BETWEEN DOORS)



B2

DUAL-POWERED CATENARY-ELECTRIC INTERCITY TRAINSET (EIGHT PASSENGER CARS)

1 COACH CLASS CAB CAR - 5 COACH CLASS CARS - 1 FOOD SERVICE/COACH CLASS CAR - 1 AUXILIARY POWER VEHICLE (APV)/BUSINESS CLASS CAR - 1 ALC-44 CHARGER LOCOMOTIVE
752-FOOT CONSIST (530 FEET BETWEEN DOORS)



INTERIM AMFLEET TRAINSET (SIX PASSENGER CARS)

1 P32AC-DM LOCOMOTIVE - 4 AMFLEET COACH CLASS CARS - 1 AMCAFÉ/COACH CLASS CAR - 1 AMFLEET BUSINESS CLASS CAR - 1 NON-POWERED CONTROL UNIT
638-FOOT CONSIST (510 FEET BETWEEN DOORS)





The trainsets assigned to Scranton service would be primarily maintained at existing Amtrak maintenance facilities at Sunnyside Yard or elsewhere along the Northeast Corridor. However, one trainset would overnight at a layover facility in Scranton where it will be cleaned and serviced by an Amtrak contractor.

2. DISCUSSION

Recommendations for infrastructure improvements specific to track, structures, and signals are discussed in technical reports accompanying this initial report. Detailed operating plans and designs for stations, platforms, and maintenance facilities are beyond the scope of this assessment, so assumptions to substantially mitigate Amtrak, D-L, and NPS conflicts were made for the design and cost estimates of track, structures, and signals requirements. This section describes those assumptions with details in the appendices.

2.1. Operational Configuration

The new Pocono Mainline configuration must safely and efficiently accommodate the existing volume of D-L freight interchange operations, car classification, and daytime customer freight switching volumes as well as anticipated NPS movements without impacting Amtrak operations.

Upon review of the combined operating requirements of Amtrak, D-L, and the NPS, the Pocono Mainline tracks and operations were separated into three separate elements, as illustrated geographically in Figure 1-7 or schematically in Figure 1-8.

