Philadelphia Overhead Bridge Rehabilitation Program: Facilitating Rehabilitation of City Bridges that Span Electrified Rail Lines

Bridge Investment Program (BIP)
Funding Opportunity: 693JJ322NF00009
Funding Opportunity Title: Bridge Investment Program - Planning, Bridge Projects, and Large Bridge Projects

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BIP Planning Grant Application
Location: Philadelphia, Pennsylvania
Area Type: Urban
Amount Requested: $1,560,000

City of Philadelphia
Municipal Services Building
1401 John F. Kennedy Boulevard
Philadelphia, PA 19102

July 25, 2022

City of Philadelphia

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City of Philadelphia

SECTION 1. BASIC PROJECT INFORMATION

1.1 PROJECT NAME

Philadelphia Overhead Bridge Rehabilitation Program: Facilitating Rehabilitation of City Bridges that Span Electrified Rail Lines

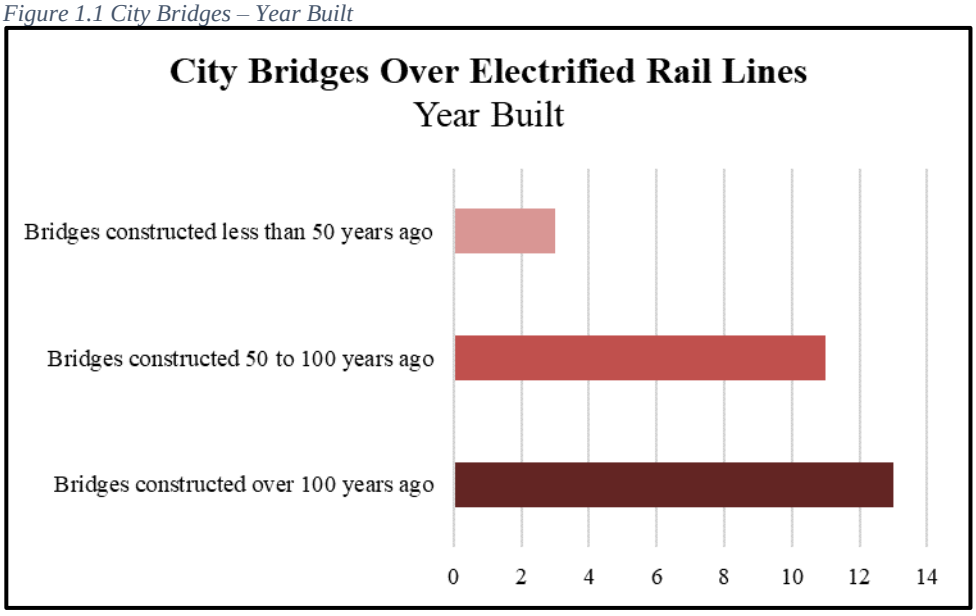
1.2 PROJECT DESCRIPTION

Philadelphia Overhead Bridge Rehabilitation Program: Facilitating Rehabilitation of City Bridges that Span Electrified Rail Lines application will fund a comprehensive planning and feasibility study to develop efficient strategies and cost-effective solutions for improving bridge conditions and the safety, efficiency, and reliability of the movement of people and freight. The project specifically focuses on bridges that span electrified rail lines primarily operated by Amtrak and the Southeastern Pennsylvania Transit Authority (SEPTA). Our primary objective is to complete the planning and feasibility work needed to craft a strategy for advance removal of attached overhead catenary wires on these structures, enabling potential future Bridge or Large Bridge Project grant applications to rehabilitate and replace bridges that are in poor condition on the National Bridge Inventory (NBI).

Transportation Challenges

The City owns or maintains approximately 27 bridges that traverse electrified passenger rail lines. Many of these bridges are in poor condition and need replacement or rehabilitation now or in the near future. Eleven bridges crossover over the Northeast and Keystone corridors which include Amtrak's high-speed Acela train service as well as long-distance train services. Fourteen bridges span SEPTA right-of-way which includes SEPTA's Regional Rail. Two bridges span both Amtrak and SEPTA right-of-way. Of these 27 bridges, only three were built within the past 50 years and most were originally constructed over a century ago.

Figure 1.1 City Bridges – Year Built



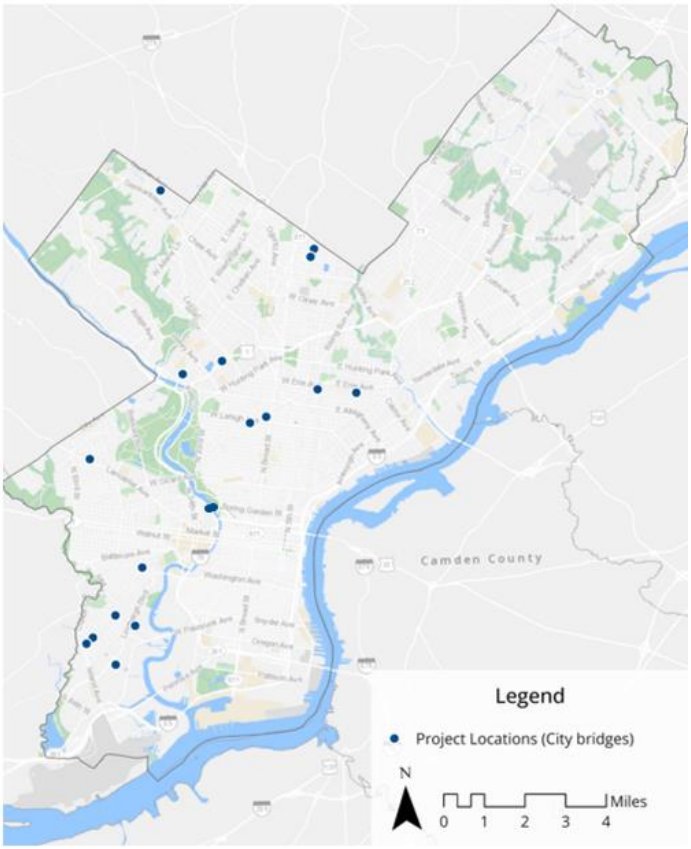
Most of these bridges are in poor condition or in fair condition at risk of falling into poor condition. Eighteen of the 27 bridges referenced above are rated fair, poor, or lower in at least one of FHWA

NBI's condition ratings (deck condition, superstructure condition, or substructure condition). This affects the safety and reliability of roadway users traveling over the bridges as well as rail passengers traveling underneath. According to NBI data, five bridges that are identified as arterials and critical to supporting surface transportation in Philadelphia and the greater region. Three bridges exceed average daily traffic volumes (ADT) of 20,000 and three additional bridges exceed ADTs of 10,000.

