

Appendix F: Short-Term Passenger Rail Capital Project Funding Needs (2015-2019)



SEPTA Regional Rail train

Source: PennDOT

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Table F-1: Short-Term Passenger Rail Capital Project Funding Needs (2015-2019) in millions of inflation-adjusted Year Of Expenditure (YOE) Dollars

Project Number	Project Description	Estimated Cost in 2015 Dollars	2015 YOE	2016 YOE	2017 YOE	2018 YOE	2019 YOE	Total Short-Term Cost (YOE)	Funding Sources (see Notes at end of table)	Estimated PA State Match*
SEPTA										
State of Good Repair										
102573	30th Street to Arsenal Interlocking	\$4.3	\$0.9	\$0.9	\$0.9	\$0.9	\$1.0	\$4.6	5337, 1514, Local	\$0.9
102571	Arsenal Interlocking	\$27.0	\$5.4	\$5.6	\$5.7	\$5.9	\$6.1	\$28.7	1514, Local	\$27.8
102573	Arsenal Interlocking Design Catenary Improvements	\$0.5	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.5	5337, 1514, Local	\$0.1
102571	Beth Interlocking	\$14.0	\$2.8	\$2.9	\$3.0	\$3.1	\$3.2	\$14.9	1514, Local	\$14.4
60651	Bethayres Substation Improvement	\$12.9	\$2.6	\$2.7	\$2.7	\$2.8	\$2.9	\$13.7	1514, Local	\$13.3
102569	Boiler Program	\$1.1	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1.1	1514, Local	\$1.1
60651	Chestnut Hill East Substation Improvement	\$7.7	\$1.5	\$1.6	\$1.6	\$1.7	\$1.7	\$8.2	1514, Local	\$7.9
95402	Chestnut Hill West Regional Rail Line 7 Bridges	\$35.0	\$7.0	\$7.2	\$7.4	\$7.6	\$7.9	\$37.2	1514, Local	\$36.0
95402	Chestnut Hill West Regional Rail Line Bridge 0.35 Replacement	\$7.6	\$1.5	\$1.6	\$1.6	\$1.7	\$1.7	\$8.1	1514, Local	\$7.8
102567	Frazer Shop	\$6.8	\$1.4	\$1.4	\$1.4	\$1.5	\$1.5	\$7.2	1514, Local	\$7.0
102569	Frazer Washer	\$3.4	\$0.7	\$0.7	\$0.7	\$0.8	\$0.8	\$3.6	1514, Local	\$3.5
60651	Hatboro Substation Improvement	\$7.7	\$1.5	\$1.6	\$1.6	\$1.7	\$1.7	\$8.2	1514, Local	\$7.9
60651	Lansdale Substation Improvement	\$11.0	\$2.2	\$2.3	\$2.3	\$2.4	\$2.5	\$11.7	1514, Local	\$11.3

Table F-1: Short-Term Passenger Rail Capital Project Funding Needs (2015-2019) in millions of inflation-adjusted Year Of Expenditure (YOE) Dollars, cont.

Project Number	Project Description	Estimated Cost in 2015 Dollars	2015 YOE	2016 YOE	2017 YOE	2018 YOE	2019 YOE	Total Short-Term Cost (YOE)	Funding Sources (see Notes at end of table)	Estimated PA State Match*
60651	Lenni/Morton Substation Improvement	\$20.1	\$4.0	\$4.1	\$4.3	\$4.4	\$4.5	\$21.3	1514, Local	\$20.7
102569	Lift Program	\$10.0	\$2.0	\$2.1	\$2.1	\$2.2	\$2.3	\$10.6	1514, Local	\$10.3
102573	Media/Elwyn Line Catenary Improvements	\$10.7	\$2.1	\$2.2	\$2.3	\$2.3	\$2.4	\$11.4	5337, 1514, Local	\$2.2
95402	Media/Elwyn Line Crum Creek Viaduct Replacement	\$77.5	\$15.5	\$16.0	\$16.4	\$16.9	\$17.4	\$82.3	1514, Local	\$79.8
95402	Media/Elwyn Regional Rail Line Viaduct Improvements (Cobbs Creek, Darby Creek, Ridley Creek Viaducts)	\$43.3	\$8.7	\$8.9	\$9.2	\$9.5	\$9.7	\$46.0	1514, Local	\$44.6
102567	Overbrook Maintenance Facility	\$7.6	\$1.5	\$1.6	\$1.6	\$1.7	\$1.7	\$8.1	1514, Local	\$7.8
95402	Regional Rail Line Stone Arch Bridges	\$8.8	\$1.8	\$1.8	\$1.9	\$1.9	\$2.0	\$9.3	1514, Local	\$9.1
60582	SEPTA system wide Vehicle Overhaul Program provides for the systematic replacement or upgrade of systems on SEPTA's rolling stock.	\$117.3	\$23.5	\$24.2	\$24.9	\$25.6	\$26.4	\$124.6	5337, 5307, 1514, Local	\$24.2
60255	Signal Modernization	\$34.2	\$6.8	\$7.0	\$7.3	\$7.5	\$7.7	\$36.3	5307, 5309, 5337, 1514	\$7.0
102569	Steel Wheel Lift Program	\$1.2	\$0.2	\$0.2	\$0.2	\$0.3	\$0.3	\$1.2	1514, Local	\$1.2
102569	Storage Tank Program	\$1.3	\$0.3	\$0.3	\$0.3	\$0.3	\$0.3	\$1.4	1514, Local	\$1.3



Table F-1: Short-Term Passenger Rail Capital Project Funding Needs (2015-2019) in millions of inflation-adjusted Year Of Expenditure (YOE) Dollars, cont.

