



City of Philadelphia Closing the Gaps

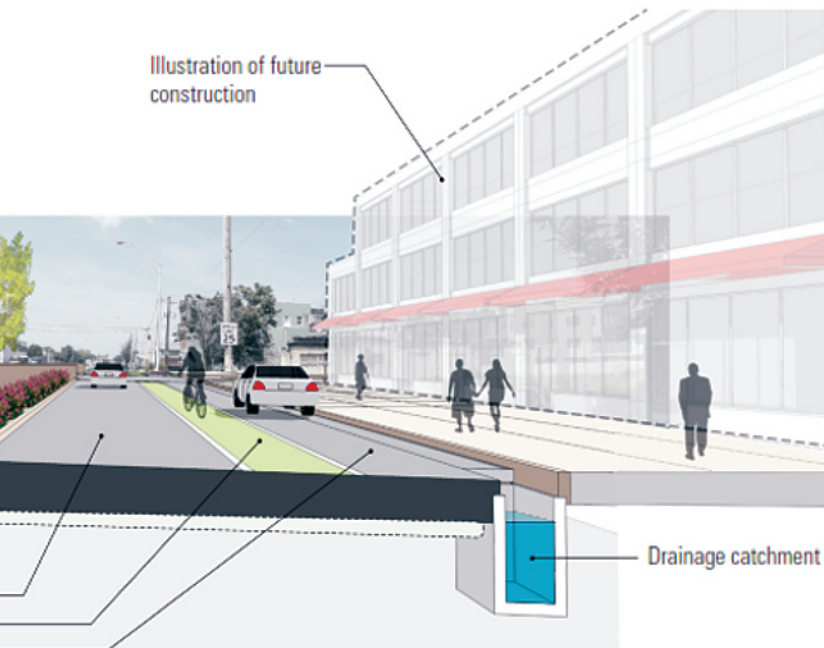
Application Supporting Materials

TIGER ID philadelphia746

Funding Opportunity
DTOS59-15-RA-TIGER7

Funding Opportunity
Title FY 2015 National Infrastructure Investments

June 5, 2015



Proposed

Closing the Gaps

TIGER VII Grant Application

Adapting American Street • Over the River • Over the Rails

Applicant Organization Name: City of Philadelphia

DUNS Number: 78-0873782

Authorized Representative: Denise Goren / Katherine Gajewski

TIGERID: philadelphia746

Project: Closing the Gaps

Total Project Cost: \$35,020,000

TIGER Request: \$10,265,000 (29%)

Total Planned Match: \$24,755,000 (71%)

Total Non-Federal Funding: \$12,295,000 (35%)

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Project Description

Overview

The City of Philadelphia will restore safe pedestrian and bicycle access to inner-city neighborhoods by *Closing the Gaps* on three key breaks within the City’s multi-modal system. **This project leverages slightly over \$10 million in TIGER funds \$24 million in City, Commonwealth, and additional federal resources to:**

1. **Reclaim** a previously industrial roadway corridor to create a **pedestrian and traffic-friendly streetscape** in *Adapting American Street*.
2. **Restore** continuous access to Westmoreland Street by removing a hazardous, elevated pedestrian footbridge and **constructing a new multi-purpose road and bridge** in *Over the Rails*.
3. **Repurpose** an abandoned railroad bridge into a bicycle/pedestrian swing bridge over the Schuylkill River to connect to the regional trail network in *Over the River*.

The City of Philadelphia has launched the *Closing the Gaps* project to restore safe multi-modal access to neighborhoods in North and West Philadelphia. These projects are part of a continued implementation of other “Complete Streets” and “Safe Routes to Schools” initiatives already successfully constructed throughout the City.

Background

The City of Philadelphia’s *Closing the Gaps* project targets three key opportunities for transformational change and community investment. North Philadelphia and West Philadelphia were once economic powerhouses in Philadelphia’s industrial age. Today, these neighborhoods are home to numerous public schools, universities, low-income residents, jobs, and community services (e.g., hospitals, public parks, charter schools, etc.). Due to abandoned railroads and aging roadway infrastructure, residents of these areas are confronted by hazardous obstacles to completing their daily travel needs.

North Philadelphia

The greater Kensington area in North Philadelphia is home of the City’s heart of Hispanic culture. *Adapting American Street* directly affects the predominantly Puerto Rican neighborhoods of Fairhill, Norris Square and West Kensington. American Street (**Exhibit 1**) is a former industrial corridor that serves this area, stretching 2.0 miles from the rapidly redeveloping neighborhood along Girard Avenue to one of the poorest neighborhoods where the median household income of \$15,000 is less than half of the average Philadelphian household of \$36,000. Although redevelopment has occurred on the southern border along Girard Street, American Street runs north toward Lehigh Avenue through neighborhoods with 17% of vacant land. Since this area’s designation as an “Empowerment Zone” in 1994, the focus has shifted towards the facility of American Street as a project for redevelopment. Poor drainage, a wide (and hazardous) roadway, and a lack of safe bicycle / pedestrian amenities combine to limit the potential of the area to meet the needs of its most “at risk” residents.



Exhibit 1 Current Conditions - Northbound American Street

Abandoned rail tracks run down American Street, a relic of its character as a former freight depot. Originally widened in the 1970's for increased freight access, American Street no longer serves the old industrial economy of North Philadelphia, and today is characterized by a wide roadway with few amenities for other modes of travel. *Adapting American Street* seeks to **close the gap** of accessibility for pedestrians and bicyclists through the removal of 2.0 miles of rail tracks, the installation of a vegetated median and crosswalks, curbing, resurfacing, traffic management and landscaping. These changes will reclaim American Street for the Norris Square and West Kensington neighborhoods that buffer the corridor from Girard Avenue northbound toward Lehigh Avenue. The area is home to numerous neighborhoods and five elementary schools in addition to several middle and high schools. As the area transitioned from industrial to residential use, the roadway design has proven hazardous to its residents, many who walk or bicycle to meet their daily travel needs.

One mile north of the *Adapting American Street* segment is *Over the Rails*. Westbound Westmoreland Street (**Exhibit 2**) abruptly ends at the edge of the Luis Muñoz-Marín School. Access across the abandoned railroad is limited to a 140 foot elevated pedestrian footbridge. This area was once the site of active rail lines that split Westmoreland Street, but they are now abandoned. *Over the Rails* will **close the gap** of accessibility by removing a hazardous pedestrian footbridge over the abandoned rail lines and replace it with a multipurpose roadway to provide a continuous, at-grade, multi-modal continuation of Westmoreland Street. Today, the neighborhood is divided by the gap in the network forcing students, commuters, bicyclists and pedestrians to decide between either taking a hazardous or circuitous route to complete their daily travel needs.



Exhibit 2 Current Conditions - Westmoreland Street Pedestrian Footbridge

West Philadelphia

The restoration of a vacant railroad bridge for pedestrians and bicyclists will connect residents from surrounding Historic Bartram’s Garden in West Philadelphia over the Schuylkill River to Gray’s Ferry, southwest into Center City Philadelphia. ***Over the River*** will restore west bank bicycle and pedestrian access with an extension to the successful east bank Schuylkill River trail. This project will **close the gap** by repurposing an abandoned railroad (**Exhibit 3**) to create direct east-west access for pedestrians and bicyclists over the Schuylkill River. While the facility will be designated for bicycles and pedestrians only, it will also accommodate first-responder vehicles in the event of an emergency. The area includes several neighborhoods, retail centers, public schools and hospitals.



Exhibit 3 Current Conditions - Schuylkill River Rail Bridge

Current Infrastructure Baseline

As noted in the project Background narrative, *Closing the Gaps* replaces or redesigns unsafe gaps in the bicycle and pedestrian network of Philadelphia. The infrastructure in the area is characterized by abandoned railroads and their lasting impacts on the community.

