

# Table of Contents

1. Overview: The Role of Rail in Statewide Transportation .....	1-1
1.1 Pennsylvania’s Goals for a Multimodal Transportation System.....	1-2
1.2 The Role of Rail Transportation in Pennsylvania.....	1-11
1.2.1 Freight Rail .....	1-12
1.2.2 Passenger Rail .....	1-14
1.3 State Governance Structure for Rail in Pennsylvania .....	1-15
1.3.1 State Agencies.....	1-15
1.3.2 Local Passenger Commuter Rail Agencies .....	1-17
1.3.3 Metropolitan Planning Organizations.....	1-18
1.3.4 Rural Planning Organizations.....	1-20
1.3.5 Regional Rail Authorities .....	1-21
1.3.6 Ports .....	1-21
1.4 Description of State’s Authority for Grant, Loan, and Public Private Partnership Funding .....	1-21
1.4.1 Pennsylvania Rail Freight Preservation and Improvement Act.....	1-23
1.4.2 The Pennsylvania Infrastructure Bank (PIB) .....	1-23
1.4.3 Public Private Partnerships .....	1-23
1.4.4 Federal Funding .....	1-23
1.5 Summary of Existing Network and Plans .....	1-24
1.5.1 Existing Network.....	1-24
1.5.2 Freight Rail .....	1-26
1.6 Current Studies.....	1-26
1.6.1 Northeast Corridor .....	1-26
1.6.2 Keystone East Corridor .....	1-28
1.6.3 Keystone West Corridor .....	1-29
1.6.4 PA On-Track .....	1-29
2. The State’s Existing Rail System.....	2-1
2.1 Description and Inventory.....	2-1
2.1.1 Passenger and Freight Rail Systems .....	2-1
2.1.1.1 Passenger Rail .....	2-1
2.1.1.2 SEPTA Overview .....	2-12
2.1.1.3 Freight Rail Network Inventory .....	2-38
2.1.1.4 Freight Traffic Profile .....	2-54

Cover Photo Credits (from top to bottom):

Buffalo & Pittsburgh Railroad, Inc. 2012; Steamtown NPS; PennDOT, Wheeling and Lake Erie Railway; PennDOT, Dillerville East Yard 2013; PennDOT



2.1.1.5 Non-Operating Railroads.....	2-64
2.1.1.6 Holding Companies .....	2-65
2.1.1.7 Rail Authorities .....	2-66
2.1.1.8 Tourist Railroads.....	2-67
2.1.1.9 Inactive Lines, Rail Banking, Rails to Trails, and Rails-With-Trails Projects .....	2-67
2.1.2 Intermodal Connections: Freight and Passenger Terminals.....	2-70
2.1.2.1 Seaports .....	2-72
2.1.2.2 Airports .....	2-76
2.1.2.3 Multimodal Freight Facilities.....	2-78
2.1.2.4 Major Passenger Stations .....	2-82
2.1.3 Passenger Rail Service Objectives .....	2-82
2.1.3.1 Amtrak Intercity Passenger Rail Service Objectives .....	2-83
2.1.3.2 SEPTA Commuter Rail Service Objectives .....	2-84
2.1.4 Performance Evaluation of Intercity Passenger Services.....	2-85
2.1.4.1 Amtrak .....	2-85
2.1.5 Public Financing for State Rail Projects and Services.....	2-94
2.1.5.1 Federal Grant Sources .....	2-94
2.1.5.2 Federal Lending Assistance and Credit Programs.....	2-101
2.1.5.3 State Funding Sources.....	2-101
2.1.6 Safety and Security .....	2-105
2.1.6.1 Safety and Security Oversight and Mandates.....	2-105
2.1.6.2 Crash Statistics .....	2-107
2.1.6.3 Safety and Security Programs and Projects.....	2-113
2.1.7 Economic and Environmental Impacts .....	2-122
2.1.7.1 Congestion Mitigation.....	2-122
2.1.7.2 Trade and Economic Development .....	2-122
2.1.7.3 Energy Use and Air Quality .....	2-123
2.1.7.4 Noise .....	2-123
2.1.7.5 Land Use .....	2-124
2.1.7.6 State Rail Plan Progress .....	2-125
2.2 Trends And Forecasts.....	2-127
2.2.1 Demographic and Growth Factors.....	2-127
2.2.1.1 Population .....	2-127
2.2.1.2 Employment .....	2-131

2.2.1.3 Personal Income and Poverty Levels.....	2-135
2.2.2 Freight Rail Demand and Growth .....	2-136
2.2.2.1 Projected Freight Rail Movements .....	2-136
2.2.2.2 Intermodal Market Trends .....	2-139
2.2.2.3 Energy Extraction Activities .....	2-142
2.2.3 Passenger Rail Demand and Growth .....	2-150
2.2.3.1 Amtrak .....	2-150
2.2.3.2 SEPTA.....	2-151
2.2.4 Fuel Cost Trends .....	2-152
2.2.5 Rail Congestion Trends .....	2-153
2.2.6 Highway and Airport Congestion Trends .....	2-154
2.2.6.1 Highways.....	2-154
2.2.6.2 Airports .....	2-154
2.2.7 Land Use Trends .....	2-155
2.3 Rail Service Needs And Opportunities .....	2-156
2.3.1 Safety Evaluation and Improvement Opportunities .....	2-156
2.3.2 Freight System Issues .....	2-158
2.3.3 Passenger System Issues .....	2-160
2.3.4 Technology Improvements / Advancements .....	2-160
2.3.5 Land Use Policy.....	2-163
2.3.5.1 Current Conditions .....	2-163
2.3.5.2 Policy Needs .....	2-164
2.3.6 Station Design Standards.....	2-164
2.3.7 Funding Rail Improvements.....	2-171
3. Proposed Passenger Rail Improvements and Investments.....	3-1
3.1 Amtrak .....	3-2
3.1.1 Keystone Corridor.....	3-2
3.1.2 Northeast Corridor .....	3-5
3.1.2.1 Northeast Corridor Five Year Plan.....	3-5
3.1.2.2 NEC FUTURE .....	3-6
3.1.3 Capitol Limited .....	3-9
3.2 SEPTA.....	3-9
3.3 Vision Projects.....	3-12
3.4 Potential Operating Subsidies and Sources .....	3-14
3.5 Conclusion.....	3-14