Figure 1.2 Project Location Map

PROJECT LOCATIONS
(Structure # - Facility Carried/Feature Intersected)

- 39105 - Abbottsford Ave. / SEPTA
- 39171 - Margie St. / Amtrak
- 39093 - 2nd St. / Amtrak
- 39149 - G St. / Amtrak
- 39174 - 70th St. / Amtrak
- 39150 - Glenwood Ave. / SEPTA
- 39200 - 49th St. / SEPTA
- 39152 - 61st St. / SEPTA
- 39156 - 59th St. / Amtrak
- 39179 - 72nd St. / Amtrak
- 39117 - Calumet St. / SEPTA
- 38968 - Spring Garden St. / Amtrak & SEPTA
- 39266 - Oak Lane / SEPTA
- 39267 - 66th St. / SEPTA
- 39168 - 62nd St. / Amtrak
- 38970 - Spring Garden St. / Amtrak & SEPTA
- 39246 - 70th St. / SEPTA
- 39239 - Gravers Lane / SEPTA

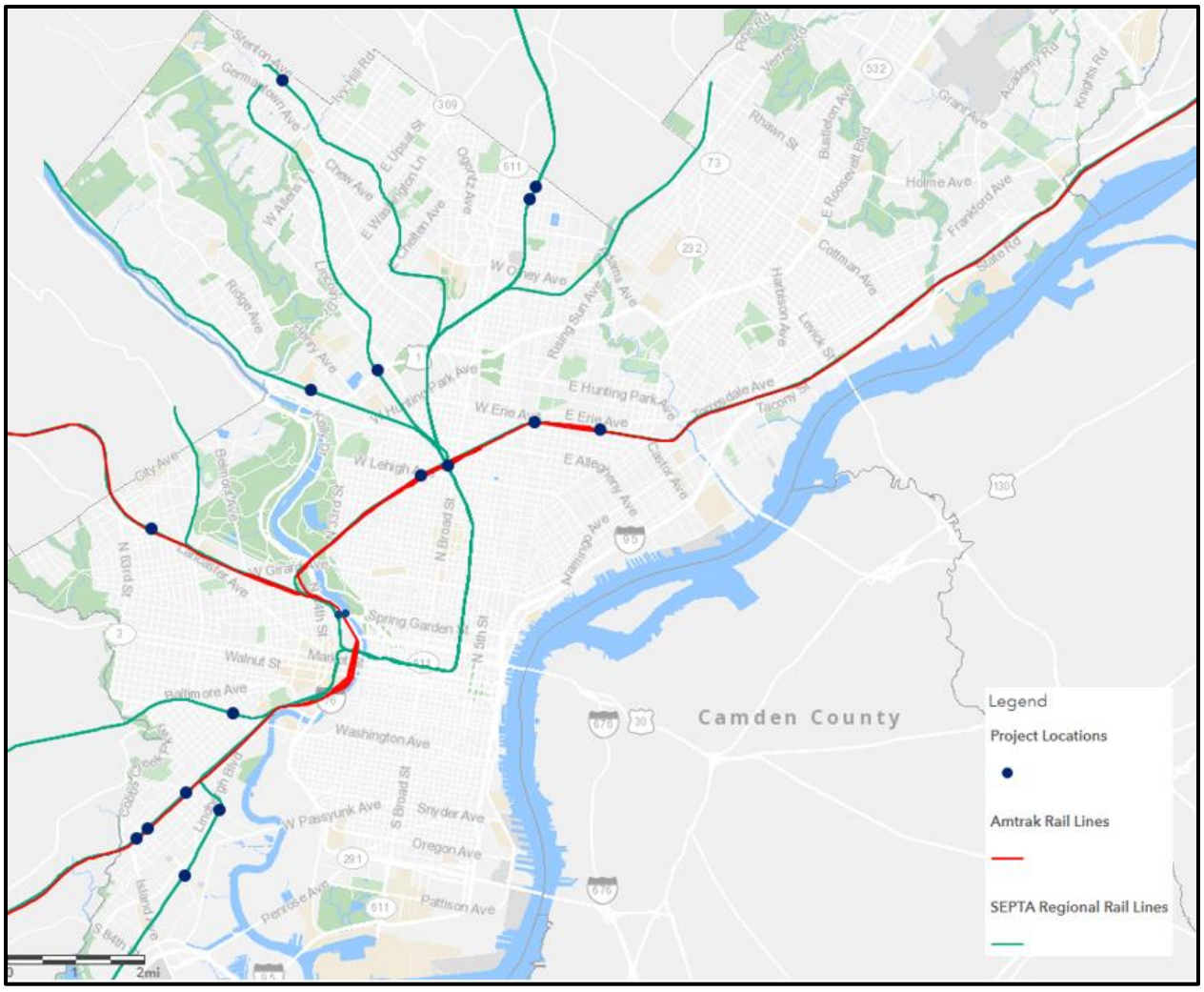


Perhaps more importantly, these bridges impact the safety and reliability of service on regionally and nationally significant electrified passenger rail lines. As the age of these structures continues to advance, deteriorating bridges will require more repairs which negatively impact Amtrak and SEPTA service. Amtrak's rail operations within Philadelphia, which include William F. Gray III 30th Street Station (Gray 30th Street Station) are vital to the Northeast Corridor. As the third busiest station in Amtrak's national system, Gray 30th Street Station serves Amtrak's high-speed Acela, Northeast Regional, Keystone and long-distance train services, serving over 4 million Amtrak rail passengers and over 12 million SEPTA and NJ TRANSIT rail commuters annually (pre-pandemic). The station complex is also a critical hub of city transportation services with dozens of subway, trolley, and bus routes serving the station. On an average weekday, well over 100,000 people pass through. Maintaining reliable bridge infrastructure is vital to ensuring Amtrak can reliably and safely serve passengers traveling along the Northeast and Keystone corridors. SEPTA Regional Rail operations within Philadelphia are critical to facilitating travel and supporting economic development in the greater region. All 13 of SEPTA's Regional Rail routes travel through Philadelphia and each rail line is supported by at least one bridge listed in Figure

1.2. Pre-pandemic, SEPTA's Regional Rail system served approximately 132,000 riders daily and over 34 million throughout the year.

Keeping these bridges operational is critical to ensuring safe, efficient, and reliable movement of people and freight in Philadelphia, the region, and the Northeast Corridor. Rehabilitating and replacing bridges that span electrified rail lines is challenging and complex. The existing railroad catenary infrastructure directly connects to, interacts with, or is supported by many, if not all, of these bridges. This dependence complicates bridge maintenance, rehabilitation, and/or replacement activities by requiring the existing railroad infrastructure to be relocated, modified, or replaced in advance of the bridge project. Such modifications require extensive planning and lengthy coordination which can delay bridge projects for years.

Figure 1.3 Project Location Map with Rail Lines



Solutions to the Transportation Challenges

The planning and feasibility work undertaken by this project will enable bridge improvement projects and provide significant direct and indirect benefits to roadway users along with Amtrak and SEPTA passengers. Most importantly, a BIP Planning grant will allow the City to work with Amtrak and SEPTA to develop a comprehensive strategy for improving the condition of aging

bridges as well as prioritize and bundle bridges for future Bridge Project and Large Bridge Project grant funding opportunities. To enable the development of future projects, the City will develop a strategy for removing existing catenary infrastructure from bridges that are in poor condition in advance of bridge replacement and rehabilitation projects. Effectively prioritizing projects means that resources can be focused on addressing structures in the poorest condition which will allow us to identify and address hazards proactively and in the most cost-effective fashion.