- **Adapting American Street-** This component of the *Closing the Gaps* is a 2 mile, 2 lane segment of American Street in North Philadelphia extending from Girard Avenue to Lehigh Avenue. Average Annual Daily Traffic (AADT) is 5,875 as reported by the Mayor’s Office of Transportation and Utilities (MOTU). The roadway is characterized by a wide paved right-of-way, on-street parking and few bicycle / pedestrian amenities. The large paved surface results in significant stormwater runoff that presents a hazard to motorists, bicyclists, pedestrians and nearby neighborhoods.
- **Over the Rails-** This component of the *Closing the Gaps* is currently an elevated pedestrian bridge that crosses 140’ of abandoned railroad right-of-way. Westmoreland Street is a one lane arterial that dead-ends on both sides of the railroad tracks.
- **Over the River-** This component of the *Closing the Gaps* is a 1,000’ abandoned railroad swing-bridge crossing the Schuylkill River, that could, but does not currently, connect to the DuPont Crescent regional trail network.

Proposed Improvements

Closing the Gaps will restore safe connectivity to the network of streets and sidewalks for three neighborhoods in Philadelphia.

- **Adapting American Street-** *Closing the Gaps* will reconstruct the 2 mile segment of American Street in North Philadelphia extending from Girard Avenue to Lehigh Avenue to meet the City’s Complete Streets Guidelines. Improvements will include the addition of bicycle lanes and sidewalks on both sides of the road as well as on-street parking. The median will be reconstructed to include drainage / water retention and pedestrian islands.
- **Over the Rails-** *Closing the Gaps* will demolish a hazardous elevated pedestrian bridge / railroad crossing and replace it with a 140’ at-grade, 2 lane roadway facility complete with sidewalks and bicycle lanes.
- **Over the River-** *Closing the Gaps* will refurbish and retrofit a 1,000’ abandoned railroad swing-bridge crossing the Schuylkill River to accommodate bicycle and pedestrian and first-responder traffic.

Expected Users and Beneficiaries of the Project

Expected users that will primarily benefit from *Closing the Gaps* are the residents of North and West Philadelphia who work in community. Chief among these are students at neighborhood schools (**Exhibit 4, Exhibit 5, Exhibit 6**), commuters, and other residents who walk or bicycle to meet their daily needs. These residents will benefit from the *Closing the Gaps* by **reduced travel times** via **direct and safely constructed bicycle and pedestrian facilities**. They will also benefit from the **state of good repair** and the **quality of life** for members of Norris Square, Fairhill and Bartram’s Garden. Secondary users that will benefit are other citywide residents, commuters and visitors that traverse American Street, Westmoreland Street and the Schuylkill river trail for their travel needs.



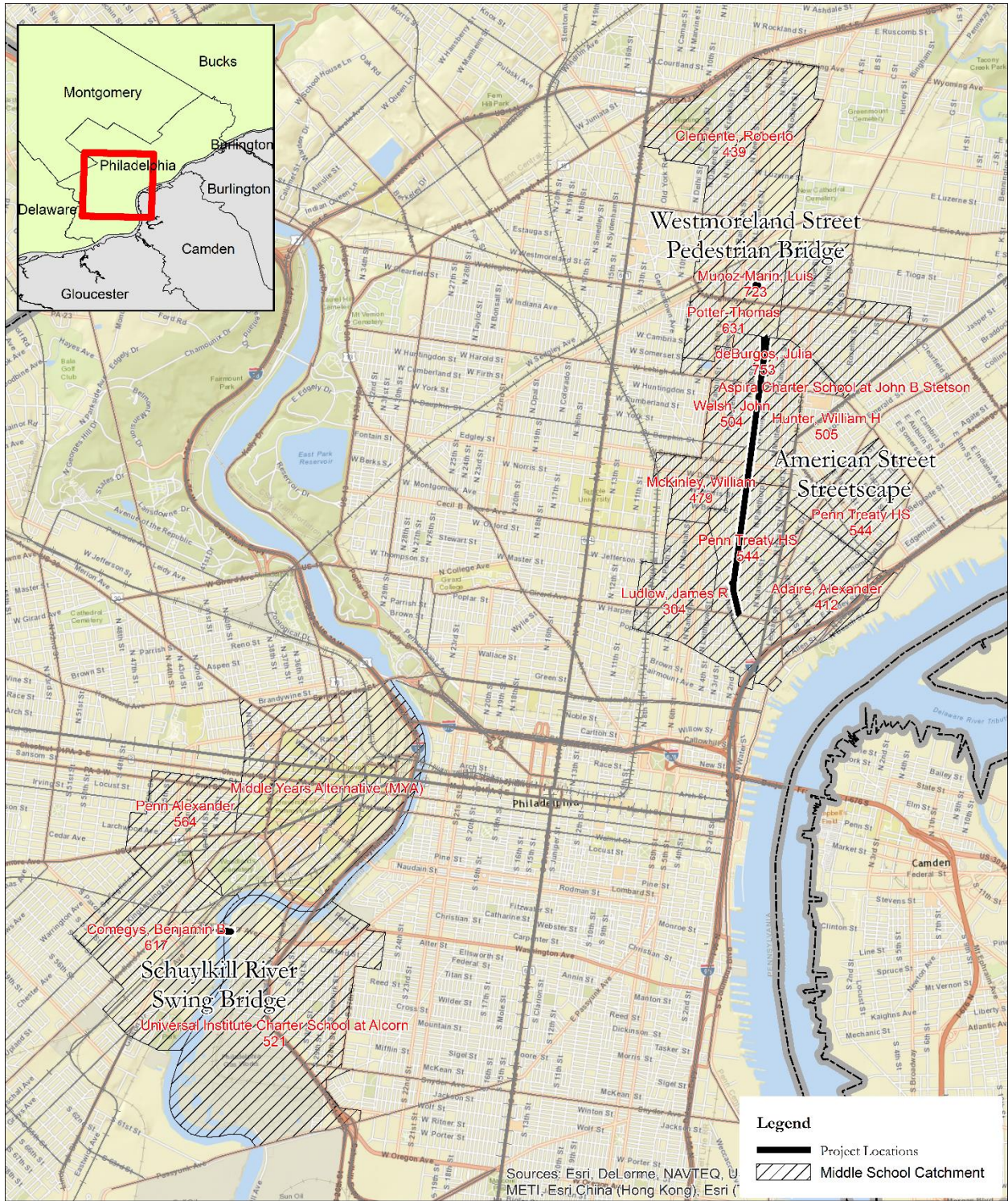
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 Source: 2010 Census Block Data
 Map Created: 4 June 2015