4. Proposed Freight Rail Improvements and Investments.....	4-1
4.1 Freight Corridors .....	4-2
4.2 Freight Projects Criteria.....	4-4
4.3 Freight Projects by Corridor.....	4-5
4.3.1 Crescent Corridor .....	4-7
4.3.2 Main Line Corridor .....	4-9
4.3.3 Southwest Corridor .....	4-11
4.3.4 Southeast Corridor .....	4-13
4.3.5 Erie Corridor .....	4-15
4.4 Projects Outside Key Freight Corridors.....	4-16
4.4.1 Class II and Class III/Short Lines Improvements.....	4-16
4.5 Freight Projects Summary .....	4-18
4.6 Freight Multi-Modal Connectivity .....	4-18
4.7 Conclusion.....	4-20
5. Pennsylvania’s Rail Service and Investment Program.....	5-1
5.1 Vision.....	5-3
5.2 Program Coordination .....	5-4
5.3 Rail Agencies.....	5-6
5.4 Program Effects.....	5-6
5.5 Passenger Element.....	5-12
5.5.1 Passenger Rail Investment.....	5-12
5.5.1.1 Short-Term Passenger Rail Capital Projects (2015-2019) .....	5-16
5.5.1.2 Long-Term Passenger Rail Capital Projects (2020-2040).....	5-19
5.5.1.3 Livability.....	5-20
5.5.2 Passenger Rail Capital Financing Plan .....	5-21
5.5.3 Operating Financing Plan .....	5-23
5.5.4 Economic Benefits .....	5-24
5.6 Freight Element .....	5-26
5.6.1 Freight Element Implementation Plan .....	5-26
5.6.1.1 Background and Methodology.....	5-27
5.6.1.2 Freight Rail Capital Projects Summary (2015-2040).....	5-28
5.6.1.3 Short-Term Freight Rail Capital Projects .....	5-29
5.6.1.4 Long-Term Freight Rail Capital Projects.....	5-31
5.6.2 Freight Element Financing Plan .....	5-31

5.6.2.1 Background and Available State Funding Sources .....	5-31
5.6.2.2 Short-Term Capital Project Funding Needs (2015-2019) .....	5-34
5.6.2.3 Long-Term Freight Rail Capital Project Funding Needs (2020-2040) .....	5-34
5.6.2.4 Short-Term Freight Rail Capital Project Financing Plan (2015-2019) .....	5-36
5.6.2.5 Long-Term Freight Rail Capital Project Financing Plan (2020-2040) .....	5-38
5.6.3 Freight Rail Public and Private Economic Benefits .....	5-38
5.7 Rail Studies and Reports .....	5-39
5.7.1 Passenger Rail Vision Projects .....	5-40
5.7.2 Freight Rail Vision Projects .....	5-45
5.7.3 Funding Passenger and Freight Rail Vision Projects .....	5-47
5.8 Passenger and Freight Rail Capital Program .....	5-49
6. Coordination and Review .....	6-1
6.1 Public Participation Approach .....	6-1
6.2 Coordination with Neighboring States .....	6-2
6.3 Stakeholder Involvement in the Development of the State Rail Plan .....	6-3
6.4 Open Houses .....	6-5
6.5 Project Website .....	6-10
6.6 Topics of Concern Identified During the Rail Plan Process .....	6-11
6.7 Consideration and Incorporation of Stakeholder and Public Input .....	6-12
6.8 State Rail Planning Coordination .....	6-12
Appendix A: Existing (2013) and Projected (2040) Rail Commodity Movements in PA .....	A-1
Appendix B: Pennsylvania Demographics (2000-2040) .....	B-1
Appendix C: Proposed Passenger Rail Projects (2015-2040) .....	C-1
Appendix D: Proposed Freight Rail Projects (2015-2040) .....	D-1
Appendix E: Pennsylvania State Rail Plan Public Benefit Analysis .....	E-1
Appendix F: Short-Term Passenger Rail Capital Project Funding Needs (2015-2019) .....	F-1
Appendix G: Long Term Passenger Rail Capital Project Funding Needs (2020-2040) .....	G-1
Appendix H: SEPTA Regional Rail Ridership Forecasts (2020-2040) .....	H-1
Appendix I: Short Term Freight Rail Capital Project Funding Needs (2015-2019) .....	I-1
Appendix J: Long-Term Freight Rail Capital Project Funding Needs (2020-2040) .....	J-1
Appendix K: Vision Passenger and Freight Rail Projects .....	K-1
Appendix L: Stakeholder and Public Meeting Presentation Slides and Handouts .....	L-1
Appendix M: Proposed Freight Rail Projects Submitted after July 20, 2015 Workshop .....	M-1