Project Number	Project Description	Estimated Cost in 2015 Dollars	2015 YOE	2016 YOE	2017 YOE	2018 YOE	2019 YOE	Total Short-Term Cost (YOE)	Funding Sources (see Notes at end of table)	Estimated PA State Match *
59973	Upgrade and replace the Authority's utility fleet and automotive service fleet. SEPTA utility vehicles support transit and railroad operations.	\$9.8	\$2.0	\$2.0	\$2.1	\$2.1	\$2.2	\$10.4	5337, 5307, 1514, Local	\$2.0
60651	Wayne Junction Static Frequency Converters	\$50.0	\$10.0	\$10.3	\$10.6	\$10.9	\$11.3	\$53.1	1514, Local	\$51.5
102573	Wayne Junction Yard Catenary Improvements	\$1.3	\$0.3	\$0.3	\$0.3	\$0.3	\$0.3	\$1.4	5337, 1514, Local	\$0.3
102569	Wheel Truing Program	\$15.0	\$3.0	\$3.1	\$3.2	\$3.3	\$3.4	\$15.9	1514, Local	\$15.4
60651	Wood Substation Improvements	\$27.5	\$5.5	\$5.7	\$5.8	\$6.0	\$6.2	\$29.2	1514, Local	\$28.3
	Subtotal	\$574.5	\$114.9	\$118.4	\$121.9	\$125.6	\$129.3	\$610.1		\$445.0
SEPTA										
System Enhancements										
73214	Ardmore Transportation Center (Phase I)	\$4.1	\$0.8	\$0.8	\$0.9	\$0.9	\$0.9	\$4.4	RACP, 1514	\$4.2
102571	CARD (Computer Aided Radio Dispatch) System Replacement	\$32.5	\$6.5	\$6.7	\$6.9	\$7.1	\$7.3	\$34.5	1514, Local	\$33.5
77183	Conshohocken Station Improvements	\$15.0	\$3.0	\$3.1	\$3.2	\$3.3	\$3.4	\$15.9	5307, 1514	\$3.1
77183	East Falls Station Improvements	\$19.5	\$3.9	\$4.0	\$4.1	\$4.3	\$4.4	\$20.7	5307, 1514	\$4.0
93588	Exton Station: High-level platforms, station building, bus circulation loops, and multi-level parking garage	\$56.3	\$11.3	\$11.6	\$11.9	\$12.3	\$12.7	\$59.8	1514, Local	\$58.0

Table F-1: Short-Term Passenger Rail Capital Project Funding Needs (2015-2019) in millions of inflation-adjusted Year Of Expenditure (YOE) Dollars, cont.

Project Number	Project Description	Estimated Cost in 2015 Dollars	2015 YOE	2016 YOE	2017 YOE	2018 YOE	2019 YOE	Total Short-Term Cost (YOE)	Funding Sources (see Notes at end of table)	Estimated PA State Match *
103626	Flood Mitigation at Jenkintown (Resiliency Program)	\$19.9	\$4.0	\$4.1	\$4.2	\$4.3	\$4.5	\$21.1	5324, 1514, Local	\$4.1
60540	Gwynedd Valley Station	\$3.0	\$0.6	\$0.6	\$0.6	\$0.7	\$0.7	\$3.2	1514, Local	\$3.1
77183	Jenkintown Station High Level Platforms	\$25.3	\$5.1	\$5.2	\$5.4	\$5.5	\$5.7	\$26.9	1514, Local	\$26.1
60540	Lansdale Station Garage	\$20.0	\$4.0	\$4.1	\$4.2	\$4.4	\$4.5	\$21.2	1514, Local	\$20.6
60655	Levittown Intermodal Facility Improvements	\$30.0	\$6.0	\$6.2	\$6.4	\$6.6	\$6.8	\$31.9	1514, Local	\$30.9
103626	Manayunk/Norristown Line Shoreline Stabilization (Resiliency Program)	\$6.0	\$1.2	\$1.2	\$1.3	\$1.3	\$1.4	\$6.4	5324, 1514, Local	\$1.2
15407	Modernize Villanova Station	\$30.6	\$6.1	\$6.3	\$6.5	\$6.7	\$6.9	\$32.5	1514, Local	\$31.5
60611	New Payment Technologies (NPT) Project: Provide single electronic fare payment system for entire SEPTA transportation network	\$66.3	\$13.3	\$13.7	\$14.1	\$14.5	\$14.9	\$70.4	5307, 1514, Local	\$13.7
60540	North Wales Station Improvements	\$3.0	\$0.6	\$0.6	\$0.6	\$0.7	\$0.7	\$3.2	1514, Local	\$3.1
60574	Paoli Transportation Multi-Modal Center	\$56.0	\$11.2	\$11.5	\$11.9	\$12.2	\$12.6	\$59.5	5307, 1516, 1514, Local	\$11.5
60540	Philmont Station Improvements	\$3.0	\$0.6	\$0.6	\$0.6	\$0.7	\$0.7	\$3.2	1514, Local	\$3.1



Table F-1: Short-Term Passenger Rail Capital Project Funding Needs (2015-2019) in millions of inflation-adjusted Year Of Expenditure (YOE) Dollars, cont.