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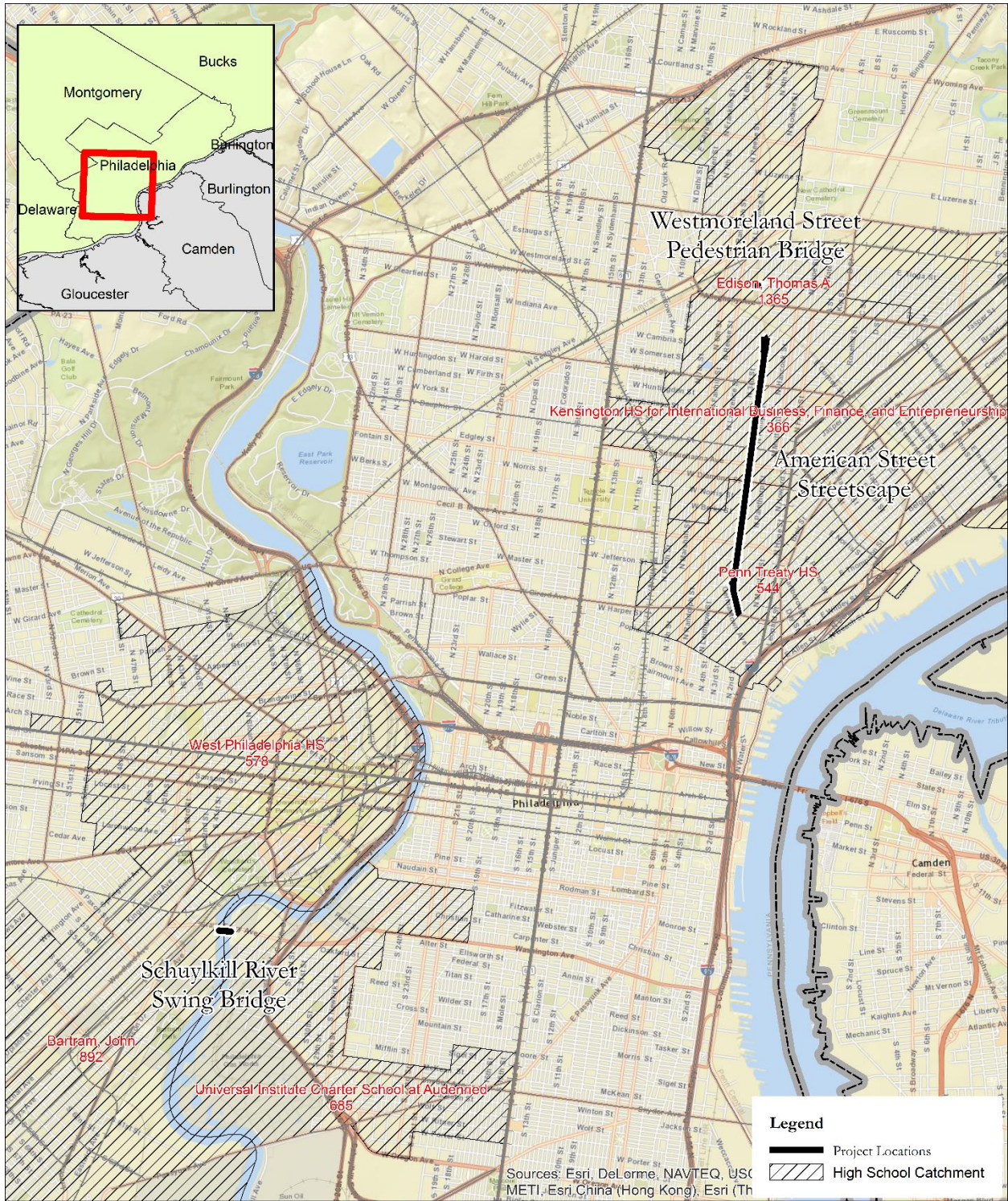
Exhibit 4 Project Area Elementary School Boundaries



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 Source: 2010 Census Block Data
 Map Created: 4 June 2015



Exhibit 5 Project Area Middle School Boundaries



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 Source: 2010 Census Block Data
 Map Created: 4 June 2015



Exhibit 6 Project Area High School Boundaries

Challenges the Project Plans to Address

Closing the Gaps will reconnect three breaks in the Philadelphia multi-modal network by connecting neighborhoods once cut off by former industrial uses (i.e., abandoned railroads) and the Schuylkill River. Each component of *Closing the Gaps* serves an economically challenged neighborhood with a new connection to greater economic opportunity and transportation stability. This project will target the **state of good repair** and the **quality of life** for those facilities and residents within the project area. In addition to meeting its immediate goals of bridging gaps in the regional bicycle / pedestrian network, the project will complement other City-wide initiatives including **Complete Streets**, **Safe Routes to School**, stormwater management plans and various redevelopment plans.

How the Project Will Address These Challenges

Closing the Gaps will reclaim community spaces once dictated by the needs of Philadelphia's manufacturing economy. Critical gaps in the City's multi-modal network will be eliminated enhancing the mobility opportunities for adjacent neighborhoods that are currently severed from one another due to a lack of infrastructure. This project will target existing conditions within North Philadelphia and West Philadelphia by constructing and restoring new connections that previously limited public access.

- **Adapting American Street** will improve conditions for pedestrians and bicyclists on a facility where over 40% of vehicle crashes from 2011 – 2013 involved pedestrians and bicyclists in an area where 48% of households do not have a car.
- **Over the Rails** directly addresses the **quality of life** in a neighborhood where in 2014 over 680 police incidents occurred, including eight homicides, with the removal of a pedestrian bridge long associated with crime.
- **Over the River** will grant new pedestrian and bicycle access for a neighborhood where 86% of households do not own a vehicle by providing a dedicated facility that ties into the City's network of regional trails.

Ladders of Opportunity

This project will increase ladders of opportunity for communities in North Philadelphia and West Philadelphia that have gaps in their transportation network. These facility breaks result in increased time spent traveling to safe alternative routes to meet daily travel needs.

Goal	How Project Satisfies Ladders of Opportunity Goal
Work	<i>Closing the Gaps</i> will create pathways to jobs for traditionally underserved and disadvantaged communities in North and West Philadelphia through the improvement of accessible transportation options.
Connect	The project addresses three multi-modal system gaps with the potential to connect a diverse workforce with reliable and affordable access to economic opportunities.
Revitalize	Each component of <i>Closing the Gaps</i> will support transformational infrastructure change and equitable transportation opportunities to impact main-street neighborhoods and support residential businesses.

Project Location

As shown in **Exhibit 7**, the project is located in North Philadelphia and West Philadelphia. These areas, formerly the home of heavy industry, are now home to low-income neighborhoods, jobs, numerous neighborhood schools, hospitals and public parks. *Closing the Gaps* targets three significant breaks in the City’s Complete Streets infrastructure that can be addressed in a cost effective way that complements other city-wide and local neighborhood initiatives.



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 Source: 2010 Census Block Data
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Exhibit 7 Project Location Map

Detailed Project Description

Closing the Gaps has three components, each having independent utility, which will repair missing segments in Philadelphia's multi-modal network:

1. **Adapting American Street:** a 2.0 mile roadway reconstruction project along American Street that will implement curb installments, crosswalks, traffic management, landscaping and stormwater management. **Exhibit 8** presents a cross section of present day American Street, characterized by its wide roadway, as well as a rendering of proposed improvements. **Exhibit 9** shows a detailed cross section of improvements that remove the rail tracks in the center of the facility, designate dedicated bicycle lanes, increase sidewalk widths and accommodate on-site stormwater retention.