# List of Figures

Figure 1-1: Percentage of Rail Tonnage and Rail Unit Movement in Pennsylvania, 2013 .....	1-12
Figure 1-2: Commute-to Work Mode Share, Southeastern Pennsylvania, 2014.....	1-14
Figure 1-3: Non-Auto Mode Share, 25 Largest U.S. Cities, 2014 .....	1-14
Figure 1-4: Annual Awarded Contracts, 2007-2020.....	1-22
Figure 1-5: Route Miles of Active Freight Railroad in Pennsylvania.....	1-26
Figure 1-6: Needed Projects to Support Stair Steps 3 & 4 for Amtrak’s NEC .....	1-27
Figure 1-7: Potential Phasing for Northeast Corridor “NextGen” alignment .....	1-28
Figure 2-1: Amtrak Rail System in Pennsylvania.....	2-2
Figure 2-2: Amtrak Ridership, 2013.....	2-4
Figure 2-3: SEPTA Regional Rail System and Annual Ridership FY 2013.....	2-12
Figure 2-4: SEPTA Airport Line.....	2-14
Figure 2-5: SEPTA Chestnut Hill East Line .....	2-15
Figure 2-6: SEPTA Chestnut Hill West Line .....	2-16
Figure 2-7: SEPTA Cynwyd Line .....	2-17
Figure 2-8: SEPTA Fox Chase Line.....	2-18
Figure 2-9: SEPTA Lansdale/Doylestown Line.....	2-19
Figure 2-10: SEPTA Manayunk/Norristown Line .....	2-20
Figure 2-11: SEPTA Media/Elwyn Line .....	2-21
Figure 2-12: SEPTA Paoli/Thorndale Line (East) .....	2-22
Figure 2-13: SEPTA Paoli/Thorndale Line (West) .....	2-23
Figure 2-14: SEPTA Trenton Line.....	2-24
Figure 2-15: SEPTA Warminster Line .....	2-25
Figure 2-16: SEPTA West Trenton Line.....	2-26
Figure 2-17: SEPTA Wilmington/Newark Line .....	2-27
Figure 2-18: SEPTA Core Stations .....	2-29
Figure 2-19: Pennsylvania’s Freight Rail Network.....	2-38
Figure 2-20: NS Rail Network.....	2-40
Figure 2-21: CSX National Rail Network .....	2-42
Figure 2-22: Canadian National Rail Network .....	2-44
Figure 2-23: Major Rail Freight Corridors in Pennsylvania.....	2-45
Figure 2-24: Class II Railroads in Pennsylvania.....	2-47
Figure 2-25: Delaware-Lackawanna Rail Lines.....	2-50
Figure 2-26: Reading Blue Mountain & Northern Railroad Lines .....	2-51
Figure 2-27: RJ Corman Pennsylvania Railroad Lines.....	2-52

Figure 2-28: Western New York & Pennsylvania Railroad Lines.....	2-53
Figure 2-29: Percentage of Rail Tonnage and Rail Unit Movement in Pennsylvania, 2013 .....	2-55
Figure 2-30: Total Rail Coal Movement Flows by Tonnage, 2013 .....	2-57
Figure 2-31: Inbound Rail Traffic Flows by Rail Tonnage, 2013 .....	2-58
Figure 2-32: Outbound Rail Traffic Flows by Rail Tonnage, 2013 .....	2-59
Figure 2-33: Through Rail Traffic Flows by Rail Tonnage, 2013.....	2-60
Figure 2-34: Internal Rail Traffic Flows by Rail Tonnage, 2013.....	2-61
Figure 2-35: Total Rail Intermodal Movement Flows in Pennsylvania by Tonnage, 2013 .....	2-63
Figure 2-36: Inactive Rail Lines.....	2-68
Figure 2-37: Freight Facilities in Pennsylvania.....	2-70
Figure 2-38: STRACNET Routes .....	2-71
Figure 2-39: Pennsylvania Ports .....	2-72
Figure 2-40: Total Annual Number of Rail Accidents in Pennsylvania, 2004-2014.....	2-108
Figure 2-41: Total Train Accidents in Pennsylvania by County (2004-2014) .....	2-109
Figure 2-42: Railroad Crossings in Pennsylvania.....	2-110
Figure 2-43: Total Annual Number of Crossing Collisions in Pennsylvania, 2004-2014 .....	2-111
Figure 2-44: Total Crossing Collisions in Pennsylvania by County (2004-2014).....	2-112
Figure 2-45: Pennsylvania Population Growth Rate, by County, 2000-2010 .....	2-129
Figure 2-46: Pennsylvania Projected Population Growth Rate, by County, 2010-2040 .....	2-129
Figure 2-47: Pennsylvania Age-Sex Pyramid, 2010-2014.....	2-131
Figure 2-48: Projected Employment Growth Rate, by County, 2012-2040.....	2-133
Figure 2-49: Pennsylvania Rail Line Densities by Total Net Rail Tonnage, 2013.....	2-138
Figure 2-50: Projected Pennsylvania Rail Line Densities by Total Net Rail Tonnage, 2040.....	2-138
Figure 2-51: Unconventional Wells in the Region .....	2-142
Figure 2-52: Natural Gas Pipeline Network in Pennsylvania.....	2-143
Figure 2-53: Regional Extent of the Marcellus Shale .....	2-144
Figure 2-54: Regional Extent of the Utica Shale .....	2-145
Figure 2-55: U.S. Retail Gasoline Prices as Forecasted .....	2-148
Figure 2-56: Travel times via transit from Center City Philadelphia.....	2-152
Figure 2-57: Amtrak's Keystone Line and Stations.....	2-165
Figure 2-58: Elizabethtown Amtrak Station Site Plan.....	2-166
Figure 2-59: 3-D View of Typical Platform and Canopy.....	2-169
Figure 2-60: Typical Plan of Platform .....	2-170
Figure 2-61: Typical Cross Section of Platform and Canopy.....	2-171
Figure 3-1: Amtrak-Owned Rail Corridors .....	3-2
Figure 3-2: Proposed Stair Step Improvements for the Northeast Corridor .....	3-7