Project Number	Project Description	Estimated Cost in 2015 Dollars	2015 YOE	2016 YOE	2017 YOE	2018 YOE	2019 YOE	Total Short-Term Cost (YOE)	Funding Sources (see Notes at end of table)	Estimated PA State Match*
103626	Railroad Embankment/Slope Stability at Media, Mainline, Limekiln, Ardsley and Chestnut Hill East Cuts Resiliency Program (Resiliency Program)	\$25.0	\$5.0	\$5.2	\$5.3	\$5.5	\$5.6	\$26.5	5324, 1514, Local	\$5.1
103626	Railroad Signal Power Reinforcement (Resiliency Program)	\$42.7	\$8.5	\$8.8	\$9.1	\$9.3	\$9.6	\$45.3	5324, 1514, Local	\$8.8
102571	Real Time Information / Audio-Video Public Address System (AVPA)	\$26.5	\$5.3	\$5.5	\$5.6	\$5.8	\$6.0	\$28.1	1514, Local	\$27.3
60638	Regional Rail Bi-Level Car & Locomotive Acquisition	\$235.0	\$47.0	\$48.4	\$49.9	\$51.4	\$52.9	\$249.5	1514, Local	\$242.0
77183	Secane Station Improvements	\$23.1	\$4.6	\$4.8	\$4.9	\$5.0	\$5.2	\$24.5	5307, 1514, Local	\$4.8
102567	Temple Station Roof Improvements	\$1.5	\$0.3	\$0.3	\$0.3	\$0.3	\$0.3	\$1.6	1514, Local	\$1.5
77183	Willow Grove Station Improvements	\$6.5	\$1.3	\$1.3	\$1.4	\$1.4	\$1.5	\$6.9	5307, 1514, Local	\$1.3
Subtotal		\$750.8	\$150.2	\$154.7	\$159.3	\$164.1	\$169.0	\$797.2		\$542.6

Table F-1: Short-Term Passenger Rail Capital Project Funding Needs (2015-2019) in millions of inflation-adjusted Year Of Expenditure (YOE) Dollars, cont.

Project Number	Project Description	Estimated Cost in 2015 Dollars	2015 YOE	2016 YOE	2017 YOE	2018 YOE	2019 YOE	Total Short-Term Cost (YOE)	Funding Sources (see Notes at end of table)	Estimated PA State Match *
SEPTA										
Expansion Projects										
60636	Wawa Extension: Three mile restoration of rail service from the existing Media/Elwyn Regional Rail Line terminus at Elwyn, Delaware County, to a new terminus in Wawa, Delaware County	\$127.2	\$25.4	\$26.2	\$27.0	\$27.8	\$28.6	\$135.1	1514, Local	\$131.0
98235	West Trenton Line Third Track Project: Reduce congestion by separating SEPTA service from CSX freight rail service on the West Trenton Line	\$38.8	\$7.8	\$8.0	\$8.2	\$8.5	\$8.7	\$41.2	5307, 1514, Local	\$8.0
Subtotal		\$166.0	\$33.2	\$34.2	\$35.2	\$36.3	\$37.4	\$176.3		\$139.0
SEPTA										
Safety Improvements										
103626	Ancillary Control Center (Resiliency Program)	\$12.0	\$2.4	\$2.5	\$2.5	\$2.6	\$2.7	\$12.7	5324, 1514, Local	\$2.5
N/A	Positive Train Control**	\$72.8	\$72.8	-	-	-	-	\$72.8	5324, 1514, Local	\$14.56
Subtotal		\$84.8	\$75.2	\$2.5	\$2.5	\$2.6	\$2.7	\$85.6		\$17.0
SEPTA Total		\$1,576.1	\$373.5	\$309.7	\$319.0	\$328.5	\$338.4	\$1,669.1		\$1,143.6



Table F-1: Short-Term Passenger Rail Capital Project Funding Needs (2015-2019) in millions of inflation-adjusted Year Of Expenditure (YOE) Dollars, cont.

Project Number	Project Description	Estimated Cost in 2015 Dollars	2015 YOE	2016 YOE	2017 YOE	2018 YOE	2019 YOE	Total Short-Term Cost (YOE)	Funding Sources (see Notes at end of table)	Estimated PA State Match *
Amtrak Keystone Corridor										
State of Good Repair										
C.EN.100142	12kv Substation Breakers	\$3.0	\$0.6	\$0.6	\$0.6	\$0.7	\$0.7	\$3.2	Amtrak	\$0.0
C.EN.100046	Bryn Mawr Interlocking Turnout Replacement	\$1.0	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1.1	Amtrak	\$0.0
C.EN.101401	Catenary Hardware Renewal	\$4.0	\$0.8	\$0.8	\$0.8	\$0.9	\$0.9	\$4.2	Amtrak	\$0.0
C.EN.101413	Catenary Hardware Renewal	\$0.9	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1.0	Amtrak	\$0.0
C.EN.101173	Catenary Pole Replacement	\$2.3	\$0.5	\$0.5	\$0.5	\$0.5	\$0.5	\$2.4	Amtrak	\$0.0
C.EN.101425	Communications Shelter Backup Power	\$0.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	Amtrak	\$0.0
C.EN.101392	Conestoga Frequency Control House Design	\$0.3	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.3	Amtrak	\$0.0
C.EN.100663	Conestoga Step-up Yard Replace Transformer	\$9.5	\$1.9	\$2.0	\$2.0	\$2.1	\$2.1	\$10.1	Amtrak	\$0.0
C.EN.100282	Culverts	\$1.8	\$0.4	\$0.4	\$0.4	\$0.4	\$0.4	\$1.9	Amtrak	\$0.0
C.EN.101406	Frazer Sub 64 Transformer Installation	\$1.0	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1.1	Amtrak	\$0.0
C.EN.101386	Harrisburg Sub 72 Transformer Installation	\$1.0	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1.1	Amtrak	\$0.0
C.EN.101396	Kinzer Sub 67 Transformer Installation	\$1.0	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1.1	Amtrak	\$0.0
C.EV.100013	Lancaster PA Mail Tun Ground Water Mitigation	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	Amtrak	\$0.0
C.EN.101397	Landisville Sub 69 Transformer Installation	\$1.9	\$0.4	\$0.4	\$0.4	\$0.4	\$0.4	\$2.0	Amtrak	\$0.0
C.EN.101355	Manhole Covers	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	Amtrak	\$0.0
C.EN.101407	Paoli Sub 4 Transformer Installation	\$1.0	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1.1	Amtrak	\$0.0

Table F-1: Short-Term Passenger Rail Capital Project Funding Needs (2015-2019) in millions of inflation-adjusted Year Of Expenditure (YOE) Dollars, cont.