Exhibit 8 Adapting American Street - Existing Conditions and Proposed Changes

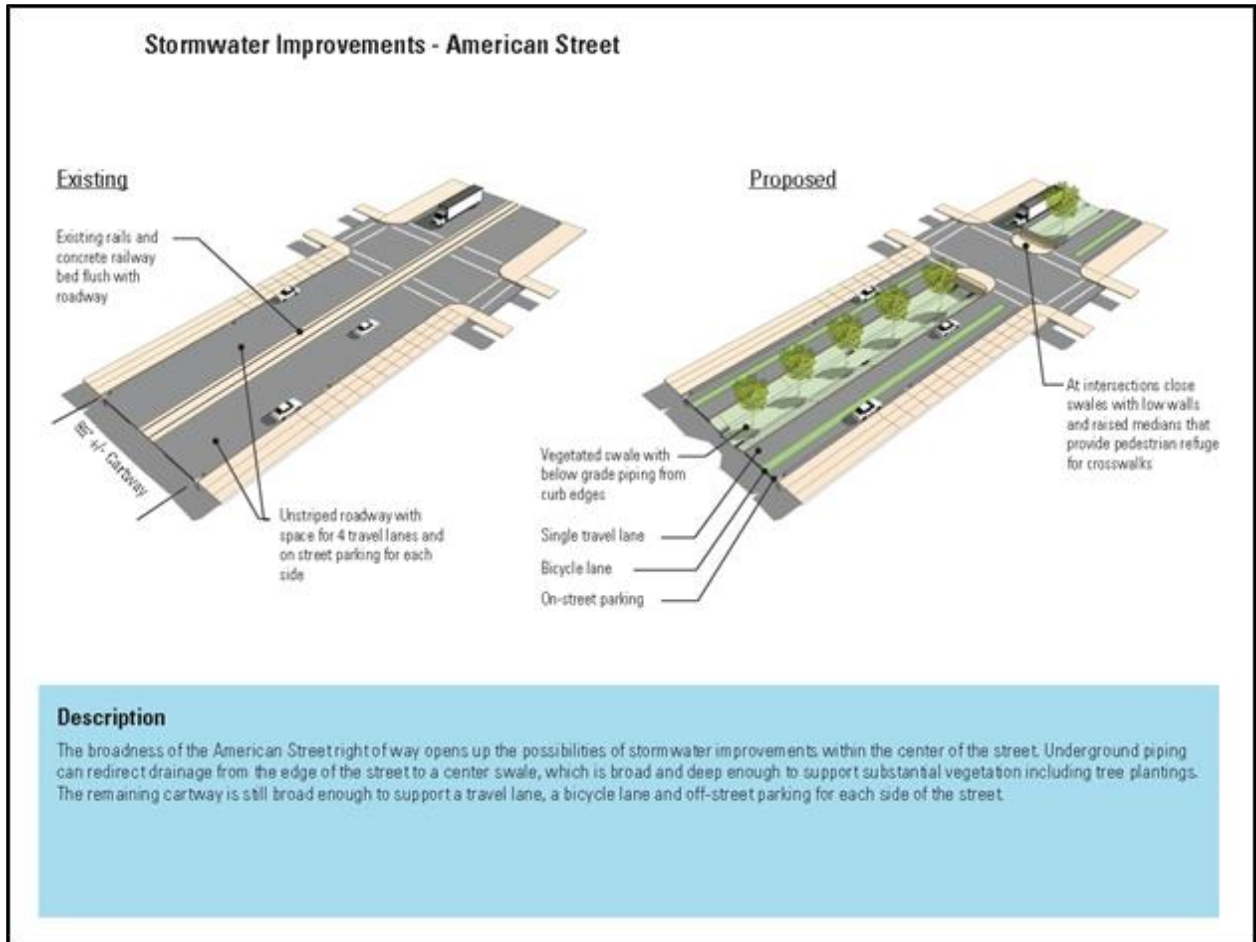


Exhibit 9 Adapting American Street – On-site Stormwater Retention

2. **Over the Rails:** will reconnect the intersections of 3rd and Westmoreland Street with 4th and Westmoreland Street by the removal of a hazardous pedestrian footbridge and the construction of an at-grade multipurpose roadway and bridge over abandoned railroad tracks used by 50% of students walking to the Luis Muñoz-Marín School, Brightside Academy, The Mann Recreational Field and a new block of housing with over 45 row homes. The proposed improvements (**Exhibit 10**) include a continuous street that will fill a missing gap in the network and sidewalks. This part of *Closing the Gaps* will provide for increased visibility and safety for travelers and neighborhood residents alike. Currently, the pedestrian bridge has a high number of crimes committed on or around it due to the indirect path and poor sight distances from the Westmoreland Street termini at the abandoned railroad crossing.

Improvements - Reconnecting Westmoreland Street to 4th Street



The existing dead end of Westmoreland Street is a source of short dumping and criminal activity adjacent to an elementary school, a day care facility, and a public recreation center. Reconnecting the street creates clear sightlines and safe travel for all modes between the schools, public recreation facilities, and a recently completed block of new rowhomes. A safer and more active street edge could also incentivize the renovation of the vacant portions of the Brightside Academy property.

Existing Conditions



Exhibit 10 Over the Rails- Existing Conditions and Proposed Changes

3. **Over the River:** will redevelop an obsolete railroad bridge over the Schuylkill River into a pedestrian and bicycle accessible swing bridge. **Exhibit 11** shows the abandoned bridge in its present state. **Exhibit 12** presents a rendering of proposed improvements from the Gray's Ferry crescent with the swing bridge that connects the Schuylkill River Trail westbound into Bartram's Garden. The new bridge will be designed wide enough to accommodate emergency vehicles.



Exhibit 11 Over the River - Existing Conditions



Exhibit 12 Over the River - Proposed Conditions

Project Location

Closing the Gaps has three distinct sub-projects (elements) each with independent utility:

1. **Adapting American Street:** located in the Norris Square and West Kensington neighborhoods, 2.0 mile stretch of American Street from Girard Avenue northbound to Lehigh Avenue in North Philadelphia.
2. **Over the Rails:** located along a broken segment of Westmoreland Street in the Fairhill neighborhood of North Philadelphia—between the intersections of 3rd and Westmoreland Streets and 4th and Westmoreland Streets.
3. **Over the River:** located over the Schuylkill River in West Philadelphia that connects Bartram’s Garden to Gray’s Ferry neighborhoods via an extension of the Schuylkill River Trail.

Project Area and Impacted Populations

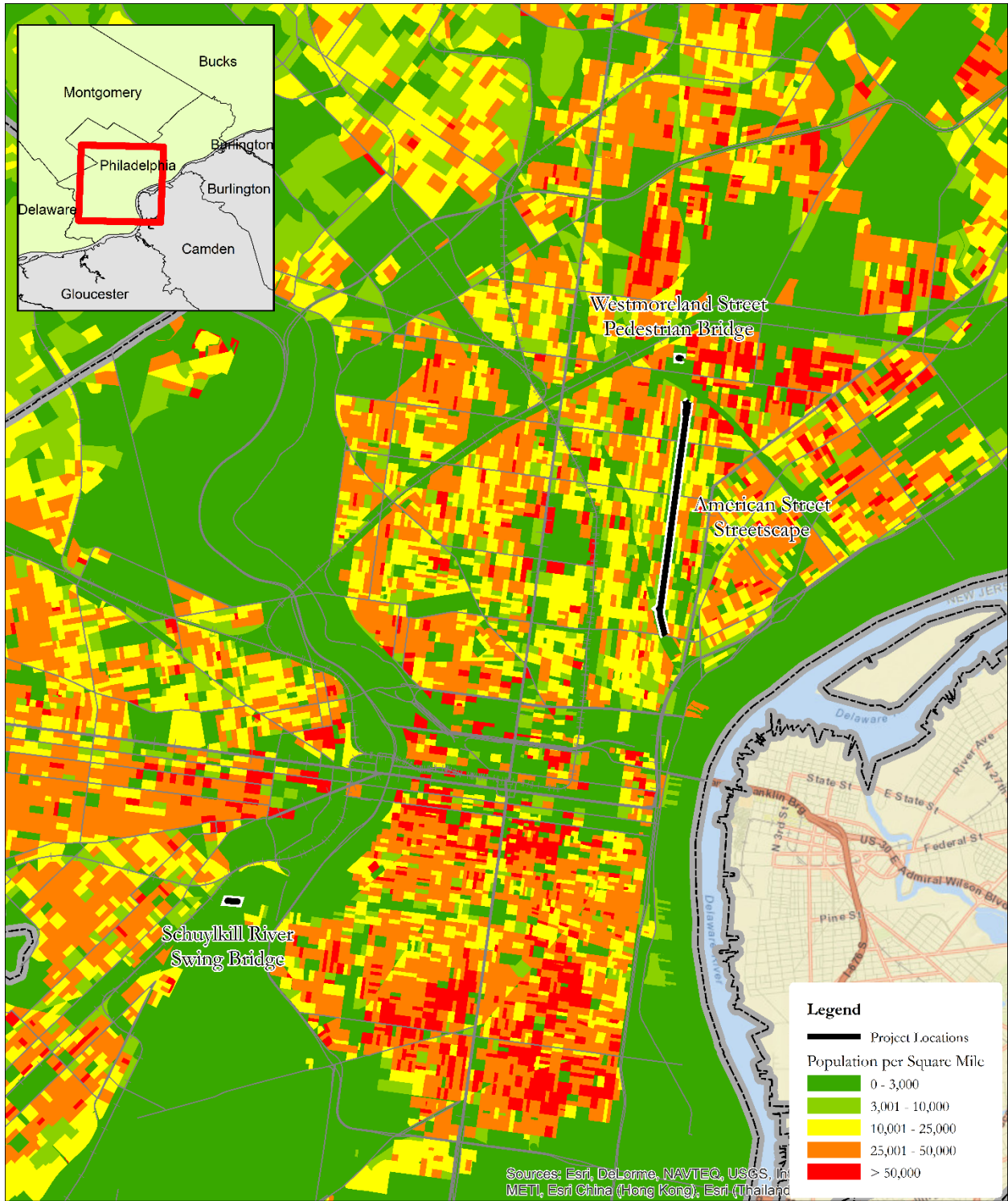
The City of Philadelphia is committed to equitable transportation solutions for access needs. *Closing the Gaps* has identified three key opportunities for community investment within neighborhoods marked by high crime and significant poverty. This project targets facilities where gaps persist as a legacy from a period when industrial use overshadowed community needs.