Figure 3-3: Potential Phasing for New Northeast Corridor “NextGen” Alignment.....	3-8
Figure 3-4: SEPTA Annual Ridership, by Regional Rail Station, 2014 .....	3-10
Figure 4-1: Pennsylvania Freight Rail Corridors.....	4-2
Figure 5-1: Amtrak Benefits per segment route mile .....	5-9
Figure 5-2: SEPTA Benefits per segment route mile .....	5-10
Figure 5-3: Freight Network Benefits per segment route mile .....	5-11
Figure 5-4: Short-Term Amtrak Passenger Rail Projects, 2015-2019.....	5-17
Figure 5-5: SEPTA Short-Term Passenger Rail Projects, 2015 to 2019.....	5-19
Figure 5-6: Location of Short-Term Freight Rail Projects (2015-2019) by Pennsylvania State Rail Plan Goal.....	5-30
Figure 5-7: Passenger Rail Vision Projects in Pennsylvania.....	5-44
Figure 5-8: Freight Rail Vision Projects in Pennsylvania.....	5-46
Figure 6-1: Locations of Stakeholder Involvement & Open House Meetings.....	6-5
Figure 6-2: State Rail Plan webpage on PennDOT’s Plan the Keystone Project Website.....	6-10
Figure E-1: Amtrak Benefits per Segment Route Mile for Trips With an Origin and/or Destination in Pennsylvania .....	E-19
Figure E-2: SEPTA Benefits per Segment Route Mile.....	E-20
Figure E-3: Freight Network Benefits per Segment Route Mile.....	E-21

## List of Tables

Table 1-1: 2011 Pennsylvania Freight Rail Traffic Movements, 2013.....	1-12
Table 1-2: Pennsylvania Metropolitan Planning Organizations .....	1-19
Table 1-3: Pennsylvania Rural Planning Organizations .....	1-20
Table 1-4: PennDOT Funding for Rail, Fiscal Years 2010-2014 .....	1-22
Table 1-5: Recent Environmental Reviews for Passenger Rail Improvements .....	1-25
Table 2-1: Annual Amtrak Ridership by Station, FY 2014 .....	2-5
Table 2-2: Annual Amtrak Ridership Growth by Station (FY2004 to FY2013) .....	2-5
Table 2-3: Amtrak Stations, Daily Weekday Service 2015.....	2-6
Table 2-4: Amtrak Route Ridership, 2014.....	2-7
Table 2-5: Interstate Trips - Top 5 City Pairs, 2014.....	2-8
Table 2-6: Intrastate Trips - Top 5 City Pairs, 2014.....	2-8
Table 2-7: Planned Improvements at Amtrak Stations.....	2-10
Table 2-8: SEPTA and Recently Completed MAS and VM, 2013.....	2-13
Table 2-9: SEPTA Major Station Boardings and Alightings for 2013 .....	2-28
Table 2-10: NJT Atlantic City Line Station Boardings, FY2012.....	2-36
Table 2-11: Freight Route Mileage.....	2-39



Table 2-12: Class III Railroads .....	2-48
Table 2-13: 2013 Pennsylvania Freight Rail Traffic .....	2-55
Table 2-14: Total Rail Tonnage, 2013 .....	2-56
Table 2-15: Inbound Rail Movements, 2013 .....	2-56
Table 2-16: Outbound Rail Movements, 2013 .....	2-56
Table 2-17: Leading Inbound Rail Tonnage from Originating States, 2013 .....	2-58
Table 2-18: Leading Outbound Rail Tonnage Destinations from Pennsylvania, 2013 .....	2-59
Table 2-19: 2013 Pennsylvania Intermodal Freight Rail Traffic by Type .....	2-62
Table 2-20: Non-Operating Owners .....	2-64
Table 2-21: Railroad Holding Companies .....	2-65
Table 2-22: Pennsylvania Rail-Trail Projects .....	2-69
Table 2-23: Undeveloped Railbanked Corridors in Pennsylvania .....	2-69
Table 2-24: Pennsylvania Rails-With-Trails Projects .....	2-69
Table 2-25: SEPTA Line On-Time Performance October-November 2014 .....	2-85
Table 2-26: Percent of Fully Allocated Operating Costs Covered By Passenger-Related Revenue (Including State Revenue), FY 2011-2014 .....	2-87
Table 2-27: Percent of Fully Allocated Operating Costs Covered By Passenger-Related Revenue (Excluding State Revenue), FY 2011-2014 .....	2-87
Table 2-28: Passenger-Miles Per Train Mile, FY 2011-2014 .....	2-88
Table 2-29: Adjusted Loss Per Passenger-Mile, FY 2011-2014 .....	2-88
Table 2-30: End-Point Delay Tolerance .....	2-88
Table 2-31: On Time Percentage Standards .....	2-88
Table 2-32: PRIIA On-Time Performance (2014) .....	2-89
Table 2-33: Delay Codes .....	2-90
Table 2-34: Off-NEC Host Responsible Delays By Service (Minutes of Delay per 10,000 Train Miles) April- June 2014 .....	2-91
Table 2-35: Off-NEC Amtrak Responsible Delays By Service (Minutes of Delay per 10,000 Train Miles) April-June .....	2-92
Table 2-36: On-NEC Host and Amtrak Responsible Delays By Service (Minutes of Delay per 10,000 Train Miles), April-June 2014 .....	2-92
Table 2-37 Annual Passenger-Miles By Route, FY 2010-2014 .....	2-93
Table 2-38 Annual Ridership By Route, FY 2010-2014 .....	2-93
Table 2-39: Summary of Rail-Related TIGER Grant Awards in Pennsylvania .....	2-95
Table 2-40: Summary of MAP-21 Grant Programs .....	2-97
Table 2-41: Rail Safety Agency Summary .....	2-106
Table 2-42: Section 130 Funded Projects in Pennsylvania .....	2-113