Project Number	Project Description	Estimated Cost in 2015 Dollars	2015 YOE	2016 YOE	2017 YOE	2018 YOE	2019 YOE	Total Short-Term Cost (YOE)	Funding Sources (see Notes at end of table)	Estimated PA State Match*
C.EN.101398	Parkeburg Sub 66 Transformer Installation	\$1.0	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1.1	Amtrak	\$0.0
C.EN.101467	Rheems Sub 70 Transformer Installation	\$1.9	\$0.4	\$0.4	\$0.4	\$0.4	\$0.4	\$2.0	Amtrak	\$0.0
C.EN.101171	Royalton Sub 71 Transformer Installation	\$0.9	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1.0	Amtrak	\$0.0
C.EN.101404	Royalton Sub 71 Transformer Installation #2	\$1.8	\$0.4	\$0.4	\$0.4	\$0.4	\$0.4	\$1.9	Amtrak	\$0.0
C.EN.100347	Safe Harbor Frequency Converter Upgrade	\$13.7	\$2.7	\$2.8	\$2.9	\$3.0	\$3.1	\$14.5	Amtrak	\$0.0
C.EN.100307	Signal Power Upgrades	\$1.1	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1.2	Amtrak	\$0.0
C.EN.101248	Static Wire Installation	\$0.5	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.5	Amtrak	\$0.0
C.EN.101412	Substation Upgrades	\$0.9	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1.0	Amtrak	\$0.0
C.EN.101405	Thorndale Sub 65 Transformer Installation	\$1.9	\$0.4	\$0.4	\$0.4	\$0.4	\$0.4	\$2.0	Amtrak	\$0.0
C.EN.101185	Transmission Line	\$0.4	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.4	Amtrak	\$0.0
C.EN.101395	Witmer Sub 68 Transformer Installation	\$1.0	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1.1	Amtrak	\$0.0
C.EN.101484	Wynfield Interlocking Renewal	\$11.5	\$2.3	\$2.4	\$2.4	\$2.5	\$2.6	\$12.2	Amtrak	\$0.0
C.EN.100751	Zoo-44th St Interlocking Reconfiguration	\$25.3	\$5.1	\$5.2	\$5.4	\$5.5	\$5.7	\$26.9	Amtrak	\$0.0
C.EN.201264	Zoo-Paoli Catenary Pole Design	\$3.0	\$0.6	\$0.6	\$0.6	\$0.7	\$0.7	\$3.2	Amtrak	\$0.0
	Subtotal	\$94.0	\$18.8	\$19.4	\$19.9	\$20.5	\$21.2	\$99.8		\$0.0



Table F-1: Short-Term Passenger Rail Capital Project Funding Needs (2015-2019) in millions of inflation-adjusted Year Of Expenditure (YOE) Dollars, cont.

Project Number	Project Description	Estimated Cost in 2015 Dollars	2015 YOE	2016 YOE	2017 YOE	2018 YOE	2019 YOE	Total Short-Term Cost (YOE)	Funding Sources (see Notes at end of table)	Estimated PA State Match*
Amtrak Keystone Corridor System Enhancements										
C.EN.100894	Exton New High Level Platform Station	\$2.0	\$0.4	\$0.4	\$0.4	\$0.4	\$0.5	\$2.1	Amtrak	\$0.0
C.EN.100891	New Middletown Station	\$32.0	\$6.4	\$6.6	\$6.8	\$7.0	\$7.2	\$34.0	5307, 341	\$6.6
C.EN.100417	Mount Joy Station Improvements	\$30.0	\$6.0	\$6.2	\$6.4	\$6.6	\$6.8	\$31.9	5307, 5309, 341	\$6.2
C.EN.100793	Cynwyd / Paxton Interlocking Renewal	\$3.0	\$0.6	\$0.6	\$0.6	\$0.7	\$0.7	\$3.2	5307, 5309, 5337, 1514	\$0.6
C.EN.100892	Interlocking Improvements Design	\$0.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	Amtrak	\$0.0
C.EN.101312	PA002.88 41 St Catenary Improvements	\$1.0	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1.1	Federal and State Grants (Bridge Replacement Project)	\$0.2
C.EN.100885	PA067.85 Lititz Pike Bridge Catenary Improvements	\$0.3	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.3	Federal and State Grants (Bridge Replacement Project)	\$0.1
C.EN.100898	PA080.03 Marietta St Bridge Catenary Improvements	\$0.3	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.3	Federal and State Grants (Bridge Replacement Project)	\$0.1
C.EN.101488	Paoli Interlocking Renewal	\$31.0	\$6.2	\$6.4	\$6.6	\$6.8	\$7.0	\$32.9	Amtrak	\$0.0

Table F-1: Short-Term Passenger Rail Capital Project Funding Needs (2015-2019) in millions of inflation-adjusted Year Of Expenditure (YOE) Dollars, cont.