Exhibit 13 presents a summary of demographics of the project area. Each of the project components has at least 50% minority population, with **Adapting American Street** over 75% and **Over the Rails** 100% minority. *Closing the Gaps* is designed to meet the travel needs of traditionally underserved and underrepresented populations who are impacted most by breaks in pedestrian and bicycle networks.

Project Element	2010 Census Population within ¼ Mile of Project						
	White	Black	Native Am.	Hispanic	Total	Minority	% Minority
Adapting American St	9,698	3,779	387	15,208	22,752	19,374	85%
Over the Rails	2,313	1,103	238	5,754	6,774	6,774	100%
Over the River	546	807	9	57	1,717	873	51%
Total	12,557	5,689	634	21,019	31,243	27,021	86%

Exhibit 13 2010 Census Population within 1/4 Mile of the Project Area

As shown in **Exhibit 14** and **Exhibit 15**, the neighborhoods in the immediate vicinity of *Closing the Gaps* have high population densities and high proportions of minority residents that will be positively impacted by the project.



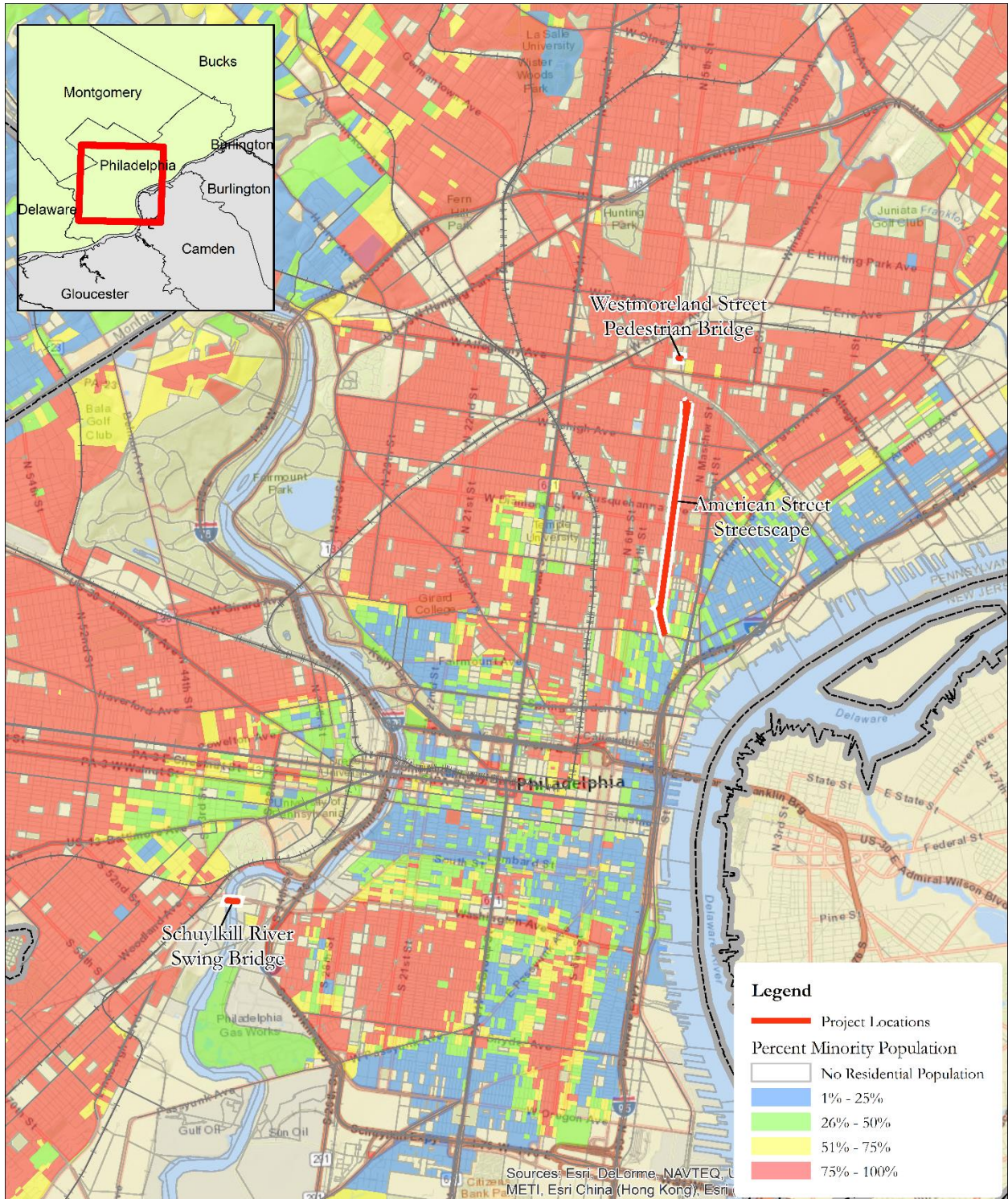
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 Source: 2010 Census Block Data
 Map Created: 4 June 2015



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Exhibit 14 Population Density



0 0.425 0.85 1.7 Miles
 Source: 2010 Census Block Data
 Map Created: 4 June 2015



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Exhibit 15 Minority Population Density

Project Parties

As shown in **Exhibit 16**, a collaborative group of partners are working together to implement and construct *Closing the Gaps*. In addition to these partners, numerous neighborhood associations and non-profits have been involved in identifying the project solutions that best meet the needs of their neighborhoods.

Project Partners	Role
Grant Recipient	
City of Philadelphia	The City of Philadelphia is the applicant for the FY 2015 TIGER Discretionary Grant Program. The Mayor's Office of Transportation and Utilities will administer the grant.
State Partner	
Commonwealth of Pennsylvania	The Pennsylvania Department of Transportation (PennDOT), Department of Community & Economic Development (DCED) and the Department of Conservation and Natural Resources (DCNR) have committed to financial and technical support.
Regional Partner	
Delaware Valley Regional Planning Commission (DVRPC)	The regional metropolitan planning organization (MPO) has committed to amending the FY 2015-2018 Transportation Improvement Program (TIP) to program additional federal funds to support this project.
Local Partner(s)	
Philadelphia Water Department (PWD)	PWD will oversee the management of fund for Adapting American Street
Philadelphia Streets Department	The Philadelphia Streets Department will oversee the management of funds for Adapting American Street and Over the Rails .
Schuylkill River Development Corporation	Will oversee the management of funds for Over the River .

Exhibit 16 Summary of Parties Participating in Closing the Gaps

Grant Funds and Sources/Uses of Project Funds

This project will require a coordination of funds from federal, state and local sources. As shown in **Exhibit 17**, there is a 35% non-federal TIGER match from the City and Commonwealth—an overall 71% TIGER match when including other USDOT funds programmed in the FY 2015-2018 TIP.