Figure 1-7. Assumed Pocono Mainline Operating Configuration

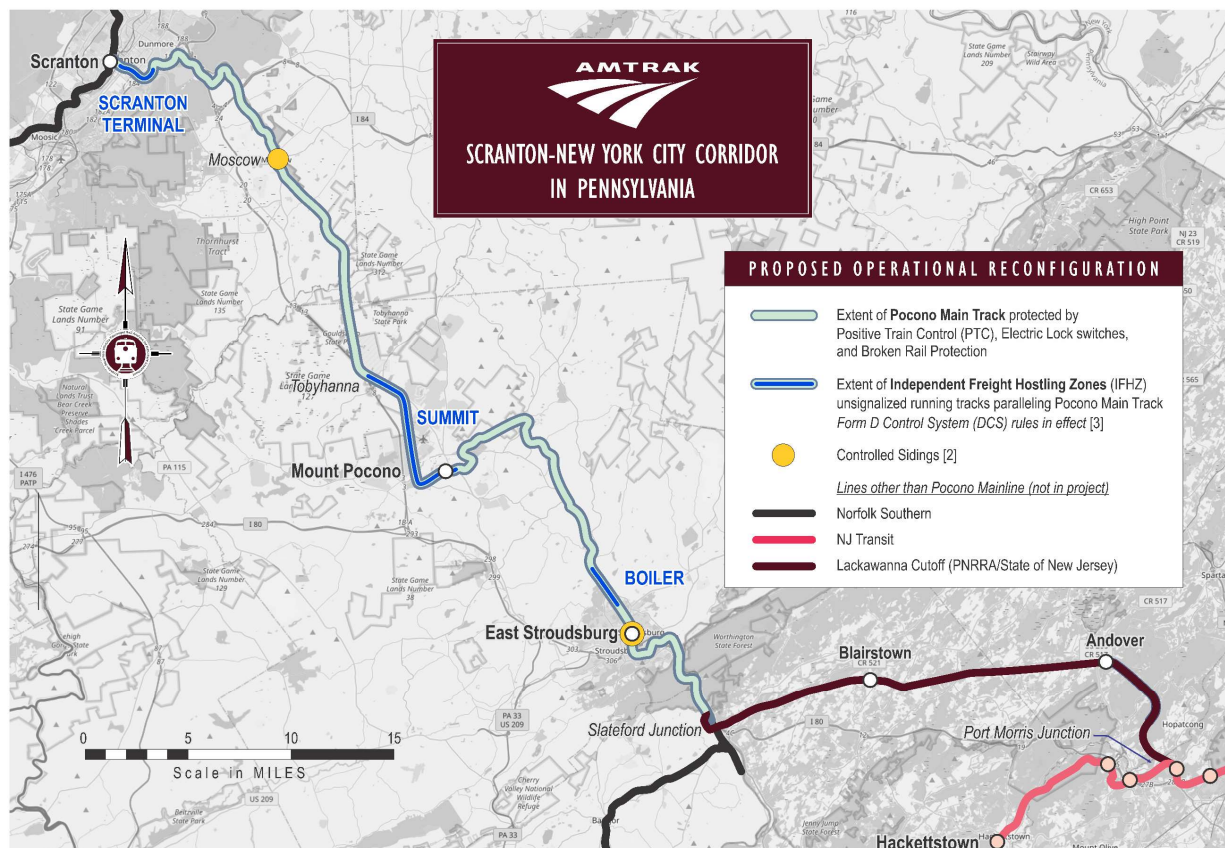
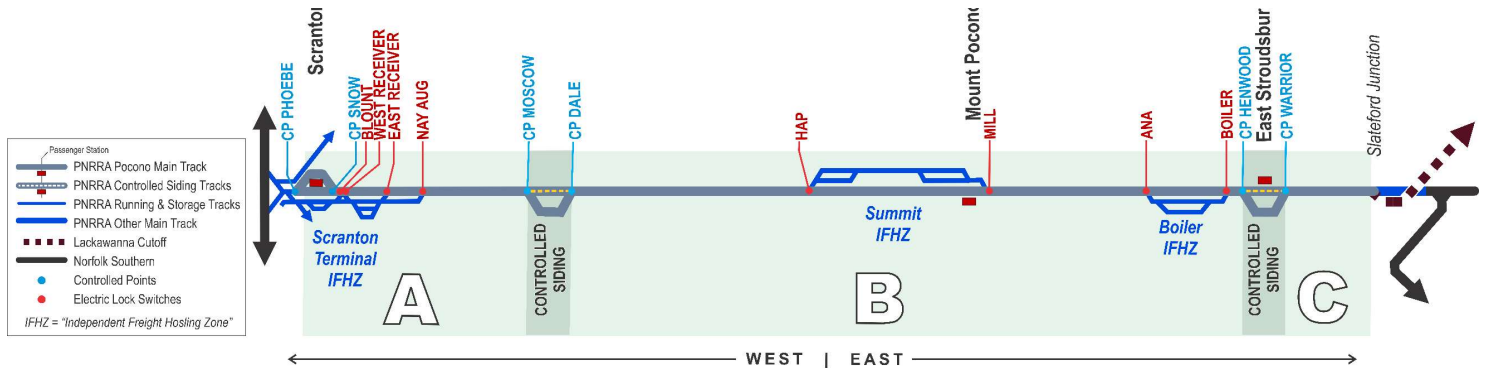




Figure 1-8. Assumed Pocono Mainline Operational Configuration Schematic



2.1.1. Pocono Main Track (Scranton-Slateford Junction)

Upgrade one track between Scranton and Slateford Junction designated as the *Pocono Main Track* for priority use by Amtrak but available for use by D-L and NPS when Amtrak is not present. The main track will be improved to condition consistent with FRA Class 3 or 4 standards for higher speed operation and signalized with Positive Train Control (PTC) and Automatic Block Signals (ABS).

2.1.2. Controlled Sidings (Moscow & East Stroudsburg)

The Pocono Main Track is separable into three absolute positive blocks (designated "A", "B" & "C" in schematic Figure 1-10) by signal-controlled sidings at Moscow and East Stroudsburg. This will facilitate the uninterrupted operation of Amtrak and D-L freight trains on parts of the Pocono Main Track in the event of a special movement over the Pocono Mainline of historic rolling stock that is not equipped with PTC.