Project Number	Project Description	Estimated Cost in 2015 Dollars	2015 YOE	2016 YOE	2017 YOE	2018 YOE	2019 YOE	Total Short-Term Cost (YOE)	Funding Sources (see Notes at end of table)	Estimated PA State Match *
C.EN.100416	State Interlocking Renewal (Harrisburg)	\$43.0	\$8.6	\$8.9	\$9.1	\$9.4	\$9.7	\$45.7	Federal ARRA Funding	\$0.0
N/A	Harrisburg ADA Improvements (Elevator & High Level Platforms)**	\$11.5	\$2.3	\$2.4	\$2.4	\$2.5	\$2.6	\$12.2	Amtrak	\$0.0
N/A	New "Potts" Interlocking (Including Glen 103 Switch Removal & Retire Downs Interlocking) **	\$23.4	\$4.7	\$4.8	\$5.0	\$5.1	\$5.3	\$24.8	Amtrak	\$0.0
N/A	New "Villa" & "Nova" Interlockings Bracketing Villanova Station (To Replace Bryn Mawr Interlocking) **	\$82.2	\$0.0	\$0.0	\$0.0	\$0.0	\$92.5	\$92.5	Amtrak	\$0.0
N/A	New Bailey Interlocking (Retires Thorn / Caln) **	\$46.6	\$0.0	\$0.0	\$0.0	\$0.0	\$52.4	\$52.4	Amtrak	\$0.0
N/A	New Cab No-Wayside Signal System Paoli To Zoo **	\$17.5	\$3.5	\$3.6	\$3.7	\$3.8	\$3.9	\$18.6	Amtrak	\$0.0
N/A	New Cab No-Wayside Signal System Park To Paoli **	\$17.5	\$3.5	\$3.6	\$3.7	\$3.8	\$3.9	\$18.6	Amtrak	\$0.0
N/A	New Coatesville Station (Preliminary Engineering) **	\$40.0	\$8.0	\$8.2	\$8.5	\$8.7	\$9.0	\$42.5	Amtrak	\$0.0
N/A	New Downingtown Station (Preliminary Engineering) **	\$35.0	\$7.0	\$7.2	\$7.4	\$7.6	\$7.9	\$37.2	Amtrak	\$0.0
N/A	SEPTA Cynwyd Connection (Includes 52nd Street Bridge Rehabilitation) **	\$9.0	\$1.8	\$1.9	\$1.9	\$2.0	\$2.0	\$9.6	Amtrak	\$1.91
	Subtotal	\$425.5	\$59.3	\$61.1	\$63.0	\$64.8	\$211.8	\$460.0		\$15.6



Table F-1: Short-Term Passenger Rail Capital Project Funding Needs (2015-2019) in millions of inflation-adjusted Year Of Expenditure (YOE) Dollars, cont.

Project Number	Project Description	Estimated Cost in 2015 Dollars	2015 YOE	2016 YOE	2017 YOE	2018 YOE	2019 YOE	Total Short-Term Cost (YOE)	Funding Sources (see Notes at end of table)	Estimated PA State Match *
Amtrak Keystone Corridor										
Safety Improvements										
C.EN.100127	Grade Crossing Elimination	\$0.4	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.4	Amtrak, Federal Grants	\$0.0
N/A	Benders Road Private Grade Crossing Closure**	\$1.5	\$0.3	\$0.3	\$0.3	\$0.3	\$0.3	\$1.6	Amtrak, Federal Grants	\$0.0
	Subtotal	\$1.9	\$0.4	\$0.4	\$0.4	\$0.4	\$0.4	\$2.0		\$0.0
	Keystone Corridor Total	\$521.4	\$78.5	\$80.9	\$83.3	\$85.8	\$233.3	\$561.8		\$15.6
Amtrak NEC										
State of Good Repair										
C.EN.100873	30th St Station Block Ties	\$5.7	\$1.1	\$1.2	\$1.2	\$1.2	\$1.3	\$6.1	Amtrak	\$0.0
C.EN.101299	Baldwin Interlocking Turnout Renewal	\$3.4	\$0.7	\$0.7	\$0.7	\$0.7	\$0.8	\$3.6	Amtrak	\$0.0
C.EN.101480	Ballast Mid-Atlantic Division - Shoulder Cleaning Program	\$1.0	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1.1	Amtrak	\$0.0
C.EN.101486	Ballast New York Division - Shoulder Cleaning Program	\$1.0	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1.1	Amtrak	\$0.0
C.EN.101280	Clearfield Interlocking Renewal	\$6.9	\$1.4	\$1.4	\$1.5	\$1.5	\$1.6	\$7.3	Amtrak	\$0.0

Table F-1: Short-Term Passenger Rail Capital Project Funding Needs (2015-2019) in millions of inflation-adjusted Year Of Expenditure (YOE) Dollars, cont.

Project Number	Project Description	Estimated Cost in 2015 Dollars	2015 YOE	2016 YOE	2017 YOE	2018 YOE	2019 YOE	Total Short-Term Cost (YOE)	Funding Sources (see Notes at end of table)	Estimated PA State Match*
C.EN.101440	Holmes Interlocking C&S Upgrades	\$2.0	\$0.4	\$0.4	\$0.4	\$0.4	\$0.5	\$2.1	Amtrak	\$0.0
C.EN.101298	Hook Interlocking Turnout Renewal	\$6.2	\$1.2	\$1.3	\$1.3	\$1.4	\$1.4	\$6.6	Amtrak	\$0.0
C.EN.101436	Hook Interlocking Upgrade to Microlok 2	\$5.2	\$1.0	\$1.1	\$1.1	\$1.1	\$1.2	\$5.5	Amtrak	\$0.0
C.EN.101499	Holmes Interlocking Renewal	\$17.0	\$3.4	\$3.5	\$3.6	\$3.7	\$3.8	\$18.1	Amtrak	\$0.0
C.EN.101393	Lamokin Sub 11 Transformer Installation	\$1.8	\$0.4	\$0.4	\$0.4	\$0.4	\$0.4	\$1.9	Amtrak	\$0.0
C.EN.100042	Lamokin Transformer Breakers Renewal	\$6.7	\$1.3	\$1.4	\$1.4	\$1.5	\$1.5	\$7.1	Amtrak	\$0.0
C.EN.101283	Lehigh Interlocking Renewal	\$16.4	\$3.3	\$3.4	\$3.5	\$3.6	\$3.7	\$17.4	Amtrak	\$0.0
C.EN.101249	MAD Retaining Wall Upgrades	\$9.3	\$1.9	\$1.9	\$2.0	\$2.0	\$2.1	\$9.9	Amtrak	\$0.0
C.EN.101244	MAD Tunnel Construction & Upgrades	\$2.4	\$0.5	\$0.5	\$0.5	\$0.5	\$0.5	\$2.5	Amtrak	\$0.0
C.EN.101259	MAD Undergrade Bridge Upgrades	\$46.9	\$9.4	\$9.7	\$10.0	\$10.2	\$10.6	\$49.8	Amtrak	\$0.0
C.EN.101426	MAD Communications Shelter Alarm System Upgrades	\$0.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	Amtrak	\$0.0
C.EN.101100	MAD Concrete Tie Replacement	\$12.6	\$2.5	\$2.6	\$2.7	\$2.8	\$2.8	\$13.4	Amtrak	\$0.0
C.EN.101356	MAD Install Secure Manhole Covers	\$0.5	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.5	Amtrak	\$0.0
C.EN.101326	MAD North Convert Track Circuits to 562	\$2.5	\$0.5	\$0.5	\$0.5	\$0.5	\$0.6	\$2.7	Amtrak	\$0.0