Grant Funds and Sources		
Funding Source	Total Amount	
TIGER	\$10,265,000	
Other Federal	\$12,200,000	
State	\$5,475,000	
Local	\$7,080,000	
Total Project Cost	\$35,020,000	
Funding Match	Total Amount	
TIGER Funds Requested	\$10,265,000	
Required Match (50%)	\$10,265,000	
Planned Match (71%)	\$24,755,000	
Non-TIGER Federal Funds	Total Amount	
Total Federal Dollars	\$22,465,000	
Required Non-Federal Match (20%)	\$5,616,250	
Planned Non-Federal Match (35%)	\$12,295,000	
Funding Breakdown		
Availability/Commitment of Funds Sources	Total Funding	Share of Total Project Costs by Funding Source
TIGER	\$10,265,000	29%
DVRPC FY 2015-2018 TIP	\$12,200,000	35%
Commonwealth of Pennsylvania	\$5,475,000	16%
City of Philadelphia	\$6,820,000	19%
Schuylkill River Development Corporation	\$260,000	1%
Total Funds	\$35,020,000	100%
Use of Funds by Project Element	Component	Use of Funds
American Street streetscape	Construction	\$9,000,000
American Street stormwater	Design	\$1,420,000
American Street stormwater	Construction	\$7,100,000
Swing Bridge	Construction	\$14,000,000
Westmoreland Street	Design	\$500,000
Westmoreland Street	Construction	\$3,000,000
Total Costs	All Component Phases	\$35,020,000

Exhibit 17 Sources and Uses of Funding

Selection Criteria

USDOT specifies criteria that will be used to evaluate each TIGER application. The City of Philadelphia has identified improvements to the **state of good repair** and **quality of life** as long-term outcomes and partial benefits to **safety, economic competitiveness and environmental sustainability**. The City has developed *Closing the Gaps* through **innovation** and **partnership** with intergovernmental agencies and community development groups alike. **Exhibit 18** summarizes how *Closing the Gaps* satisfies the TIGER selection criteria.

Criteria	How the Project Satisfies Criteria
PRIMARY	
Safety	All elements of the project will increase bicycle / pedestrian safety by separating vehicular from non-vehicular traffic. The project advances the City’s Complete Streets and Safe Routes to School initiatives.
State of Good Repair	All three components of <i>Closing the Gaps</i> address state of good repair by redeveloping underutilized or abandoned freight infrastructure to close network gaps. If left unimproved, these project areas will continue to deteriorate and threaten the efficiency of the local transportation network.
Economic Competitiveness	<i>Closing the Gaps</i> will improve access in travel nodes where disruptions are present. Over the Rails will provide uninterrupted access for a residential thoroughfare in the Fairhill neighborhood in North Philadelphia. This will open an additional route to SEPTA’s Allegheny rail station for transit dependent commuters by an additional westbound route.
Quality of Life	This project will anchor transformative community changes for residents within the project area by reconnecting neighborhoods isolated from direct access to the greater network.
Environmental Sustainability	<i>Adapting American Street</i> will reduce impermeable roadway surface and install on-site drainage and stormwater retention infrastructure consistent with the Environmental Protection Agency’s (EPA) goal of reducing impermeable surfaces.
SECONDARY	
Innovation	This project is the product of an innovative approach to filling in system gaps of an intricate multi-modal network. Over the River is a strategic solution to restoring bicycle/pedestrian access through reinvestment in a century old rail bridge. Philadelphia understands the utilization of existing conditions as critical to the solution of transportation issues.
Partnership	<i>Closing the Gaps</i> is a collaborative solution to transportation issues in North Philadelphia and West Philadelphia. The City worked with federal, state and local partners to coordinate funds and actively engaged citizen stakeholders for community input. This effort has led to planned community investment in four economically challenged neighborhoods.

Exhibit 18 How Closing the Gaps Satisfies TIGER Selection Criteria

Benefit-Cost Analysis

While this project has many indirect benefits, its primary long-term benefits are travel time benefits to students, commuters and other travelers who have no safe path to use to make their journey. As such, the benefit cost analysis focuses on time savings that accrue to inner-city students living and going to school within ½ mile of the sub-projects as well as commuters and other bicyclists/pedestrians crossing gaps in the network to demonstrate the project’s merits.

Other important benefits that were not quantified for this analysis include safety benefits that will result from the reconstruction and addition of these facilities. For example, the *Adapting American Street* sub-project includes a significant drainage and water retention component that should result in fewer slips and falls for pedestrians, especially in winter months. It will also include pedestrian islands that provide shelter for those crossing the road. The *Over the Rails* component will remove an antiquated, circuitous, and elevated pedestrian bridge in favor of a straight-line of sight at-grade roadway. That will result in fewer slip and falls as well as curtail criminal activity that occurs near the current pedestrian bridge. The *Over the River* component will provide a new connection between two multi-use trails on either side of the Schuylkill River keeping bicycle and pedestrian commuters / students off of busy streets where they are at greater risk of injury or death. Only because the data on the fiscal impacts of these types of improvements were not available were they not included in the benefit / cost analysis.

Findings

The benefit / cost analysis found that the project meets its goals which are to fill in gaps in the regional bicycle / pedestrian network with more cost efficient and safe improvements (**Exhibit 19**). In the short-term (i.e., during the design and construction phases of the project), the project will have very few negative impacts. Only the reconstruction of *American Street* will impact existing travelers and most of the roadwork will be done during off-peak periods. The *Over the Rails* and *Over the River* are new facilities where there is currently no vehicular traffic. As shown in **Exhibit 20**, the net present value (NPV) of the expected benefits of the project. This is true of each sub-project which has independent utility.

Current Status / Baseline & Problem to be Addressed	Gaps in the regional bicycle / pedestrian network and unsafe design
Change to Baseline / Alternatives	Fill in gaps in the regional bicycle / pedestrian network with facilities designed to enhance safe accessibility to schools and jobs
Type of Impacts	Reduced travel times and minor fuel savings
Population Affected by Impacts	Low-income commuters and students
Economic Benefit	Net cost savings of \$35.6 million over 20 year lifecycle.
BCA Page	Summary ¹
Summary of Results	Significant time savings and non-quantifiable impacts on safety and crime reduction

Exhibit 19 Benefit / Cost Analysis General Findings

¹ <http://www.wgianalytics.com/tiger7phl/docs/BenefitCostAnalysis-TIGER7-Philly.xlsx>

Summary Results for All Bridging the Gaps Project Elements with Independent Utility					
PROJECT Element	Net Present Value	Year NPV is Positive	Discounted Benefits	Discounted Costs	Benefit / Cost Ratio
1. Adapting American Street	\$10,870,522	2029	\$27,003,377	\$16,132,855	1.674
2. Over the Rails	\$11,229,702	2022	\$14,436,117	\$3,206,415	4.502
3. Over the River	\$13,521,828	2028	\$27,816,696	\$14,294,868	1.946
Total Project	\$35,622,053		\$69,256,190	\$33,634,138	2.059

Exhibit 20 Benefits / Cost Analysis Summary

Key Parameters

Estimating the net present value of a proposed project involves a series of parameters that quantify benefits and convert their future value to their present day value. The goal of the analysis is to understand whether the project’s benefits to society exceed in both the short and long-term. Because any number of parameters can change the outcome, parameters should be realistic, documented and tested so that decision-makers understand not only the benefits but where error or uncertainty could yield a different result. **Exhibit 21** presents the general parameters used to determine the net value of the benefit/cost analysis as well as the sources of underlying assumptions. These parameters are used consistently to evaluate all alternative scenarios.

Exhibit 21 Benefit / Cost Analysis Key Parameters

General Parameters			
Parameter Name	Description	Value	Units/Notes
Project Name	Bridging the Gaps		
Project Life		20	Years per NOFA
Discount Rate		3.00%	per annum Private Rate / NOFA
Values Expressed in		2015	\$
Value of Time		\$13.81	per hour (75% * median hh inc \$37,192/2080 hours)*(1+0.030)^(2015-2013-1)
Annualization Factor	From Auto	365	days/year that benefits accrue based on AADT
Annualization Factor	To Bicycle/Ped	200	days/year that benefits accrue (school year + margin for summer school)
O&M Cost Per Bike Lane Mile			
O&M Cost/Year		\$4,950.00	Per Lane Mile including painting, signage, garbage cleaning, etc., 20+ year repaving Assumes \$4,727 would cover both sides of road for additional 5' bike lane
Auto Impacts			
Travel Time Reduction	Auto	0.00%	of "Before" Total Travel Time (Operation)
Travel Time Increase	Auto	5.00%	of "Before" Total Travel Time (Construction)
Fuel			
Gasoline	Median All Grades	\$2.84	per gallon per http://tools.automotive.com/gas-prices/32/pennsylvania/philadelphia/#ixzz3c29oGs6D
Fuel Economy	MPG	50.0	Post 2020 CAFÉ Standard
Project Characteristics			
Sub Project	Length (mi.)	AADT2014	
Adapting Am. St	2.000	5,875	Reported by Mayor's Office of Transportation and Utilities
Over the Rails	0.027	-	New roadway connection w/ project, assume 750 cars per day after opening due to 1 way road and new
Over the River	0.189	-	New bike/ped facility (can be used by emergency vehicles but not counted)
Project Costs			
Sub Project	Total Cost	Yearly O&M	Design Cost
Adapting Am. St	\$17,520,000	\$9,900	\$1,872,345.00
Over the Rails	\$3,500,000	\$131	\$500,000.00