Advancing these projects also the provides an opportunity for the City along with Amtrak and SEPTA to establish a "fresh canvas" by creating new portals with fewer constraints on the placement, maintenance, and profiling of catenary and other Amtrak and SEPTA facilities. Ultimately this will contribute significantly to the efficiency and reliability of rail service on these corridors.

The **Philadelphia Overhead Bridge Rehabilitation Program** project will include the following activities:

Partner Collaboration

- Convene Amtrak, SEPTA, PennDOT and other stakeholders to refine the objectives of the plan and establish points of contact and mutual expectations.
- Review and document best practices in terms of prioritization and project delivery strategies applicable to bridge rehabilitation and other capital improvements to address impediments to safety, reliability, and maintenance requirements.

Planning and Existing Conditions Analysis

- Review inspection reports and conduct additional inspections to document existing conditions of City bridges and apply best practice methods to anticipate deterioration.
- Assess the existing conditions of electrification systems.
- Evaluate the impacts of utilities and other easements on structural conditions and constructability.

Subsurface Investigations

- Conduct subsurface investigations that will inform the development of electrification support system concepts.

Project Development:

- Identify and program prioritized bridge rehabilitation projects.
- Identify and program a prioritized set of both temporary and permanent modifications to existing catenary systems to accommodate near term maintenance and reliability efforts, as well as future bridge rehabilitation.

- Develop an acceptable plan for the advanced relocation, modification, or replacement of existing railroad infrastructure so that future bridge rehabilitation or replacement projects can proceed more efficiently and with fewer dependencies.
- Develop an action plan that is suitable for immediate application in the City of Philadelphia as well as effective transfer of knowledge to other localities on the Amtrak network.

The proposed project, which is located primarily in historically disadvantaged communities and areas of persistent poverty, seeks to achieve the BIP program goals of proactively addressing equity and barriers to opportunity. According to data provided by U.S. DOT, 16 of the 18 project locations are located in census tracts designated by U.S. DOT. Focusing investment in these areas will help direct long-overdue infrastructure investments to historically disadvantaged neighborhoods in Philadelphia.

1.3 STATE(S) IN WHICH THE PROJECT IS LOCATED:

Pennsylvania.

1.4 DOES THE PROJECT SERVE AN URBAN OR RURAL COMMUNITY?

The proposed project is located within the City of Philadelphia, PA, Urbanized Area (UZA), and in the Congressional District PA-02. The Philadelphia UZA is the fifth largest UZA in the nation and had a 2010 Decennial Census population of 5,441,567. The full land area of the UZA occupies 1,981 square miles across four states. The City of Philadelphia's 2010 population was 1,526,006, which grew by 5 percent, to 1,603,797, in 2020.

1.5 TOTAL PROJECT COST (ESTIMATED TO INCLUDE PLANNING AND CONSTRUCTION COSTS)

Estimate in year-of-expenditure dollars: $1,950,000

1.6 PROJECT SPONSOR

Project Sponsor: City of Philadelphia
Eligible Applicant Category: A political subdivision of a State or local government

1.7 LIST ALL PROJECT CO-APPLICANTS

None, not applicable.

1.8 IDENTIFY THE LEAD APPLICANT

The City of Philadelphia.

Point of Contact: Patrick Clark, Infrastructure Grants Manager, Patrick.f.clark@phila.gov

1.9 PREVIOUS SUBMISSIONS

No, not applicable.

SECTION 2. NATIONAL BRIDGE INVENTORY DATA

National Bridge Inventory Data - For each bridge included in the project description above, fill out the NBI data in the following form. For projects with multiple bridges, including those utilizing bridge bundling, this table should be duplicated and populated with data for each individual bridge. This data is used to support and verify statements made about the project in other sections in this application template as noted in Section D.2.d.II of the NOFO. Data, format and coding information can be downloaded from Download NBI ASCII files – National Bridge Inventory - Bridge Inspection - Safety Inspection - Bridges & Structures - Federal Highway Administration (dot.gov):

Identification

Item 1 – State Code & Name	42
Item 8 – Structure Number	39171
Item 5A – Record Type	1
Item 3 – County Code & Name	101
Item 6 – Feature Intersected	'AMTRAK CONRAIL'
Item 7 – Facility Carried	'Margie Street'
Item 16 - Latitude	39593839
Item 17 – Longitude	75094932
Item 98 – Border Bridge	Not Applicable
Item 99 – Border Bridge Structure Number	Not Applicable

Classification

Item 112 – NBIS Bridge Length	Y
Item 21 – Maintenance Responsibility	4
Item 22 – Owner	2

Age and Service

Item 42 – Type of Service	5

Condition

Item 58 – Deck Condition	4
Item 59 – Superstructure Condition	3
Item 60 – Substructure Condition	3
Item 62 – Culverts	N

Geometric Data

Item 49 – Structure Length	34.1

Load Rating and Posting

Item 70 – Bridge Posting	0
Item 41 – Structure Open, Posted, or Closed to Traffic	K

Appraisal

Item 113 – Scour Critical Bridges	N

Inspections

Item 90 – Inspection Date	1118

Identification

Item 1 – State Code & Name	42
Item 8 – Structure Number	39105
Item 5A – Record Type	1
Item 3 – County Code & Name	101
Item 6 – Feature Intersected	'CONRAIL and SEPTA'
Item 7 – Facility Carried	'Abbottsford Avenue'
Item 16 - Latitude	40005723
Item 17 – Longitude	75103180
Item 98 – Border Bridge	Not Applicable
Item 99 – Border Bridge Structure Number	Not Applicable

Classification

Item 112 – NBIS Bridge Length	Y
Item 21 – Maintenance Responsibility	4
Item 22 – Owner	2

Age and Service

Item 42 – Type of Service	5

Condition

Item 58 – Deck Condition	3
Item 59 – Superstructure Condition	4
Item 60 – Substructure Condition	4
Item 62 – Culverts	N

Geometric Data

Item 49 – Structure Length	20.4

Load Rating and Posting

Item 70 – Bridge Posting	5
Item 41 – Structure Open, Posted, or Closed to Traffic	A

Appraisal

Item 113 – Scour Critical Bridges	N

Inspections

Item 90 – Inspection Date	919

Identification

Item 1 – State Code & Name	42
Item 8 – Structure Number	39149
Item 5A – Record Type	1

Item 3 – County Code & Name	101
Item 6 – Feature Intersected	'AMTRAK (NE Corridor)'
Item 7 – Facility Carried	'"G" Street'
Item 16 - Latitude	40001295
Item 17 – Longitude	75065039
Item 98 – Border Bridge	Not Applicable
Item 99 – Border Bridge Structure Number	Not Applicable

Classification

Item 112 – NBIS Bridge Length	Y
Item 21 – Maintenance Responsibility	4
Item 22 – Owner	3