Table F-1: Short-Term Passenger Rail Capital Project Funding Needs (2015-2019) in millions of inflation-adjusted Year Of Expenditure (YOE) Dollars, cont.

Project Number	Project Description	Estimated Cost in 2015 Dollars	2015 YOE	2016 YOE	2017 YOE	2018 YOE	2019 YOE	Total Short-Term Cost (YOE)	Funding Sources (see Notes at end of table)	Estimated PA State Match*
C.EN.101348	MAD Renew Pads, Clips, and Insulators	\$1.3	\$0.3	\$0.3	\$0.3	\$0.3	\$0.3	\$1.4	Amtrak	\$0.0
C.EN.101361	MAD Ride Quality Improvements	\$62.5	\$12.5	\$12.9	\$13.3	\$13.7	\$14.1	\$66.4	Amtrak	\$0.0
C.EN.100379	MAD Bridge Timber Replacement	\$6.5	\$1.3	\$1.3	\$1.4	\$1.4	\$1.5	\$6.9	Amtrak	\$0.0
C.EN.100260	MAD North Signal Bridge Upgrade	\$5.3	\$1.1	\$1.1	\$1.1	\$1.2	\$1.2	\$5.6	Amtrak	\$0.0
C.EN.100204	MAD North Hot Box Detector Replacement	\$0.5	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.5	Amtrak	\$0.0
C.EN.101470	MAD North Signal Bridge Fall Protection	\$1.5	\$0.3	\$0.3	\$0.3	\$0.3	\$0.3	\$1.6	Amtrak	\$0.0
C.EN.100324	MAD S Substation Control House Upgrades	\$0.9	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1.0	Amtrak	\$0.0
C.EN.201274	MAD Transmission Breaker Design	\$1.2	\$0.2	\$0.2	\$0.3	\$0.3	\$0.3	\$1.3	Amtrak	\$0.0
C.EN.100362	MAD Turnout Replacement	\$17.9	\$3.6	\$3.7	\$3.8	\$3.9	\$4.0	\$19.0	Amtrak	\$0.0
C.EN.101263	Mid Atlantic Division Culvert Upgrades	\$10.1	\$2.0	\$2.1	\$2.1	\$2.2	\$2.3	\$10.7	Amtrak	\$0.0
C.EN.101329	Mid-Atlantic Div C&S Interlocking Upgrades	\$2.0	\$0.4	\$0.4	\$0.4	\$0.4	\$0.5	\$2.1	Amtrak	\$0.0
C.EN.101359	Mid-Atlantic Div Communications Equipment Houses	\$0.3	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.3	Amtrak	\$0.0
C.EN.101118	Mid-Atlantic Div Drainage Upgrades	\$10.6	\$2.1	\$2.2	\$2.2	\$2.3	\$2.4	\$11.3	Amtrak	\$0.0
C.EN.101340	Mid-Atlantic Div Event Recorders Upgrades	\$0.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	Amtrak	\$0.0

Table F-1: Short-Term Passenger Rail Capital Project Funding Needs (2015-2019) in millions of inflation-adjusted Year Of Expenditure (YOE) Dollars, cont.

Project Number	Project Description	Estimated Cost in 2015 Dollars	2015 YOE	2016 YOE	2017 YOE	2018 YOE	2019 YOE	Total Short-Term Cost (YOE)	Funding Sources (see Notes at end of table)	Estimated PA State Match*
C.EN.101101	Mid-Atlantic Div Insulation Joints	\$7.9	\$1.6	\$1.6	\$1.7	\$1.7	\$1.8	\$8.4	Amtrak	\$0.0
C.EN.101465	Mid-Atlantic Div-352 Signal Power Breaker	\$0.6	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.6	Amtrak	\$0.0
C.EN.100954	Mid-Atlantic Div Concrete Tie Replacement	\$215.8	\$43.2	\$44.5	\$45.8	\$47.2	\$48.6	\$229.1	Amtrak	\$0.0
C.EN.101183	Mid-Atlantic Division Spot Undercutting	\$20.2	\$4.0	\$4.2	\$4.3	\$4.4	\$4.5	\$21.4	Amtrak	\$0.0
C.EN.100994	Mid-Atlantic Interlocking Steel Renewal	\$22.1	\$4.4	\$4.6	\$4.7	\$4.8	\$5.0	\$23.5	Amtrak	\$0.0
C.EN.101122	Mid-Atlantic Joint Elimination	\$22.1	\$4.4	\$4.6	\$4.7	\$4.8	\$5.0	\$23.5	Amtrak	\$0.0
C.EN.101421	Mid-Atlantic North C&S Cable Replacement	\$0.3	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.3	Amtrak	\$0.0
C.EN.101102	Mid-Atlantic Surfacing Program	\$54.1	\$10.8	\$11.1	\$11.5	\$11.8	\$12.2	\$57.4	Amtrak	\$0.0
C.EN.101003	Mid-Atlantic Tie / Timber Replacement	\$64.7	\$12.9	\$13.3	\$13.7	\$14.1	\$14.6	\$68.7	Amtrak	\$0.0
C.EN.100276	Morris-Holmes Catenary Upgrades	\$1.3	\$0.3	\$0.3	\$0.3	\$0.3	\$0.3	\$1.4	Amtrak	\$0.0
C.EN.101362	New York Div Ride Quality Improvement Program	\$4.7	\$0.9	\$1.0	\$1.0	\$1.0	\$1.1	\$5.0	Amtrak	\$0.0
C.EN.101332	North Penn Interlocking C&S Upgrades	\$3.0	\$0.6	\$0.6	\$0.6	\$0.7	\$0.7	\$3.2	Amtrak	\$0.0
C.EN.101320	North Penn InterlockinF-C&S Upgrades Design	\$0.3	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.3	Amtrak	\$0.0
C.EN.101245	NY DIV Retaining Wall Upgrades	\$10.3	\$2.1	\$2.1	\$2.2	\$2.3	\$2.3	\$10.9	Amtrak	\$0.0