Over the River	\$15,713,456	\$938	\$1,213,456.00
Local Area Background Bike/Ped Trips (excludes school trips)			
Sub Project	Before Prj	After Prj	
Adapting Am. St	100	500	Redeveloping heavily urbanized area, major safety / drainage improvements
Over the Rails	100	200	New at grade street connection (vs. unsafe elevated ped bridge over abandoned railroad)
Over the River	100	2,780	Same as Nearest Schuylkill River Crossing @ South St (797+593)*2 w/ Dedicated B/P Facilities & trail conn.
Student Walk Trips			
/ Day	B/P Trips Per Student		
School Type	Trips / Student		
1. Elementary	1.8		90% attendance, walk/bike to and from school each school day
2. Middle	1.8		90% attendance, walk/bike to and from school each school day
3. High	1.8		90% attendance, walk/bike to and from school each school day
Local Area Elementary School Variables			
Sub Project	Enrollment	B/P Share	
1. Adapting American St	2,526	75%	5 Elementary schools in 2 mile corridor, heavily urban environment
2. Over the Rails	1,476	50%	railroad splits school from 50% of students, less than 1 sq mile school area
3. Over the River	617	40%	at border of 2 small elementary school districts
Local Area Middle School Walk Variables			
Sub Project	Enrollment	B/P Share	
Adapting Am. St	439	50%	most middle schools are mixed with elementary for reporting (above)
Over the Rails	-	0%	most middle schools are mixed with elementary for reporting (above)
Over the River	545	40%	most middle schools are mixed with elementary for reporting (above)
Local Area High School Walk Variables			
Sub Project	Enrollment	B/P Share	
Adapting Am. St	910	50%	road splits 2 high school districts (excl. charter), small area, highly urbanized
Over the Rails	2,425	25%	railroad splits school from 50% of students, less than 1 sq mile school area
Over the River	892	40%	at border of 2 small high school districts

Detailed Assessment

Transmitted with this document is the detailed Benefit / Cost spreadsheet developed for the project. The detailed assessment of benefits and costs evaluated the projects by each phases and time period. Due to nature of project delivery, the benefit/cost assessment evaluated each item separately and the time spent to delivery them. Each project item has independent utility.

The primary spreadsheet can be downloaded from the applications supporting website per the following link:

<http://www.wgianalytics.com/tiger7phl/docs/BenefitCostAnalysis-TIGER7-Philly.xlsx>

It is organized as follows;

- 1st Tab – **KeyAssumptions** – This is where any of the assumptions used in the benefit cost analysis are input and the source of parameters documented.
- 2nd – 4th Tab – **1.AmerSt, 2.OverRails, 3.OverRiver** – This is where the parameters from **KeyAssumptions** are applied and results are calculated for each year out to 20 years after construction. Separate analyses are presented by year for each of the following:
 - Automobile Delay during Construction
 - Design and Construction Costs
 - Operating Costs Before and After Construction pro-rated by year
 - Travel Time Savings for Automobiles and Pedestrian/Bicycle
 - Fuel Savings
- 5th Tab – **Summary**- Summary of Net Present Value, Benefits, Costs, B/C and Year NPV becomes a positive value
- 6th Tab – **Survey_FuelPrices**- Web survey of lowest current fuel prices in Philadelphia County, PA
- 7th Tab – **SchEnroll**- Web survey of school enrollment at each school in the project area

There is not a “No Build” scenario for this project as there would be no benefits (\$0) divided by the maintenance cost (any positive value), which would equate to a B/C of 0.00. Therefore all benefits and costs are relative to a zero baseline. Since the condition is binary (i.e., fill the gaps in the network or not), alternatives are not applicable. The design alternatives proposed in the *Filling the Gaps* project have been determined by City staff to be the preferred through a series of technical analyses, public outreach, and, agency coordination meetings.

Risk and Uncertainty

The City of Philadelphia has extensive experience managing TIGER and similar grants. Furthermore, because the areas are highly develop and mature urban areas, the demographic character, location of public schools, housing and associated and travel patterns in each sub-project area are well established. Household income levels in and around the project are already very low, often times, ½ the Philadelphia region area so the value of time, which is held constant in the analysis, is likely understated, given patterns of increased redevelopment and neighborhood stabilization observed. In fact, school enrollment in the area has increased steadily since 2010.

To insure the project maintains a net positive value regardless of a change in circumstances, a series of sensitivity tests were performed evaluating the relative cost savings assumed under various scenarios. Various tests were performed on key variables that could impact the overall long-term outcomes including varying the discount rate from 3% to 7% and doubling the estimated cost / mile for maintenance. As demonstrated in **Exhibit 22**, under all tested scenarios, the project maintains a positive net value².

Project Element	Net Present Value	Year NPV is Positive	Discounted Benefits	Discounted Costs	B/C Ratio
Summary Results for All Bridging the Gaps Sub-Projects- Baseline Scenario					
Adapting American St	\$10,870,522	2029	\$27,003,377	\$16,132,855	1.674
Over the Rails	\$11,229,702	2022	\$14,436,117	\$3,206,415	4.502
Over the River	\$13,521,828	2028	\$27,816,696	\$14,294,868	1.946
Total Project	\$35,622,053		\$69,256,190	\$33,634,138	2.059
Summary Results for All Bridging the Gaps Sub-Projects- Increase Discount Rate to 7% from 3%					
Adapting American St	\$3,300,426	2033	\$17,581,447	\$14,281,022	1.231
Over the Rails	\$6,539,138	2022	\$9,402,892	\$2,863,754	3.283
Over the River	\$5,464,411	2030	\$18,114,580	\$12,650,169	1.432
Total Project	\$15,303,974		\$45,098,919	\$29,794,945	1.514
Summary Results for All Bridging the Gaps Sub-Projects- Double per Mile Maintenance Cost from \$4,950 to \$9,900					
Adapting American St	\$10,739,659	2029	\$27,003,377	\$16,263,718	1.660
Over the Rails	\$11,227,967	2022	\$14,436,117	\$3,208,150	4.500
Over the River	\$13,509,436	2028	\$27,816,696	\$14,307,260	1.944
Total Project	\$35,477,063		\$69,256,190	\$33,779,128	2.050

Exhibit 22 Risk and Uncertainty (Sensitivity) Test Results

² Download <http://www.wgianalytics.com/tiger7phl/docs/BCATests-TIGER7-Philly.zip> to see detailed results

Project Readiness

Technical Feasibility and Independent Utility

The capital expenditures associated with *Closing the Gaps* are design and construction. As demonstrated in the Benefit-Cost Analysis (p. 20), each of the 3 components of the project have independent utility.

The City of Philadelphia, Mayor’s Office of Transportation and Utilities, has extensive experience and a demonstrated track record managing and completing TIGER-funded projects:

- TIGER I
 - Construction is complete on all seven projects and all TIGER funds expended
- TIGER III Project Completion
 - Bustleton Ave North (MPMS# 95451): 93.4%
 - Bustleton Ave South (MPMS# 95452): 68.16%
 - Woodland Ave Signals (MPMS# 95450): 83.41%

All of the project elements have been studied for years. In fact, *Adapting American Street* already has a CE on file which has since expired. Upon notification of funding, all NEPA or other required environmental certifications will be renewed/acquired. Since each of the project elements have been studied before, no significant technical feasibility issues will arise.