Table 2-43: Grants Awarded to Freight Rail Projects Identified in the 2010 Pennsylvania Passenger and Freight Plan .....	2-126
Table 2-44: Population Growth in Pennsylvania .....	2-128
Table 2-45: Pennsylvania Counties – Top 10 Counties by Growth Rate, 2000-2010 .....	2-128
Table 2-46: Pennsylvania Unemployment Rates, by Various Demographic Groups, 2013 Estimates ....	2-132
Table 2-47: Occupation, Industry and Class of Worker in Pennsylvania, 2013 Estimates .....	2-134
Table 2-48: Median Earnings in Pennsylvania, 2013 Estimates.....	2-135
Table 2-49: Poverty Rates for Families in Pennsylvania, 2013 Estimates.....	2-135
Table 2-50: Pennsylvania Rail Freight by Major Commodities, 2013 and 2040 .....	2-136
Table 2-51: Projected Pennsylvania Rail Freight by Major Commodities, Projected for 2040 .....	2-137
Table 2-52: Pennsylvania Intermodal Freight Rail by Tonnage, Value, and Units, 2011 and Projections for 2040.....	2-140
Table 2-53: Pennsylvania Intermodal and Non-Intermodal (Carload/Railcar) Freight Rail by Percentage, 2011 and Projections for 2040 .....	2-140
Table 2-54: Amtrak Projected Annual Ridership, 2014 to 2035 .....	2-150
Table 2-55: SEPTA Regional Rail Average Weekday Ridership Forecasts, 2010 to 2040 .....	2-151
Table 2-56: Pennsylvania Coal Production 2002 - 2012 .....	2-158
Table 3-1: Summary of Amtrak’s Keystone Corridor Five Year Plan (2015-2019).....	3-3
Table 3-2: Summary of Amtrak’s Northeast Corridor Five Year Plan (2015-2019) .....	3-6
Table 3-3: Summary of SEPTA’s Regional Rail Twelve Year Capital Plan (2015-2026).....	3-10
Table 4-1: Freight Rail Corridors in Pennsylvania .....	4-3
Table 4-2: Major Crescent Corridor Improvements.....	4-8
Table 4-3: Major Main Line Corridor Improvements .....	4-10
Table 4-4: Major Southwest Corridor Improvements .....	4-12
Table 4-5: Major Southeast Corridor Improvements.....	4-14
Table 4-6: Major Erie Corridor Improvements.....	4-15
Table 4-7: Major Class II Projects.....	4-16
Table 4-8: Freight Rail Projects Summary by Improvement Type .....	4-18
Table 5-1: Summary of Passenger Rail Benefits Through 2040, in millions of 2015 dollars .....	5-8
Table 5-2: Summary of Freight Rail Benefits Through 2040, in millions of 2015 dollars .....	5-11
Table 5-3: Passenger Rail Projects Evaluation Criteria Matrix .....	5-14
Table 5-4: Number of Passenger Rail Projects by Agency and State Rail Plan Goals, 2015 to 2040.....	5-14
Table 5-5: Projected Passenger Rail Spending by Agency and State Rail Plan Goals, 2015 to 2040 in millions of 2015 dollars .....	5-16
Table 5-6: Number of Short-Term Passenger Rail Projects by Class and SRP Goal, 2015 to 2019 .....	5-16
Table 5-7: Number of Identified Long-Term Passenger Rail Projects by Class and SRP Goal, 2020 to 2040.....	5-19
Table 5-8: Short-Term Passenger Rail Capital Project Costs, 2015-2019 in millions of Year of	