Age and Service

Item 42 – Type of Service	5

Condition

Item 58 – Deck Condition	4
Item 59 – Superstructure Condition	4
Item 60 – Substructure Condition	4
Item 62 – Culverts	N

Geometric Data

Item 49 – Structure Length	55.8

Load Rating and Posting

Item 70 – Bridge Posting	5
Item 41 – Structure Open, Posted, or Closed to Traffic	P

Appraisal

Item 113 – Scour Critical Bridges	N

Inspections

Item 90 – Inspection Date	1118

Identification

Item 1 – State Code & Name	42
Item 8 – Structure Number	39093
Item 5A – Record Type	1
Item 3 – County Code & Name	101
Item 6 – Feature Intersected	'AMTRAK (NE CORRIDOR)'
Item 7 – Facility Carried	'2nd Street'
Item 16 - Latitude	40001872
Item 17 – Longitude	75075484
Item 98 – Border Bridge	Not Applicable

Item 99 – Border Bridge Structure Number	Not Applicable

Classification

Item 112 – NBIS Bridge Length	Y
Item 21 – Maintenance Responsibility	4
Item 22 – Owner	1

Age and Service

Item 42 – Type of Service	5

Condition

Item 58 – Deck Condition	4
Item 59 – Superstructure Condition	4
Item 60 – Substructure Condition	3
Item 62 – Culverts	N

Geometric Data

Item 49 – Structure Length	26.5

Load Rating and Posting

Item 70 – Bridge Posting	5
Item 41 – Structure Open, Posted, or Closed to Traffic	A

Appraisal

Item 113 – Scour Critical Bridges	N

Inspections

Item 90 – Inspection Date	719

Identification

Item 1 – State Code & Name	42
Item 8 – Structure Number	39156
Item 5A – Record Type	1
Item 3 – County Code & Name	101
Item 6 – Feature Intersected	'AMTRAK and SEPTA'
Item 7 – Facility Carried	'59th Street'
Item 16 - Latitude	39585735
Item 17 – Longitude	75141931
Item 98 – Border Bridge	Not Applicable
Item 99 – Border Bridge Structure Number	Not Applicable

Classification

Item 112 – NBIS Bridge Length	Y
Item 21 – Maintenance Responsibility	4
Item 22 – Owner	2

Age and Service

Item 42 – Type of Service	5

Condition

Item 58 – Deck Condition	5
Item 59 – Superstructure Condition	4
Item 60 – Substructure Condition	3
Item 62 – Culverts	N

Geometric Data

Item 49 – Structure Length	94.5

Load Rating and Posting

Item 70 – Bridge Posting	5
Item 41 – Structure Open, Posted, or Closed to Traffic	P

Appraisal

Item 113 – Scour Critical Bridges	N

Inspections

Item 90 – Inspection Date	619

Identification

Item 1 – State Code & Name	42
Item 8 – Structure Number	39174
Item 5A – Record Type	1
Item 3 – County Code & Name	101
Item 6 – Feature Intersected	'AMTRAK (NE Corridor)'
Item 7 – Facility Carried	'70th Street'
Item 16 - Latitude	39550839
Item 17 – Longitude	75142220
Item 98 – Border Bridge	Not Applicable
Item 99 – Border Bridge Structure Number	Not Applicable

Classification

Item 112 – NBIS Bridge Length	Y
Item 21 – Maintenance Responsibility	4
Item 22 – Owner	2

Age and Service

Item 42 – Type of Service	5

Condition

Item 58 – Deck Condition	4
Item 59 – Superstructure Condition	5
Item 60 – Substructure Condition	6
Item 62 – Culverts	N

Geometric Data

Item 49 – Structure Length	23.5

Load Rating and Posting

Item 70 – Bridge Posting	2
Item 41 – Structure Open, Posted, or Closed to Traffic	P

Appraisal

Item 113 – Scour Critical Bridges	N

Inspections

Item 90 – Inspection Date	219

Identification

Item 1 – State Code & Name	42
Item 8 – Structure Number	39200
Item 5A – Record Type	1
Item 3 – County Code & Name	101
Item 6 – Feature Intersected	'SEPTA'
Item 7 – Facility Carried	'49th Street'
Item 16 - Latitude	39563649
Item 17 – Longitude	75125658
Item 98 – Border Bridge	Not Applicable
Item 99 – Border Bridge Structure Number	Not Applicable

Classification

Item 112 – NBIS Bridge Length	Y
Item 21 – Maintenance Responsibility	4
Item 22 – Owner	3

Age and Service

Item 42 – Type of Service	5

Condition

Item 58 – Deck Condition	4
Item 59 – Superstructure Condition	5
Item 60 – Substructure Condition	7
Item 62 – Culverts	N

Geometric Data

Item 49 – Structure Length	36.6

Load Rating and Posting

Item 70 – Bridge Posting	5
Item 41 – Structure Open, Posted, or Closed to Traffic	P

Appraisal

Item 113 – Scour Critical Bridges	N

Inspections

Item 90 – Inspection Date	320

Identification

Item 1 – State Code & Name	42
Item 8 – Structure Number	39150
Item 5A – Record Type	1
Item 3 – County Code & Name	101
Item 6 – Feature Intersected	'SEPTA'
Item 7 – Facility Carried	'Glenwood Avenue'
Item 16 - Latitude	39594560
Item 17 – Longitude	75092231
Item 98 – Border Bridge	Not Applicable
Item 99 – Border Bridge Structure Number	Not Applicable

Classification

Item 112 – NBIS Bridge Length	Y
Item 21 – Maintenance Responsibility	4
Item 22 – Owner	2

Age and Service

Item 42 – Type of Service	5

Condition

Item 58 – Deck Condition	4
Item 59 – Superstructure Condition	5
Item 60 – Substructure Condition	6
Item 62 – Culverts	N

Geometric Data

Item 49 – Structure Length	21.9

Load Rating and Posting

Item 70 – Bridge Posting	1
Item 41 – Structure Open, Posted, or Closed to Traffic	P

Appraisal

Item 113 – Scour Critical Bridges	N

Inspections

Item 90 – Inspection Date	1218

Identification

Item 1 – State Code & Name	42
Item 8 – Structure Number	39179
Item 5A – Record Type	1
Item 3 – County Code & Name	101
Item 6 – Feature Intersected	'AMTRAK (NE Corridor)'

Item 7 – Facility Carried	'72nd Street'
Item 16 - Latitude	39550086
Item 17 – Longitude	75143280
Item 98 – Border Bridge	Not Applicable
Item 99 – Border Bridge Structure Number	Not Applicable

Classification

Item 112 – NBIS Bridge Length	Y
Item 21 – Maintenance Responsibility	4
Item 22 – Owner	1

Age and Service

Item 42 – Type of Service	31.7

Condition

Item 58 – Deck Condition	5
Item 59 – Superstructure Condition	5
Item 60 – Substructure Condition	4
Item 62 – Culverts	N

Geometric Data

Item 49 – Structure Length	5

Load Rating and Posting

Item 70 – Bridge Posting	1
Item 41 – Structure Open, Posted, or Closed to Traffic	P