Financial Feasibility

The City of Philadelphia and partner agencies have committed \$24,755,000 in funding to improve three network gaps. This financial package bundles federal, state and local funds from a variety of sources committed to the **71% planned match—35% non-federal funds**. The award of the TIGER grant will complete the necessary funding to implement *Closing the Gaps*. A summary of the project budget is shown in Exhibit 23. Without additional federal funds from TIGER, all three sub-projects run the risk of becoming insolvent. TIGER represents a significant portion of construction costs and if the City is not selected for a TIGER grant, *Closing the Gaps* will be financially reevaluated for future feasibility.

Funding Source	Project Cost	Other Federal Funds (TIP)	Commonwealth Funds	Local Funds	TIGER Funds	TIGER % of Cost
American Street Design	\$1,420,000	\$0	\$0	\$1,420,000	\$0	0%
American Street Construction	\$16,000,000	\$7,200,000	\$0	\$3,900,000	\$5,000,000	31.0%
Over the Rails	\$500,000	\$0	\$0	\$500,000	\$0	0%
Over the Rails	\$3,000,000	\$0	\$0	\$1,000,000	\$2,000,000	66.6%
Over the River	\$14,000,000	\$5,000,000	\$5,475,000	\$260,000	\$3,265,000	23.3%
Total	\$35,020,000	\$12,200,000	\$5,475,000	\$7,080,000	\$10,265,000	29%

Exhibit 23 Project Budget

Financial Contingency

The City of Philadelphia has received guarantees of financial support³ from PennDOT (\$5,000,000) and DVRPC (\$12,200,000) towards *Closing the Gaps*. Based on preliminary

³To view Letters of Financial Support visit: <http://www.wgianalytics.com/tiger7phl>

engineering and cost estimates, DVRPC has programmed over \$12 million towards *Closing the Gaps* in the FY 2015-2018 TIP (**Exhibit 24**). These funds will be administered over the next three years following the project schedule.

TIP Funding	FY 2015	FY 2016	FY 2017	FY 2018
American Street	\$300,000	\$166,000	\$900,000	\$3,296,000
Over the River	\$424,000	\$0	\$0	\$0

Exhibit 24 Currently Programmed Funds in the DVRPC TIP

These costs are already committed to the project thereby minimizing the amount of TIGER funding required to fund the project.

Project Schedule

In the event of the *Closing the Gaps* project receiving a TIGER award, the City of Philadelphia will quickly arrange to continue the project schedule by entering into an executed grant agreement with US DOT. Once this agreement is in place, the City will complete all pre-construction activities before the June 30th, 2017 deadline. **Exhibit 25** denotes the expected due dates for each on-going process of the project specific tasks following the executed agreement.

Construction is expected to take 1 year and start by the beginning of January, 2018. Project delivery on the American Street and Swing Bridge segments are expected to be complete by 12/31/2019. Westmoreland is expected to be complete 6 months prior to the respective other 2 segments.

Process	Segment Name		
	American Street	Over the River	Over the Rails
PE Started / Complete	Y	Y	N
PE Complete	N	N	N
CE Evaluation	5/1/2016	5/1/2016	11/1/2016
PS&E Submission	5/1/2017	5/1/2017	5/1/2017
PS&E Approval	6/16/2017	6/16/2017	6/16/2017
Construction Advertisement	6/30/2017	6/30/2017	6/30/2017
Construction Award	10/31/2017	10/31/2017	10/31/2017
Planned Construction Start	12/31/17	12/31/17	12/31/17
Planned Construction Completion	12/31/2019	12/31/2019	6/30/2019

Exhibit 25 Project Schedule

Environmental Considerations

Adapting American Street

The American Street project will primarily be constructed within existing right-of-way and is not expected to impose negative environmental impacts. Expected improvements include the construction of a stormwater bio-swale in the median which will redirect stormwater from the edges of the street to the center. Due to the nature of this improvement, the project does not require legislative approvals and qualifies for a Categorical Exclusion (CE) from the NEPA Process.

Over the Rails

The *Over the Rails* project segment proposes to replace a decaying footbridge with a roadway that crosses over an overgrown gully that is approximately 150ft across. Current conditions have Westmoreland Street divided with only the footbridge connecting the two sides. The new roadway

reconnecting the two sides will be furnished with widened sidewalk. The project itself is a reconnection of a roadway that already exists. Due to the nature of this improvement, the project does not require legislative approvals and qualifies for a Categorical Exclusion (CE) from the NEPA Process.

Over the River

Due to the project's unique attributes and bridge element above the Schuylkill River, the *Over the River* project segment will be required to go through the applicable permitting process. Of note, the City of Philadelphia will need to acquire the following permits:

- DEP Joint Application Form (review timeframe – **6 to 9 months**)
- U.S. Army Corps Section 404 Permit (review timeframe - **30 to 90 days**)
- U.S. Coast Guard Bridge Application Permit (review timeframe – **6 to 9 months**)
- NPDES Permit (review timeframe – **30 to 90 days**)
- CLOMAR (review timeframe – **up to 1 year**)

The City will immediately pursue these permits to ensure that the project's construction is within regulated safety and environmental constraints to manage appropriate height clearance, disturbance during construction and affected water quality.

Federal Wage Certification Letter



CITY OF PHILADELPHIA

DEPARTMENT OF STREETS
Room 700 Municipal Services Building
1401 J. F. K. Boulevard
Philadelphia, PA 19102-1676

DAVID J. PERRI, P.E.
Streets Commissioner

May 27, 2015

The Honorable Anthony Foxx
Secretary of Transportation
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, D.C. 20590

Subject: TIGER 2015 Discretionary Grant

Dear Secretary Foxx,

The City of Philadelphia Department of Streets will comply with requirements of subchapter IV of Chapter 31 to title 40, United States Code (Federal Wage Rate Requirements) for all contracted or in-house work necessary to implement the proposed project.

The City of Philadelphia uses contract specifications requiring prime contractors and all subcontractors to pay their laborers, and mechanics employed under the contract, a wage no less than the prevailing wage applicable to their work classification. This is as specified by the current and applicable Federal Wage Determination. If no federal work classification appears to apply, the prime contractor shall make a written request to obtain the applicable work classifications and wage rates prior to the start of construction.

The prime contractor is responsible for ensuring subcontractors comply with Davis-Bacon and Related Acts requirements. If the City is awarded a TIGER grant, we will require all prime and subcontractors to meet all applicable federal wage rate requirements.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Carroll".

Michael Carroll
Deputy Commissioner for Transportation
Philadelphia Department of Streets

Conclusion

The City of Philadelphia is seeking a partnership with USDOT to provide funding for *Closing the Gaps – Adapting American Street, Over the Rails and Over the River*. This project reconstructs under-utilized or missing pieces of the City’s Complete Streets network and transforms them into accessible and bicycle / pedestrian safe thoroughfares. Improvements will increase accessibility for low-income and minority neighborhoods formerly isolated by gaps in the bicycle / pedestrian network.

By closing the gaps in Philadelphia’s multi-modal network, this project is directly in synch with USDOT’s *Ladders of Opportunity*. The project serves as an extension of the **City’s Complete Streets and Safe Routes to School** initiatives. Each component serves to reconnect Philadelphians isolated by the former industrial abandoned rail lines. This project aligns with USDOT strategic goals embodied within the TIGER selection criteria to **improve the state of good repair and improve the quality of life**. It builds upon existing plans within the *Connections 2040* the DVRPC long rang transportation plan to revitalize and reconnect American Street and the Schuylkill River swing bridge.

In addition to **endorsements from key legislators**, the project continues to receive endorsements from neighborhood community organizations in North Philadelphia where two project components are a mile apart. With **no adverse effects on traditionally underserved communities or detrimental impacts to the environment**, the project will be fully implemented by 2019. *Closing the Gaps* and its community led approach will reconnect neighborhoods to the larger multi-modal network and reclaim areas of Philadelphia from the industrial past for the present and the City’s future.

To review all of the supporting materials for this TIGER VII (2015) grant application, please visit the website:

<http://www.wgianalytics.com/tiger7phl>



<http://www.phila.gov>

MAYOR'S OFFICE OF TRANSPORTATION
AND UTILITIES