Expenditure dollars.....	5-22
Table 5-9: Short-Term Rail Capital Spending Gap Analysis, 2015-2019 in millions of Year of Expenditure dollars.....	5-23
Table 5-10: Projected Operating Budget for Amtrak State-supported Routes, in millions of Year of Expenditure dollars.....	5-24
Table 5-11: Projected Operating Budget for SEPTA Regional Rail, FY 2015 to FY 2019 in millions of Year of Expenditure dollars.....	5-25
Table 5-12: Freight Rail Projects Evaluation Criteria Matrix .....	5-27
Table 5-13: Number of Freight Rail Projects by Class and State Rail Plan Goal, 2015 to 2040 .....	5-28
Table 5-14: Number of Short-Term Freight Rail Projects by Class and SRP Goal, 2015 to 2019 .....	5-30
Table 5-15: Number of Long-Term Freight Rail Projects by Class and SRP Goal, 2020 to 2040.....	5-31
Table 5-16: Major Dedicated State Assistance for Freight Rail in Pennsylvania, FY2012-2014 in millions of Year of Expenditure dollars.....	5-33
Table 5-17: Estimated Cost of Freight Rail Projects by Class and SRP Goals, 2015 to 2019 in millions of Year of Expenditure dollars.....	5-34
Table 5-18: Estimated Cost of Freight Rail Projects by Class and SRP Goals, 2020 to 2040 in millions of 2015 dollars .....	5-35
Table 5-19: Short-Term Freight Rail RSIP Gap Analysis, 2015 to 2019 in millions of Year of Expenditure dollars.....	5-37
Table 5-20: Ongoing Passenger Rail Studies and Plans in Pennsylvania .....	5-41
Table 5-21: Completed Passenger Rail Studies and Plans with Currently Unfunded Projects in Pennsylvania .....	5-42
Table 5-22: Freight Rail Vision Projects.....	5-45
Table 5-23: Summary of Short-Term Passenger Rail and Freight Rail Needs, 2015 to 2019 in millions of Year of Expenditure dollars.....	5-50
Table 5-24: Summary of Long-Term Passenger Rail and Freight Rail Needs, 2020 to 2040 in millions of 2015 dollars .....	5-50
Table A-1: Existing (2013) Rail Commodity Movements in PA .....	A-1
Table A-2: Future (2040) Rail Commodity Movements in PA.....	A-4
Table A-3: 2013 Total Traffic .....	A-7
Table A-4: 2040 Projected Total Traffic .....	A-7
Table A-5: 2013 Top Commodities by Tons .....	A-7
Table A-6: 2013 Top Commodities by Units.....	A-7
Table A-7: 2013 Top Inbound Commodities by Tons .....	A-7
Table A-8: 2013 Top Inbound Commodities by Units.....	A-8
Table A-9: 2013 Top Outbound Commodities by Tons.....	A-8
Table A-10: 2013 Top Outbound Commodities by Units .....	A-8
Table A-11: 2013 Top Through Commodities by Tons .....	A-8
Table A-12: 2013 Top Through Commodities by Units .....	A-9



Table A-13: 2013 Top Internal Commodities by Tons .....	A-9
Table A-14: 2011 Top Internal Commodities by Units .....	A-9
Table A-15: Top 10 Destination States by Tonnage 2013 .....	A-10
Table A-16: Top 10 Destination States by Units 2013.....	A-10
Table A-17: Top 10 Rail Freight Generating Counties by Tonnage 2013.....	A-10
Table A-18: Top 10 Rail Freight Generating Counties by Units 2013 .....	A-11
Table A-19: Top 10 Origin States by Tonnage, 2013 .....	A-11
Table A-20: Origin States of Pennsylvania’s Freight by Units 2013.....	A-11
Table B-1: Pennsylvania Demographic Profile, U.S. Census, 2000-2010 .....	B-1
Table B-2: Pennsylvania County Historic and Projected Demographic Profile, U.S. Census, 2000-2040 .....	B-2
Table C-1: SEPTA Project List .....	C-1
Table C-2: Amtrak Project List .....	C-5
Table D-1: Freight Project List .....	D-1
Table E-1: Passenger Rail Network Segments.....	E-2
Table E-2: Estimated Annual SEPTA Passenger Miles of Travel (millions), 2015 – 2040 .....	E-6
Table E-3: Estimated Amtrak Passenger Miles of Travel (millions) for Trips Originating and/or Ending in Pennsylvania, 2015 – 2040 .....	E-7
Table E-4: Estimated Reduction In Vehicle Miles Traveled (In Millions) and Corresponding Savings in Operating Costs (in Millions Of 2015 Dollars) Due to Passenger Rail in Pennsylvania .....	E-8
Table E-5: Passenger Rail Collision Reduction Impact (in millions of 2015 dollars) .....	E-9
Table E-6: Passenger Rail Emissions Reduction Impact (in millions of 2015 dollars).....	E-11
Table E-7: Estimated Ton-Miles (millions) of Freight, Intrastate and Interstate Movements Through Pennsylvania .....	E-12
Table E-8: Assumed Truck Payload Capacities .....	E-14
Table E-9: Estimated Truck-Miles (millions) of Freight, Intrastate and Interstate Movements Through Pennsylvania .....	E-14
Table E-12: Freight Collision Reduction Impact (dollar values in millions of 2015 dollars) .....	E-17
Table E-13: Freight Emissions Reductions Impact (in millions of miles and 2015 dollars).....	E-18
Table E-14: Summary of Passenger Rail Benefits through 2040 (in millions of 2015 dollars) .....	E-18
Table E-15: Summary of Freight Rail Benefits through 2040 (in millions of 2015 dollars) .....	E-21

Table F-1: Short-Term Passenger Rail Capital Project Funding Needs (2015-2019) in millions of inflation-adjusted Year Of Expenditure (YOE) Dollars .....	F-1
Table G-1: Long-Term Passenger Rail Capital Project Funding Needs (2020-2040).....	G-1
Table H-1: SEPTA Daily Regional Rail Person Trip Forecasts (2020-2040).....	H-1
Table H-2: SEPTA Daily Regional Rail Average Ridership Forecasts (2020-2040).....	H-2
Table I-1: Short-Term Freight Rail Capital Project Funding Needs (2015-2019) .....	I-1
Table J-1: Long-Term Freight Rail Capital Project Funding Needs (2020 - 2040).....	J-1
Table K-1: Ongoing Passenger Rail Studies and Plans in Pennsylvania .....	K-1
Table K-2: Completed Passenger Rail Studies and Plans with Currently Unfunded Projects in Pennsylvania .....	K-2
Table K-3: Freight Rail Vision Projects .....	K-5
Table M-1: Freight Project List Submitted after Deadline .....	M-1