Appraisal

Item 113 – Scour Critical Bridges	N

Inspections

Item 90 – Inspection Date	220

Identification

Item 1 – State Code & Name	42
Item 8 – Structure Number	39117
Item 5A – Record Type	1
Item 3 – County Code & Name	101
Item 6 – Feature Intersected	'SEPTA (Norristown Br)'
Item 7 – Facility Carried	'Calumet Street'
Item 16 - Latitude	40004355
Item 17 – Longitude	75113947
Item 98 – Border Bridge	Not Applicable
Item 99 – Border Bridge Structure Number	Not Applicable

Classification

Item 112 – NBIS Bridge Length	Y

Item 21 – Maintenance Responsibility	0
Item 22 – Owner	19

Age and Service

Item 42 – Type of Service	5

Condition

Item 58 – Deck Condition	5
Item 59 – Superstructure Condition	5
Item 60 – Substructure Condition	4
Item 62 – Culverts	N

Geometric Data

Item 49 – Structure Length	21

Load Rating and Posting

Item 70 – Bridge Posting	5
Item 41 – Structure Open, Posted, or Closed to Traffic	P

Appraisal

Item 113 – Scour Critical Bridges	N

Inspections

Item 90 – Inspection Date	319

Identification

Item 1 – State Code & Name	42
Item 8 – Structure Number	38968
Item 5A – Record Type	1
Item 3 – County Code & Name	101
Item 6 – Feature Intersected	'AMTRAK(32ND)(HBG)SEPTA F'
Item 7 – Facility Carried	'SPRING GARDEN STR.'
Item 16 - Latitude	39574848
Item 17 – Longitude	75111240
Item 98 – Border Bridge	Not Applicable
Item 99 – Border Bridge Structure Number	Not Applicable

Classification

Item 112 – NBIS Bridge Length	Y
Item 21 – Maintenance Responsibility	0
Item 22 – Owner	16

Age and Service

Item 42 – Type of Service	5

Condition

Item 58 – Deck Condition	5
Item 59 – Superstructure Condition	5

Item 60 – Substructure Condition	4
Item 62 – Culverts	N

Geometric Data

Item 49 – Structure Length	1.5

Load Rating and Posting

Item 70 – Bridge Posting	A
Item 41 – Structure Open, Posted, or Closed to Traffic	N

Appraisal

Item 113 – Scour Critical Bridges	620

Inspections

Item 90 – Inspection Date	Unavailable

Identification

Item 1 – State Code & Name	42
Item 8 – Structure Number	39266
Item 5A – Record Type	1
Item 3 – County Code & Name	101
Item 6 – Feature Intersected	'SEPTA (BETH BR)'
Item 7 – Facility Carried	'Oak Lane Avenue'
Item 16 - Latitude	40031917
Item 17 – Longitude	75075406
Item 98 – Border Bridge	Not Applicable
Item 99 – Border Bridge Structure Number	Not Applicable

Classification

Item 112 – NBIS Bridge Length	Y
Item 21 – Maintenance Responsibility	4
Item 22 – Owner	3

Age and Service

Item 42 – Type of Service	5

Condition

Item 58 – Deck Condition	5
Item 59 – Superstructure Condition	5
Item 60 – Substructure Condition	5
Item 62 – Culverts	N

Geometric Data

Item 49 – Structure Length	16.8

Load Rating and Posting

Item 70 – Bridge Posting	5

Item 41 – Structure Open, Posted, or Closed to Traffic	A

Appraisal

Item 113 – Scour Critical Bridges	N

Inspections

Item 90 – Inspection Date	1119

Identification

Item 1 – State Code & Name	42
Item 8 – Structure Number	39267
Item 5A – Record Type	1
Item 3 – County Code & Name	101
Item 6 – Feature Intersected	'SEPTA (MAIN LINE)'
Item 7 – Facility Carried	'66th Avenue'
Item 16 - Latitude	40030922
Item 17 – Longitude	75080008
Item 98 – Border Bridge	Not Applicable
Item 99 – Border Bridge Structure Number	Not Applicable

Classification

Item 112 – NBIS Bridge Length	Y
Item 21 – Maintenance Responsibility	4
Item 22 – Owner	1

Age and Service

Item 42 – Type of Service	5

Condition

Item 58 – Deck Condition	5
Item 59 – Superstructure Condition	5
Item 60 – Substructure Condition	5
Item 62 – Culverts	N

Geometric Data

Item 49 – Structure Length	14.6

Load Rating and Posting

Item 70 – Bridge Posting	5
Item 41 – Structure Open, Posted, or Closed to Traffic	A

Appraisal

Item 113 – Scour Critical Bridges	N

Inspections

Item 90 – Inspection Date	1119

Identification

Item 1 – State Code & Name	42
Item 8 – Structure Number	39152
Item 5A – Record Type	1
Item 3 – County Code & Name	101
Item 6 – Feature Intersected	'SEPTA (AHSL)'
Item 7 – Facility Carried	'61st Street'
Item 16 - Latitude	39552199
Item 17 – Longitude	75131067
Item 98 – Border Bridge	Not Applicable
Item 99 – Border Bridge Structure Number	Not Applicable

Classification

Item 112 – NBIS Bridge Length	Y
Item 21 – Maintenance Responsibility	4
Item 22 – Owner	3

Age and Service

Item 42 – Type of Service	5

Condition

Item 58 – Deck Condition	4
Item 59 – Superstructure Condition	6
Item 60 – Substructure Condition	5
Item 62 – Culverts	N

Geometric Data

Item 49 – Structure Length	18.9

Load Rating and Posting

Item 70 – Bridge Posting	5
Item 41 – Structure Open, Posted, or Closed to Traffic	A

Appraisal

Item 113 – Scour Critical Bridges	N

Inspections

Item 90 – Inspection Date	320

Identification

Item 1 – State Code & Name	42
Item 8 – Structure Number	39168
Item 5A – Record Type	1
Item 3 – County Code & Name	101
Item 6 – Feature Intersected	'AMTRAK (NE Corridor)'

Item 7 – Facility Carried	'62nd Street'
Item 16 - Latitude	39553583
Item 17 – Longitude	75134316
Item 98 – Border Bridge	Not Applicable
Item 99 – Border Bridge Structure Number	Not Applicable

Classification

Item 112 – NBIS Bridge Length	Y
Item 21 – Maintenance Responsibility	4
Item 22 – Owner	1

Age and Service

Item 42 – Type of Service	32.3

Condition

Item 58 – Deck Condition	5
Item 59 – Superstructure Condition	6
Item 60 – Substructure Condition	5
Item 62 – Culverts	N

Geometric Data

Item 49 – Structure Length	32.3

Load Rating and Posting

Item 70 – Bridge Posting	5
Item 41 – Structure Open, Posted, or Closed to Traffic	A