Table F-1: Short-Term Passenger Rail Capital Project Funding Needs (2015-2019) in millions of inflation-adjusted Year Of Expenditure (YOE) Dollars, cont.

Project Number	Project Description	Estimated Cost in 2015 Dollars	2015 YOE	2016 YOE	2017 YOE	2018 YOE	2019 YOE	Total Short-Term Cost (YOE)	Funding Sources (see Notes at end of table)	Estimated PA State Match*
C.EN.101262	NY DIV Undergrade Bridge Upgrades	\$31.8	\$6.4	\$6.6	\$6.7	\$6.9	\$7.2	\$33.8	Amtrak	\$0.0
C.EN.100159	NY DIV Catenary Pole	\$4.0	\$0.8	\$0.8	\$0.8	\$0.9	\$0.9	\$4.2	Amtrak	\$0.0
C.EN.100857	NY DIV Concrete Tie Replacement	\$10.0	\$2.0	\$2.1	\$2.1	\$2.2	\$2.3	\$10.6	Amtrak	\$0.0
C.EN.101099	NY DIV NJT Territory-Joint Elimination	\$1.4	\$0.3	\$0.3	\$0.3	\$0.3	\$0.3	\$1.5	Amtrak	\$0.0
C.EN.101002	NY DIV Non-NJT Territory Insulated Joint	\$1.5	\$0.3	\$0.3	\$0.3	\$0.3	\$0.3	\$1.6	Amtrak	\$0.0
C.EN.100995	NY DIV Non-NJT Territory Joint Elimination	\$1.5	\$0.3	\$0.3	\$0.3	\$0.3	\$0.3	\$1.6	Amtrak	\$0.0
C.EN.100689	NY DIV Spot Renew Pads, Clips, and Insulators	\$1.1	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1.2	Amtrak	\$0.0
C.EN.100230	NY DIV West Joint Elimination	\$4.8	\$1.0	\$1.0	\$1.0	\$1.0	\$1.1	\$5.1	Amtrak	\$0.0
C.EN.100173	NY DIV Concrete Ties Replacement	\$9.5	\$1.9	\$2.0	\$2.0	\$2.1	\$2.1	\$10.1	Amtrak	\$0.0
C.EN.101382	PA014.28 Lloyd St Catenary Improvements	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	Non-Amtrak funded Bridge Replacement Related Work	\$0.0
C.EN.100091	Phil Subdiv Catenary Pole Replacement	\$2.7	\$0.5	\$0.6	\$0.6	\$0.6	\$0.6	\$2.9	Amtrak	\$0.0
C.EN.100096	Phil Subdiv Interlocking Remote Terminal Unit Replacement	\$0.5	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.5	Amtrak	\$0.0

Table F-1: Short-Term Passenger Rail Capital Project Funding Needs (2015-2019) in millions of inflation-adjusted Year Of Expenditure (YOE) Dollars, cont.

Project Number	Project Description	Estimated Cost in 2015 Dollars	2015 YOE	2016 YOE	2017 YOE	2018 YOE	2019 YOE	Total Short-Term Cost (YOE)	Funding Sources (see Notes at end of table)	Estimated PA State Match*
C.EN.101402	Philadelphia Subdiv Catenary	\$0.9	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1.0	Amtrak	\$0.0
C.EN.101186	Philadelphia Subdiv Install Static Wire	\$0.5	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.5	Amtrak	\$0.0
C.EN.101408	Philadelphia Subdiv Substation Upgrades	\$1.8	\$0.4	\$0.4	\$0.4	\$0.4	\$0.4	\$1.9	Amtrak	\$0.0
C.EN.101410	Philadelphia Subdiv Substation Upgrades	\$1.1	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1.2	Amtrak	\$0.0
C.EN.101187	Philadelphia Subdiv Transmission Line	\$0.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	Amtrak	\$0.0
C.EN.100090	Phl-Wil Catenary Structure Replacement	\$2.7	\$0.5	\$0.6	\$0.6	\$0.6	\$0.6	\$2.9	Amtrak	\$0.0
C.EN.100044	Richmond Frequency Circuit Breakers	\$6.5	\$1.3	\$1.3	\$1.4	\$1.4	\$1.5	\$6.9	Amtrak	\$0.0
C.EN.101331	South Penn Interlocking C&S Upgrades	\$8.5	\$1.7	\$1.8	\$1.8	\$1.9	\$1.9	\$9.0	Amtrak	\$0.0
C.EN.100679	South Penn Interlocking Renewal	\$9.6	\$1.9	\$2.0	\$2.0	\$2.1	\$2.2	\$10.2	Amtrak	\$0.0
C.EN.101319	South Penn Interlocking C&S Upgrades Design	\$0.3	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.3	Amtrak	\$0.0
C.EN.101140	Sub 32 to Sub 34 Signal Power System Upgrades	\$0.9	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1.0	Amtrak	\$0.0
C.EN.101498	Sub Bellevue Sub 12 Transformer Installation	\$1.0	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1.1	Amtrak	\$0.0
C.EN.101479	Sub Cornwells Sub 32 Transformer Installation	\$1.0	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1.1	Amtrak	\$0.0

Table F-1: Short-Term Passenger Rail Capital Project Funding Needs (2015-2019) in millions of inflation-adjusted Year Of Expenditure (YOE) Dollars, cont.