## List of Abbreviations

AAR	American Association of Railroads	EBT	East Broad Top Preservation Association
Act 89	Comprehensive Transportation Funding Plan of 2013	EIS	Environmental Impact Statement
ACTPO	Adams County Transportation Planning Organization	EMU	Electric multiple units
ADA	Americans with Disabilities Act of 1990	Erie MPO	Erie Area Transportation Study Metropolitan Planning Organization
AVR	Allegheny Valley Railroad	ESPN	East Penn Railroad
BHP	Bureau for Historic Preservation	EV	Everett Railroad Company
BLE	Bessemer & Lake Erie Railroad	FCRPO	Franklin County Rural Planning Organization
BPRR	Buffalo & Pittsburgh Railroad	FHWA	Federal Highway Administration
BVRY	Brandywine Valley Railroad	FRA	Federal Railroad Administration
C&S	Communications & Signals	FTA	Federal Transit Administration
CB	Capital Budget	G&N	Gettysburg & Northern Railroad
CCMPO	Centre County Metropolitan Planning Organization	G&W	Genesee & Wyoming Railroad
CMAQ	Congestion Mitigation and Air Quality	GIS	Geographic Information System(s)
CN	Canadian National	HEPMPO	Hagerstown/Eastern Panhandle Metropolitan Planning Organization
CNYK	Central New York Railroad (service operated on CNYK line by NYS&W)	JVRR	Juniata Valley Railroad
CP	Canadian Pacific Railway	KJR	Kinski Junction Railroad
CRCOG	Centre Region Council of Governments	L RTP	Long Range Transportation Plan
CRGIS	Cultural Resources Geographic Information System	LTAP	Local Technical Assistance Program
CSX/CSXT	CSX Corporation	LVPC	Lehigh Valley Planning Commission
D&H	Delaware & Hudson Railway Co.	LVR	Landisville Railroad, LLC
DCED	Department of Community and Economic Development	LVRM	Lehigh Valley Rail Management Railroad
DLRR	Delaware-Lackawanna Railroad (Contracted to operate PNRRA-owned lines)	LVRR	Lycoming Valley Railroad
DVRPC	Delaware Valley Regional Planning Commission	MAD DIV	Mid-Atlantic Division
EATS	Erie Area Transportation Study	MAP-21	Moving Ahead for Progress in the 21st Century Act
		MAS	Maximum Allowable Speed
		MCIDC	Mifflin County Industrial Development Corporation
		MPO	Metropolitan Planning Organization



NBER	Nittany & Bald Eagle Railroad Co.	RBMN	Reading Blue Mountain & Northern Railroad
NCHRP	National Cooperative Highway Research Program	RFAP	Rail Freight Assistance Program
NEC	Northeast Corridor	RJCP	R.J. Corman Railroad Co./Pennsylvania Lines Inc.
NHSL	Norristown High Speed Line	RPO	Rural Planning Organization
NHTSA	National Highway Safety Administration	RR	Railroad
NJ Transit	New Jersey Transit	RRIF	Railroad Rehabilitation & Improvement Financing
NPT	New Payment Technology	RRX	Railroad crossing
NPV	Net present value	RSIP	Rail Service Investment Program
NS	Norfolk Southern	RTAP	Rail Transportation Assistance Program
NSRR	North Shore Railroad Company	SBRR	Stourbridge Railroad
NY DIV	New York Division	SEDA-COG	Susquehanna Economic Development Corporation Council of Governments
O&M	Operations & Maintenance	SEDA JRA	Susquehanna Economic Development Corporation Council of Governments Joint Rail Authority
OCTL	Oil Creek & Titusville Lines	SEPTA	Southeastern Pennsylvania Transportation Authority
P3	Public Private Partnership	SHRR	Steelton & Highspire Railroad
PAAC	Port Authority of Allegheny County	SHPO	State Historic Preservation Office
PAB	Private Activity Bond	SPC	Southwestern Planning Commission
PBL	Philadelphia Belt Line Railroad Company	SR	State road
PennDOT	Pennsylvania Department of Transportation	SRC	Strasburg Railroad Company
PIB	Pennsylvania Infrastructure Bank	SRP	Pennsylvania State Rail Plan
PN	Pennsylvania Northeastern Railroad	SRPAA	State Rail Plan Approval Authority
PNRRA	Pennsylvania Northeast Regional Railroad Authority	SRTA	State Rail Transportation Authority
POHC	Pittsburgh & Ohio Central Railroad	STB	Surface Transportation Board
PRIIA	Passenger Rail Investment and Improvement Act	STIP	State Transportation Improvement Program
PRRIA	Passenger Rail Reform and Investment Act	SVRR	Shamokin Valley Railroad Corp.
PSOP	Public and Stakeholder Outreach Plan	SWP	Southwest Pennsylvania Railroad
PSWR	Pennsylvania Southwestern Railroad	TBD	To be determined
PTC	Positive Train Control	TIFA	Trade & Investment Framework Agreement
PUC	Public Utility Commission		
RATS	Reading Area Transportation Study		





TIFIA	Transportation Infrastructure Finance and Innovation Act)
TIGER	Transportation Investment Generating Economic Recovery
TIP	Transportation Improvement Program
TMA	Transportation Management Agency
TOD	Transit Oriented Development
TYP	PennDOT Twelve Year Program
UMP	Upper Merion and Plymouth Railroad
USDOT	US Department of Transportation
VMT	Vehicle miles traveled
WLE	Wheeling & Lake Erie Railroad
WNYP	Western New York and Pennsylvania Railroad
YAMPO	York Area Metropolitan Planning Organization
YOE	Year of Expenditure
YRC	York Railway