Appraisal

Item 113 – Scour Critical Bridges	N

Inspections

Item 90 – Inspection Date	120

Identification

Item 1 – State Code & Name	42
Item 8 – Structure Number	39246
Item 5A – Record Type	1
Item 3 – County Code & Name	101
Item 6 – Feature Intersected	'SEPTA (AHSL)'
Item 7 – Facility Carried	'70th Street'
Item 16 - Latitude	39543276
Item 17 – Longitude	75134512
Item 98 – Border Bridge	Not Applicable
Item 99 – Border Bridge Structure Number	Not Applicable

Classification

Item 112 – NBIS Bridge Length	Y

Item 21 – Maintenance Responsibility	4
Item 22 – Owner	8

Age and Service

Item 42 – Type of Service	5

Condition

Item 58 – Deck Condition	6
Item 59 – Superstructure Condition	6
Item 60 – Substructure Condition	4
Item 62 – Culverts	N

Geometric Data

Item 49 – Structure Length	23.5

Load Rating and Posting

Item 70 – Bridge Posting	5
Item 41 – Structure Open, Posted, or Closed to Traffic	A

Appraisal

Item 113 – Scour Critical Bridges	N

Inspections

Item 90 – Inspection Date	420

Identification

Item 1 – State Code & Name	42
Item 8 – Structure Number	39239
Item 5A – Record Type	1
Item 3 – County Code & Name	101
Item 6 – Feature Intersected	'SEPTA'
Item 7 – Facility Carried	'Gravers Lane'
Item 16 - Latitude	40044008
Item 17 – Longitude	75120792
Item 98 – Border Bridge	Not Applicable
Item 99 – Border Bridge Structure Number	Not Applicable

Classification

Item 112 – NBIS Bridge Length	Y
Item 21 – Maintenance Responsibility	4
Item 22 – Owner	1

Age and Service

Item 42 – Type of Service	5

Condition

Item 58 – Deck Condition	N
Item 59 – Superstructure Condition	6

Item 60 – Substructure Condition	5
Item 62 – Culverts	N

Geometric Data

Item 49 – Structure Length	14

Load Rating and Posting

Item 70 – Bridge Posting	5
Item 41 – Structure Open, Posted, or Closed to Traffic	A

Appraisal

Item 113 – Scour Critical Bridges	N

Inspections

Item 90 – Inspection Date	819

SECTION 3. PROJECT COSTS

Table 2.1 Project Coordinates

Source	Latitude
BIP Request Amount	Exact Amount in year-of-expenditure dollars: $1,560,000
Estimated Total of Other Federal funding (excluding BIP Request)	Estimate in year-of-expenditure dollars: $0
Estimated Other Federal funding (excluding BIP) further detail	$0
Estimated non- Federal funding:	Source: City of Philadelphia Amount: $390,000
Total Planning Project Cost	Estimate in year-of-expenditure dollars: $1,950,000

SECTION 4. PROJECT OUTCOME CRITERIA

4.1 BIP PROGRAM GOALS

This planning project is expected to position the City to explore Bridge Project or a Large Bridge Projects that will achieve multiple BIP program goals. First, the proposed planning project will improve the condition of bridges by reducing the number of and total person miles traveled over bridges. As described in Section 1.2, the subject bridges are of regional and national significance. The bridges included in this application are vital to surface transportation in Philadelphia. According to NBI data, five bridges are identified as principal or minor arterials. Three bridges exceed average daily traffic volumes (ADT) of 20,000 and three additional bridges exceed ADTs of 10,000. The bridges also facilitate travel along significant passenger rail lines. Rail lines include Amtrak's Northeast Corridor and Keystone Corridor which supports travel for well over 100,000 people on a daily basis. SEPTA Regional Rail lines include the Airport Line, Chestnut Hill East Line, Chestnut Hill West Line, Cynwyd Line, Fox Chase Line, Lansdale/Doylestown Line, Manayunk/Norristown Line, Media/Elwyn Line, Paoli/Thorndale Line, Trenton Line, Warminster Line, West Trenton Line, and Wilmington/Newark Line. Collectively, these lines serve 132,000 riders daily.

Section 1.2 also describes the conditions of the subject bridges. All bridges identified in the application are in poor condition or at risk of falling into poor condition. See Table 4.1 below.

Table 4.1 Bridge Conditions

Item 8 – Structure Number	Item 6 – Feature Intersected	Item 7 – Facility Carried	Item 27 – Year Built	Item 58 – Deck Condition	Item 59 – Superstructure Condition	Item 60 – Substructure Condition
39105	'CONRAIL and SEPTA'	'Abbottsford Avenue'	1929	3	4	4
39171	'AMTRAK CONRAIL'	'Margie Street'	1919	4	3	3
39093	'AMTRAK (NE CORRIDOR)'	'2nd Street'	1926	4	4	3
39149	'AMTRAK (NE Corridor)'	'"G" Street'	1914	4	4	4
39174	'AMTRAK (NE Corridor)'	'70th Street'	1949	4	5	6
39150	'SEPTA'	'Glenwood Avenue'	1912	4	5	6
39200	'SEPTA'	'49th Street'	1894	4	5	7
39152	'SEPTA (AHSL)'	'61st Street'	1928	4	6	5
39156	'AMTRAK and SEPTA'	'59th Street'	1926	5	4	3
39179	'AMTRAK (NE Corridor)'	'72nd Street'	1913	5	5	4
39117	SEPTA (Norristown Br)'	Calumet Street'	1925	5	5	4
38968	AMTRAK(32ND)(HBG)SEPTA F'	'SPRING GARDEN STR.'	1964	5	5	4
39266	'SEPTA (BETH BR)'	'Oak Lane Avenue'	1902	5	5	5
39267	'SEPTA (MAIN LINE)'	'66th Avenue'	1913	5	5	5
39168	'AMTRAK (NE Corridor)'	'62nd Street'	1910	5	6	5
38970	'AMTRAK(NEC)'	'SPRING GARDEN STR.'	1964	6	4	6
39246	'SEPTA (AHSL)'	'70th Street'	1980	6	6	4
39239	'SEPTA'	'Gravers Lane'	1906	N	6	5

The Philadelphia Overhead Bridge Rehabilitation Program project will also advance U.S. DOT's goal to leverage and encourage non-Federal contributions. The local funding contributions are described in Section 4.4.

4.2 PROJECT DESCRIPTION

This planning project will evaluate 18 bridges listed on the NBI that are in poor condition or are in fair condition or in fair condition at risk of falling into poor condition. As described in Section 1.2, the project consists of four interrelated components.

BIP grant funding will allow the City to complete an **existing conditions analysis** of bridges identified in Figure 1.2. The existing conditions analysis will specifically consist of reviewing inspection reports and conducting additional inspections to document existing conditions of City bridges and apply best practice methods to anticipate deterioration. The existing conditions analysis will also assess the existing conditions of electrification systems and explore the impacts of utilities and other structural conditions.

The second component, **subsurface investigations**, will provide subsurface information for plans and to develop recommendations for future bridge infrastructure improvements. These explorations will help identify each site in sufficient detail for the future development of feasible and cost-effective design and construction.