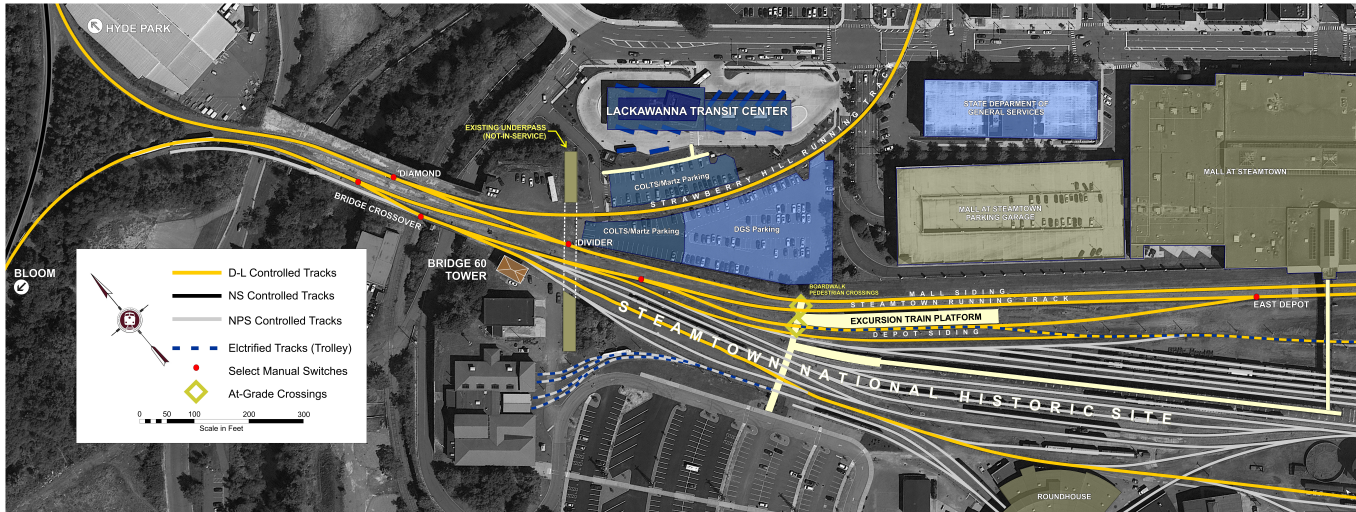
2.1.3. Independent Freight Hostling Zones (Scranton Terminal, Summit & Boiler)

An Independent Freight Hostling Zone (IFHZ) is an assembly of running, storage and other tracks in areas of concentrated shipper activity set apart from the main track by electric-locked switches on timers. These zones coincide with the areas wherein customers are clustered. Behind the protection of electric-locked switches, D-L can freely service and shift shippers within a zone under Rule 97 without interaction or interference with Amtrak movements on the main track.

Three IFHZs were assumed for the Pocono Mainline:

1. Scranton Terminal, a 2.55-mile zone in Scranton extending from the connection with the NS Sunbury Line at BLOOM and HYDE PARK to NAY AUG;
2. Summit, a 7.75-mile zone encompassing Tobyhanna and Mount Pocono extending from Hap (MP 108.75) to MILL (MP 101.0); and
3. Boiler, a 2.56-mile zone north of East Stroudsburg extending from ANA (MP 85.0) to Boiler East (MP 82.44).

Figure 1-9. Existing Conditions: Scranton Terminal IFHZ (West End)



2.2. Scranton Terminal IFHZ

Scranton Terminal IFHZ is a complex and concentrated arrangement of D-L and NPS railroad facilities located at the western end of the Pocono Mainline. Adjacent land uses include commercial office and retail spaces associated with Downtown Scranton and institutional activities associated with the Commonwealth of Pennsylvania, University of Scranton and the NPS Steamtown National Historic Site. As the western terminal for the Scranton-New York Corridor, the Zone is also the likeliest location for at least one trainset to lay up overnight.

2.2.1. Existing Conditions

Figure 1-9 illustrates the current arrangement of physical characteristics of the Scranton Terminal IFHZ west of South Washington Street, which includes:


- The Lackawanna Transit Center (LTC)
(see Figure 1-10);
 - Bridge 60 Tower (D-L Dispatch Office);
(see Figure 1-2)
 - The connection between the Pocono Mainline and the NS Sunbury Line (BLOOM & HYDE PARK);
 - The connection between the Pocono Mainline and the Strawberry Hill Running Track;
 - An unused pedestrian underpass beneath the Pocono Mainline adjacent to Bridge 60 Tower, which can provide ADA access to the Amtrak platform without the cost of elevators (see Figure 1-11).
- 

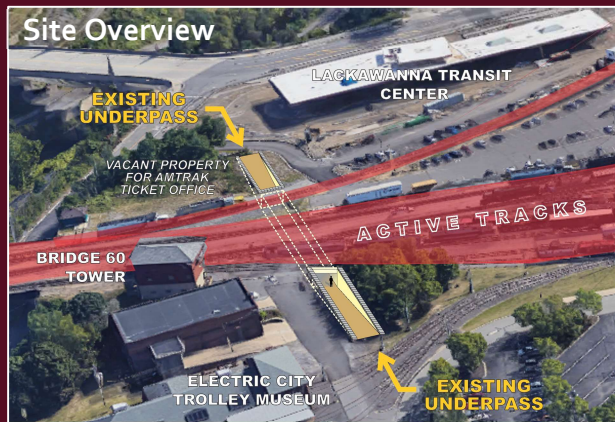
Figure 1-10. Lackawanna Transit Center



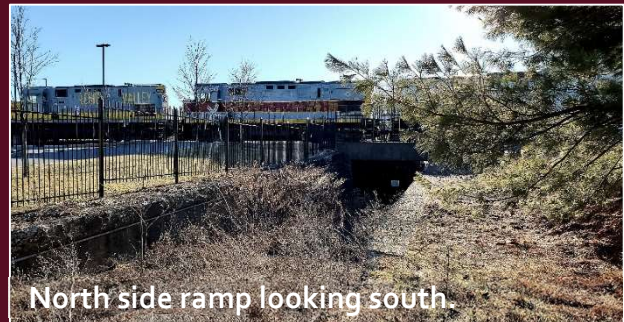
The Scranton Terminal IFHZ also contains five at-grade pedestrian crossings and one at-grade highway crossing.