# List of Abbreviations

AAR	American Association of Railroads	EBT	East Broad Top Preservation Association
Act 89	Comprehensive Transportation Funding Plan of 2013	EIS	Environmental Impact Statement
ACTPO	Adams County Transportation Planning Organization	EMU	Electric multiple units
ADA	Americans with Disabilities Act of 1990	Erie MPO	Erie Area Transportation Study Metropolitan Planning Organization
AVR	Allegheny Valley Railroad	ESPN	East Penn Railroad
BHP	Bureau for Historic Preservation	EV	Everett Railroad Company
BLE	Bessemer & Lake Erie Railroad	FCRPO	Franklin County Rural Planning Organization
BPRR	Buffalo & Pittsburgh Railroad	FHWA	Federal Highway Administration
BVRY	Brandywine Valley Railroad	FRA	Federal Railroad Administration
C&S	Communications & Signals	FTA	Federal Transit Administration
CB	Capital Budget	G&N	Gettysburg & Northern Railroad
CCMPO	Centre County Metropolitan Planning Organization	G&W	Genesee & Wyoming Railroad
CMAQ	Congestion Mitigation and Air Quality	GIS	Geographic Information System(s)
CN	Canadian National	HEPMPO	Hagerstown/Eastern Panhandle Metropolitan Planning Organization
CNYK	Central New York Railroad (service operated on CNYK line by NYS&W)	JVRR	Juniata Valley Railroad
CP	Canadian Pacific Railway	KJR	Kinski Junction Railroad
CRCOG	Centre Region Council of Governments	L RTP	Long Range Transportation Plan
CRGIS	Cultural Resources Geographic Information System	LTAP	Local Technical Assistance Program
CSX/CSXT	CSX Corporation	LVPC	Lehigh Valley Planning Commission
D&H	Delaware & Hudson Railway Co.	LVR	Landisville Railroad, LLC
DCED	Department of Community and Economic Development	LVRM	Lehigh Valley Rail Management Railroad
DLRR	Delaware-Lackawanna Railroad (Contracted to operate PNRRA-owned lines)	LVR	Lycoming Valley Railroad
DVRPC	Delaware Valley Regional Planning Commission	MAD DIV	Mid-Atlantic Division
EATS	Erie Area Transportation Study	MAP-21	Moving Ahead for Progress in the 21st Century Act
		MAS	Maximum Allowable Speed
		MCIDC	Mifflin County Industrial Development Corporation
		MPO	Metropolitan Planning Organization

NBER	Nittany & Bald Eagle Railroad Co.	RBMN	Reading Blue Mountain & Northern Railroad
NCHRP	National Cooperative Highway Research Program	RFAP	Rail Freight Assistance Program
NEC	Northeast Corridor	RJCP	R.J. Corman Railroad Co./Pennsylvania Lines Inc.
NHSL	Norristown High Speed Line	RPO	Rural Planning Organization
NHTSA	National Highway Safety Administration	RR	Railroad
NJ Transit	New Jersey Transit	RRIF	Railroad Rehabilitation & Improvement Financing
NPT	New Payment Technology	RRX	Railroad crossing
NPV	Net present value	RSIP	Rail Service Investment Program
NS	Norfolk Southern	RTAP	Rail Transportation Assistance Program
NSRR	North Shore Railroad Company	SBRR	Stourbridge Railroad
NY DIV	New York Division	SEDA-COG	Susquehanna Economic Development Corporation Council of Governments
O&M	Operations & Maintenance	SEDA JRA	Susquehanna Economic Development Corporation Council of Governments Joint Rail Authority
OCTL	Oil Creek & Titusville Lines	SEPTA	Southeastern Pennsylvania Transportation Authority
P3	Public Private Partnership	SHRR	Steelton & Highspire Railroad
PAAC	Port Authority of Allegheny County	SHPO	State Historic Preservation Office
PAB	Private Activity Bond	SPC	Southwestern Planning Commission
PBL	Philadelphia Belt Line Railroad Company	SR	State road
PennDOT	Pennsylvania Department of Transportation	SRC	Strasburg Railroad Company
PIB	Pennsylvania Infrastructure Bank	SRP	Pennsylvania State Rail Plan
PN	Pennsylvania Northeastern Railroad	SRPAA	State Rail Plan Approval Authority
PNRRA	Pennsylvania Northeast Regional Railroad Authority	SRTA	State Rail Transportation Authority
POHC	Pittsburgh & Ohio Central Railroad	STB	Surface Transportation Board
PRIIA	Passenger Rail Investment and Improvement Act	STIP	State Transportation Improvement Program
PRRIA	Passenger Rail Reform and Investment Act	SVRR	Shamokin Valley Railroad Corp.
PSOP	Public and Stakeholder Outreach Plan	SWP	Southwest Pennsylvania Railroad
PSWR	Pennsylvania Southwestern Railroad	TBD	To be determined
PTC	Positive Train Control	TIFA	Trade & Investment Framework Agreement
PUC	Public Utility Commission		
RATS	Reading Area Transportation Study		



TIFIA	Transportation Infrastructure Finance and Innovation Act)
TIGER	Transportation Investment Generating Economic Recovery
TIP	Transportation Improvement Program
TMA	Transportation Management Agency
TOD	Transit Oriented Development
TYP	PennDOT Twelve Year Program
UMP	Upper Merion and Plymouth Railroad
USDOT	US Department of Transportation
VMT	Vehicle miles traveled
WLE	Wheeling & Lake Erie Railroad
WNYP	Western New York and Pennsylvania Railroad
YAMPO	York Area Metropolitan Planning Organization
YOE	Year of Expenditure
YRC	York Railway