The third component, **project development**, will identify and program prioritized bridge rehabilitation projects. It will also identify and program a prioritized set of temporary and permanent modifications to existing catenary systems to accommodate near term maintenance and reliability efforts, as well as future bridge rehabilitation. The City will work with Amtrak and

SEPTA to develop an acceptable plan for the advanced relocation, modification, or replacement of existing railroad infrastructure so that future bridge rehabilitation or replacement projects can proceed more efficiently and with fewer dependencies.

The fourth and most important component involves **partner collaboration and coordination**. As the project lead, the City will convene Amtrak, SEPTA, PennDOT and other relevant stakeholders to oversee development of the Philadelphia Overhead Bridge Rehabilitation Program. The City will engage key stakeholders throughout the project and will work to establish a shared understanding of roles and responsibilities for future bridge replacement and rehabilitation projects. The City will also review and document best practices in terms of prioritization and project delivery strategies applicable to bridge rehabilitation and other capital improvements to address impediments to safety, reliability, and maintenance requirements.

4.3 PROJECT SCHEDULE

Major project milestones for the **Philadelphia Overhead Bridge Rehabilitation Program** project are listed in Table 4.2. State dates and completion dates for major activities are provided below. Assuming grant selections are made in February 2023, we anticipate that the planning project will be fully completed by the end of calendar year 2024. This will position the City to explore future Bridge Project or Large Bridge Project funding opportunities. Post-planning activities through completion of BIP Bridge or Large Bridge Project applications are also described below. To date, no activities are underway or completed.

Table 4.2 Project Schedule

PLANNING PROJECT MILESTONES	START DATE	COMPLETION DATE
Award Announcement	February 2023	February 2023
Execute Grant Agreement	Spring 2023	Spring 2023
Planning Contract Award and Notice to Proceed	August 2023	August 2023
Planning and Existing Conditions Analysis	August 2023	February 2024
Subsurface Investigations	August 2023	February 2024
Structural Conditions and Constructability Assessment	February 2024	May 2024
Identify and Program Prioritized Bridge Rehabilitation Projects	May 2024	July 2024
Explore BIP Large Bridge and/or Bridge Grant Application	Summer 2024	Summer 2024
Final Comprehensive Report	July 2024	December 2024
ANTICIPATED POST-PLANNING MILESTONES	**START DATE**	**COMPLETION DATE**
Secure BIP Bridge Project or Large Project Grant	January 2025	January 2025
Preliminary Engineering & NEPA	January 2025	January 2026
Final Design	January 2026	January 2027
Procurement & Construction Contract Award	January 2027	August 2027
Construction	September 2027	March 2029

4.4 PROJECT BUDGET

The City of Philadelphia requests $1,560,000 in BIP planning grant funding to complete the Philadelphia Overhead Bridge Rehabilitation Program project. The requested BIP grant funds will

match $390,000 in local funding. This section presents the project costs as well as the sources and uses of funds planned for the project.

The total estimated cost of the planning project is $1,950,000. Project milestones and associated cost estimates are provided below.

Table 4.3 Project Budget Summary

Item	BIP Amount	Local Share	Total	% of Total Project Cost
Planning & Existing Conditions Analysis	$450,000	$0	$450,000	23%
Subsurface Investigations	$750,000	$0	$750,000	38%
Partner Collaboration & Coordination	$110,000	$390,000	$500,000	26%
Project Development	$250,000	$0	$250,000	13%
TOTAL PROJECT COST	**$1,560,000**	**$390,000**	**$1,950,000**	**100%**

As shown in Table 4.4, federal sources make up $1,590,000 million, or 80 percent, of total project costs. A $390,000 contribution from the City's Capital Budget will serve as the local match for the project. Documentation of the funding commitment can be found in Appendix A.

Table 4.4 Funding Sources

Type	Funding Source	Total Funding Amount	% of Total
Non-Federal Funds	City of Philadelphia	$390,000	20%
Federal Funds (BIP)	BIP Grant Funds	$1,560,000	80%
Total Project Funding (Eligible BIP Costs Only)		$1,950,000	100%

4.5 PLANNING PRIORITY CONSIDERATIONS

This application supports U.S. DOT's priority considerations by starting and completing the planning process for a Large Bridge Project in poor condition. While no single bridge identified in the application meets the requirements for a Large Bridge Project, the City will explore opportunities to bundle bridges for future Large Bridge Project grant funding opportunities. If awarded funding, the City will determine Large Bridge Project feasibility during the planning process. See Sections 1.2 and 4.2 for more detailed support information.

BUDGET NARRATIVE

City of Philadelphia

Philadelphia Overhead Bridge Rehabilitation Program: Facilitating Rehabilitation of City Bridges that Span Electrified Rail Lines

2022 BIP Grant Program

July 25, 2022

BUDGET NARRATIVE

Each element of the cost estimate is detailed below:

Item	BIP Amount	Local Share	Total	% of Total Project Cost
Planning & Existing Conditions Analysis	$450,000	$0	$450,000	23%
Subsurface Investigations	$750,000	$0	$750,000	38%
Partner Collaboration & Coordination	$110,000	$390,000	$500,000	26%
Project Development	$250,000	$0	$250,000	13%
TOTAL PROJECT COST	**$1,560,000**	**$390,000**	**$1,950,000**	**100%**

Planning and Existing Conditions Analysis

- Review inspection reports and conduct additional inspections to document existing conditions of City bridges and apply best practice methods to anticipate deterioration.
- Assess the existing conditions of electrification systems.
- Evaluate the impacts of utilities and other easements on structural conditions and constructability.

Subsurface Investigations

- Conduct subsurface investigations that will inform the development of electrification support system concepts.

Partner Collaboration

- Convene Amtrak, SEPTA, PennDOT and other stakeholders to refine the objectives of the plan and establish points of contact and mutual expectations.
- Review and document best practices in terms of prioritization and project delivery strategies applicable to bridge rehabilitation and other capital improvements to address impediments to safety, reliability, and maintenance requirements.

Project Development:

- Identify and program prioritized bridge rehabilitation projects.
- Identify and program a prioritized set of both temporary and permanent modifications to existing catenary systems to accommodate near term maintenance and reliability efforts, as well as future bridge rehabilitation.
- Develop an acceptable plan for the advanced relocation, modification, or replacement of existing railroad infrastructure so that future bridge rehabilitation or replacement projects can proceed more efficiently and with fewer dependencies.
- Develop an action plan that is suitable for immediate application in the City of Philadelphia as well as effective transfer of knowledge to other localities on the Amtrak network.

Appendix A: Documentation of Funding Commitments

City of Philadelphia

Philadelphia Overhead Bridge Rehabilitation Program: Facilitating Rehabilitation of City Bridges that Span Electrified Rail Lines

2022 BIP Grant Program

July 25, 2022

CITY OF PHILADELPHIA

Managing Directors Office
1430 Municipal Services Building
1401 John F. Kennedy Blvd.
Philadelphia, PA 19102

Michael A. Carroll, P.E.
Deputy Managing Director for
Transportation, Infrastructure, and
Sustainability

July 25, 2022

The Honorable Pete Buttigieg
Secretary of Transportation
US Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Re: City of Philadelphia's FY 2022 BIP Planning Grant Application – Philadelphia Overhead Bridge Rehabilitation Program

Dear Secretary Buttigieg,

This letter serves as a commitment from the City of Philadelphia for **$390,000** in City Capital Funding for the City's Planning Grant application to the U.S. Department of Transportation's Bridge Investment Program (BIP). This funding will be used to match our BIP Planning Grant application request.