Project Number	Project Description	Estimated Cost in 2015 Dollars	2015 YOE	2016 YOE	2017 YOE	2018 YOE	2019 YOE	Total Short-Term Cost (YOE)	Funding Sources (see Notes at end of table)	Estimated PA State Match*
C.EN.101476	Sub Edgely Sub 33 Transformer Installation	\$1.0	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1.1	Amtrak	\$0.0
C.EN.101475	Sub Frankford Sub 30 Transformer Installation	\$1.0	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1.1	Amtrak	\$0.0
C.EN.101473	Mid-Atlantic Division Support Facilities / Track Rehabilitation	\$4.2	\$0.8	\$0.9	\$0.9	\$0.9	\$0.9	\$4.5	Amtrak	\$0.0
C.EN.100269	Wash-New York Sys Undercutting	\$202.3	\$40.5	\$41.7	\$42.9	\$44.2	\$45.5	\$214.8	Amtrak	\$0.0
	Subtotal	\$1,008.3	\$201.7	\$207.7	\$213.9	\$220.4	\$227.0	\$1,070.6		\$0.0
Amtrak NEC										
System Enhancements										
C.EN.100039	30th Street Station Facade Repair	\$73.0	\$14.6	\$15.0	\$15.5	\$16.0	\$16.4	\$77.5	Amtrak	\$0.0
C.EN.100213	30th Street Station Fire Alarm System	\$1.0	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1.1	Amtrak	\$0.0
C.EN.100627	30th Street Station Elevator Replacement	\$21.4	\$4.3	\$4.4	\$4.5	\$4.7	\$4.8	\$22.7	Amtrak	\$0.0
C.EN.100837	30th Street Station HVAC Control Upgrade	\$7.1	\$1.4	\$1.5	\$1.5	\$1.6	\$1.6	\$7.5	Amtrak	\$0.0
C.SP.100022	30th Street Station Signage	\$1.6	\$0.3	\$0.3	\$0.3	\$0.3	\$0.4	\$1.7	State Funding	\$1.6
C.SP.100033	30th Street Station Concourse & Facilities Upgrades	\$20.0	\$4.0	\$4.1	\$4.2	\$4.4	\$4.5	\$21.2	Amtrak	\$0.0

Table F-1: Short-Term Passenger Rail Capital Project Funding Needs (2015-2019) in millions of inflation-adjusted Year Of Expenditure (YOE) Dollars, cont.

Project Number	Project Description	Estimated Cost in 2015 Dollars	2015 YOE	2016 YOE	2017 YOE	2018 YOE	2019 YOE	Total Short-Term Cost (YOE)	Funding Sources (see Notes at end of table)	Estimated PA State Match*
C.EN.101221	30th Street Station Construction Upgrades	\$36.4	\$7.3	\$7.5	\$7.7	\$8.0	\$8.2	\$38.7	Amtrak	\$0.0
	Subtotal	\$160.5	\$32.1	\$33.1	\$34.1	\$35.1	\$36.1	\$170.4		\$1.6
Amtrak NEC										
Safety Improvements										
C.EN.100702	30th Street Station Emergency Generator	\$0.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2	Amtrak	\$0.0
C.EN.100794	SEPTA Stations Intertack Fence	\$0.6	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.6	Amtrak	\$0.0
	Subtotal	\$0.8	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$0.8		
	NEC Total	\$1,169.6	\$233.9	\$240.9	\$248.2	\$255.6	\$263.3	\$1,241.9		\$1.7
	Amtrak Total	\$1,691.0	\$312.4	\$321.8	\$331.5	\$341.4	\$496.6	\$1,803.8		\$17.3
	GRAND TOTAL SEPTA and Amtrak	\$3,267.1	\$685.9	\$631.5	\$650.4	\$670.0	\$835.0	\$3,472.8		\$1,160.9

Notes: All costs shown in millions of dollars
 Amtrak NEC Projects include division-wide that extend beyond Pennsylvania
 Amtrak Funding Subject to Congressional Appropriation
 NY DIV= New York Division
 MAD DIV= Mid-Atlantic Division
 C&S = Communications & Signals
 Year of Expenditure (YOE) Calculation based on PennDOT standard 3% inflation rate
 Projects that are listed in the SEPTA Capital Plan as system-wide projects were pro-rated based on historic data
 * Pennsylvania state funding is allocated through a competitive process and match is not guaranteed.
 ** Projects that do not appear in either the Amtrak Five Year Capital Plan or the SEPTA Twelve Year Capital Plan.

Funding Explanation
FEDERAL FUNDING CATEGORIES
 5307 Federal Urbanized Area Formula Program
 5309 Federal New Starts Capital Program
 5310 Federal Elderly and Persons with Disabilities Program
 5311 Federal Non-urbanized Area Formula Program
 5324 Public Transportation Emergency Relief Program
 Above Grants Generally Require 20% Non-Federal Match
 ARPA American Recovery and Rebuilding Act (Stimulus Funding, No Local Match Required)
STATE FUNDING
 1514 State Capital Budget/Asset Improvement Discretionary
 1517 State Capital Improvements
 1516 State Programs of Statewide Significance
 Above Grants Require 3.33% local match
 341 State Community Transportation Equipment Grant
 RACP Redevelopment Assistance Capital Program