Figure 1-11. Images of the Scranton Terminal Pedestrian Underpass



A former pedestrian underpass at MP 133.75 is adjacent to Bridge 60 Tower. It is a concrete box 10 feet high by 19-feet wide and 160 feet long, passing safely beneath multiple active tracks. The underpass and its ramps are in excellent condition but not in service.



North side ramp looking south.



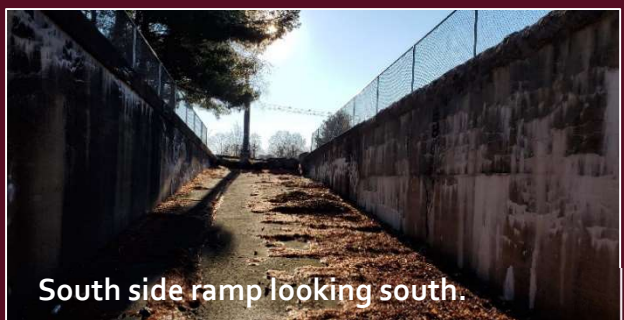
South side ramp looking north with Bridge 60 Tower.



Underpass interior looking north.



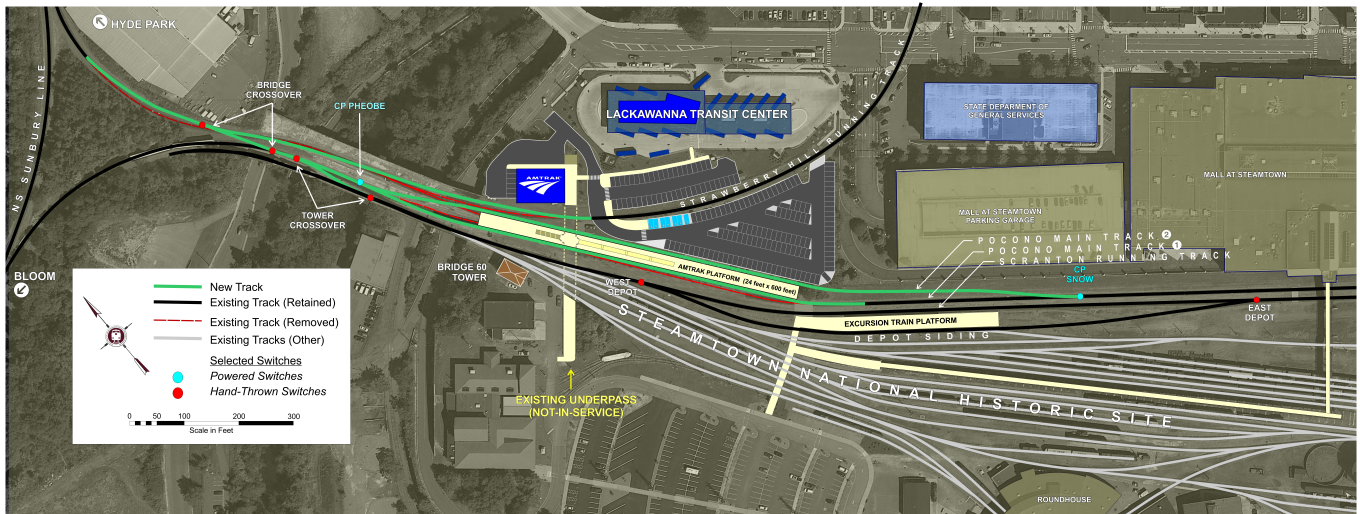
Underpass interior looking south.



South side ramp looking south.



Figure 1-12. Assumed Configuration: Scranton Terminal IFHZ (West End)



2.2.2. Assumed Configuration

Figure 1-12 illustrates assumptions made about the arrangement and massing of infrastructure changes needed in the Scranton Terminal IFHZ east of South Washington Avenue in order to accommodate Amtrak Scranton service along with D-L and NPS in this area. Figure 1-12A illustrates similar assumptions made about the Zone east of the Biden Expressway. Assumptions made for design purposes that would affect

Figure 1-12A. Assumed Configuration: Scranton Terminal IFHZ (East End)