The Philadelphia Overhead Bridge Rehabilitation Program project includes feasibility analysis and planning for rehabilitating City bridges that span electrified rail lines. Funding through this program will allow the City, in collaboration with SEPTA and Amtrak, to develop efficient strategies and cost-effective solutions for improving bridge conditions and the safety, efficiency, and reliability of the movement of people and freight. Thank you for your consideration.

Sincerely,

Michael A. Carroll, P.E.
Deputy Managing Director

Appendix B: Letters of Support

City of Philadelphia

Philadelphia Overhead Bridge Rehabilitation Program: Facilitating Rehabilitation of City Bridges that Span Electrified Rail Lines

2022 BIP Grant Program

July 25, 2022

LETTERS OF SUPPORT

Amtrak

Southeastern Pennsylvania Transportation Authority (SEPTA)

NATIONAL RAILROAD PASSENGER CORPORATION
1 Massachusetts Avenue, NW, Washington, DC 20001

Dennis J. Newman
Executive Vice President, Strategy, Planning and Accessibility

July 22, 2022

The Honorable Pete Buttigieg
Secretary of Transportation
US Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Re: City of Philadelphia's FY22 FHWA's Bridge Investment Program (BIP) Planning Grant Application: Philadelphia Overhead Bridge Rehabilitation Program (PA)

Dear Secretary Buttigieg,

On behalf of the National Railroad Passenger Corporation (Amtrak), I am pleased to provide this letter of support for the City of Philadelphia's (City) application submitted under the Federal Highway's Administration's (FHWA) FY22 Bridge Investment Program (BIP) grant program for the ***Philadelphia Overhead Bridge Rehabilitation Program: Facilitating Rehabilitation of City Bridges that Span Electrified Rail Lines*** project. The project includes feasibility and planning analyses for rehabilitating City overhead bridges that span electrified rail lines, including the Northeast and Keystone Corridors in Philadelphia, Pennsylvania.

Program funding will allow the City, in collaboration with Amtrak and PennDOT to develop efficient strategies and cost-effective solutions for improving bridge conditions and the safety, efficiency, and reliability of the movement of people and freight.

Amtrak is committed to providing safe, efficient, and effective intercity passenger rail mobility consisting of high-quality service that is trip-time competitive with other intercity travel options. Amtrak's rail operations within Philadelphia, which include William F. Gray III 30th Street Station (Gray 30th Street Station) are vital to the Northeast Corridor. As the third busiest station in Amtrak's national system, Gray 30th Street Station serves Amtrak's high-speed *Acela*, *Northeast Regional*, *Keystone* and long-distance train services, serving over 4 million Amtrak rail passengers and over 12 million SEPTA and NJ TRANSIT rail commuters annually (pre-pandemic). The station complex is also a critical hub of city transportation services with dozens of subway, trolley, and bus routes serving the station. On an average weekday, well over 100,000 people pass through.

Safe and reliable bridge infrastructure is critical to ensuring Amtrak's rail operations and passengers traveling to and through Philadelphia are effectively served. The City owns or maintains over a dozen bridges that traverse the Northeast Corridor. Roughly half of these bridges, most of which were built before 1930, are in poor condition or are at risk of falling into poor condition. The project will develop a comprehensive feasibility study and plan to review the existing conditions of City bridges that cross over Amtrak rail lines, assess the existing conditions of electrification systems such as wire profile surveys, and explore project delivery strategies and solutions for rehabilitating bridges that are in poor condition such as making temporary or permanent modifications to existing catenary systems to accommodate the rehabilitation of bridges that are in poor condition.

If applicable, it is Amtrak's expectation that, prior to the obligation of grant funds for this project, the city of Philadelphia, PennDOT and Amtrak will discuss resource requirements and Amtrak's ability to adequately support the projects, and subsequently enter into an agreement setting forth our roles and responsibilities with respect to the project, with terms acceptable to Amtrak.

The advancement of this Project will ensure that critical overhead bridges remain operational, support the local economy, strengthen supply chains, improve safety, and create good-paying jobs across the Northeast and Keystone corridors.

Sincerely,

Dennis J. Newman
Executive Vice President, Strategy, Planning and Accessibility

cc: Michael Carroll, Deputy Managing Director, City of Philadelphia, Office of Transportation, Infrastructure and Sustainability, Michael.a.carroll@phila.gov

Patrick Clark, Grants Manager, City of Philadelphia, Office of Transportation Infrastructure and Sustainability, Patrick.F.Clark@Phila.gov

Southeastern Pennsylvania Transportation Authority
1234 Market Street • Philadelphia, PA 19107-3780

July 22, 2022

The Honorable Pete Buttigieg
Secretary of Transportation
US Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

RE: City of Philadelphia's Bridge Investment Program (BIP) Planning Grant Application

Dear Secretary Buttigieg:

I am pleased to provide this letter of support for the City of Philadelphia's (City) Bridge Investment Program (BIP) application, "**Philadelphia Overhead Bridge Rehabilitation Program: Facilitating Rehabilitation of City Bridges that Span Electrified Rail Lines.**" The project includes feasibility analysis and planning for rehabilitating City bridges that span electrified rail lines, including SEPTA operated rail lines. Funding through this program will allow the City, in collaboration with SEPTA, to develop efficient strategies and cost-effective solutions for improving bridge conditions and the safety, efficiency, and reliability of the movement of people and freight.

Safe and reliable bridge infrastructure is critical to ensuring SEPTA's rail operations and passengers traveling to and through Philadelphia are effectively served. The City owns or maintains over 15 bridges that traverse the SEPTA operated electrified rail lines. Over half of these bridges, most of which were built before 1930, are in poor condition or are at risk of falling into poor condition. If awarded BIP funding, the City will develop a comprehensive feasibility study and plan to review the existing conditions of City bridges that cross over SEPTA rail lines, assess the existing conditions of electrification systems such as wire profile surveys, and explore project delivery strategies and solutions for rehabilitating bridges that are in poor condition such as making temporary or permanent modifications to existing catenary systems to accommodate the rehabilitation of bridges that are in poor condition.

The **Philadelphia Overhead Bridge Rehabilitation Program** advances BIP goals and U.S. Department of Transportation's (U.S. DOT) key departmental objectives associated with ensuring the nation's most important bridges remain operational, support local economies, strengthen supply chains, improve safety, and create good-paying jobs across the country. I support the City's commitment to rehabilitating bridges and urge U.S. DOT to give the City's application full consideration for funding approval.

Sincerely,

Leslie S. Richards
General Manager & Chief Executive Officer