

Building Baltimore Penn Station Connections

*Infrastructure Investments to Improve Accessibility and
Leverage Public/Private Partnerships*

FY20 BUILD APPLICATION



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1. Project Description

The Maryland Department of Transportation Maryland Transit Administration (MDOT MTA), in partnership with Baltimore City Department of Transportation (BCDOT), Central Baltimore Partnership (CBP), Maryland Department of Housing and Community Development (DHCD), Amtrak, and Baltimore Penn Station Partners, requests **\$6.2 million** in BUILD grant funds for ***Building Baltimore Penn Station Connections Project***. These funds will complete the funding package for a **\$10 million** project that addresses existing connectivity issues in this central urban hub and prepares for the anticipated growth in transit ridership. The Project will also spur the significant revitalization of this federally-designated Opportunity Zone, increasing private investment, population, and job opportunities.

Baltimore's Penn Station (the Station) is the heart of transportation and connectivity for the City of Baltimore, state of Maryland, and the region beyond. As a vital intermodal center, the Station provides rail and bus connections for residents to access jobs, services, and education across the city and throughout the region using MDOT MTA and Baltimore City Charm City Circulator transit modes and Amtrak rail service. MDOT MTA Light Rail, Commuter Train (MARC), and bus services all directly connect at Baltimore Penn Station with Amtrak Acela, Northeast Regional, and long-distance rail service. Additionally, multiple private regional bus services connect to Baltimore Penn Station, as do several college, university, and employee shuttles.

Ridership in the Northeast Corridor (NEC) is expected to double by 2040, which is driving phased upgrades and reinvestment. Baltimore Penn Station currently services 84 daily Amtrak trains on weekdays, with hourly Acela and Northeast Regional service, and 5 daily long-distance round trips. Locally, 10 bus routes stop at or within 2 blocks of Baltimore Penn Station, including 5 high-frequency lines and 2 commuter bus lines. The Station is a key transfer point between bus service and local and commuter rail services, with MARC providing rail service (58 trains per day) from Washington, D.C., to Perryville, M.D., and light rail service south to the Baltimore-Washington International Airport (BWI) and north to Hunt Valley, MD. Ensuring that the Station continues to provide efficient, safe, and reliable access to transit passengers' many origins and destinations is critical to the local, regional, and national economy.

To this end, MDOT MTA, DHCD, Amtrak, CBP, and BCDOT are committed to cooperatively planning and implementing infrastructure investments to strengthen this area and support the region's growth and connectivity. ***The Building Baltimore Penn Station Connections Project*** (the Project) provides multimodal infrastructure investments around Baltimore Penn Station to improve transit, walking, and bicycling connections to support the station's role as an intermodal hub in the heart of Baltimore City and to enable passenger traffic through the Station to grow. Investments will also facilitate safer and more efficient access to Transportation Network Companies (TNCs) including vehicular rideshare, bikeshare, and scootershare.

This project offers benefits that include:

- *Improving the safety of transportation options with well-designed streets that support safe walking, biking, transit use and for-hire vehicle use.*
 - *Provide faster and more reliable transit travel times.*
 - *Supporting projected doubling of rail passenger ridership by 2040 with multimodal connections to the station.*
 - *Leveraging the \$100M+ commitment from Amtrak and \$450 million + from Penn Station Partners to redevelop and expand the historic station.*
-



This project complements Amtrak investments of over \$100 million in Baltimore Penn Station modernization and expansion and \$2.5 billion in a new fleet of Acela trains and improvements to Northeast Corridor infrastructure and stations. As the NEC gateway to Baltimore and the region, the Amtrak investment launches a bold public-private partnership with Baltimore Penn Station Partners' \$450+ million transit oriented mixed-use development. Located in a Federally-designated Opportunity Zone, this master redevelopment will reconnect the City north and south, east and west, at this historic crossroads. A BUILD grant award will ensure local and state project partners fully leverage this private investment and job creation opportunity.

Project Components

This multimodal safety and accessibility project is designed to stimulate economic growth at the local and regional level. The Project comprises four coordinated, complementary components that work together to enhance the project area's safety, state of good repair, economic competitiveness, environmental sustainability, and quality of life. These multimodal improvements will support the development planned for Baltimore Penn Station and improve connectivity with nearby transportation investments. The components are detailed below and depicted in Figures 1 and 2.

- A. Transit Priority Treatments:** Dedicated bus lanes and curb extensions on Charles and St. Paul Streets that will connect to the bus lanes developed through the North Avenue Rising TIGER grant investment.
- B. Bus Stop Amenities:** Bus stop amenities such as real-time signage.
- C. Curbside Management:** Dedicated curbside station frontages for bus stops, rideshare, and for-hire vehicle pick-up and drop-off to improve the safety and efficiency of intermodal connections.
- D. Bicycle and Pedestrian Connectivity and Facilities:** Coordinated investments that facilitate clear, safe, and inviting access between Baltimore Penn Station and the surrounding area for bicyclists and pedestrians including:
 - Realigning the Jones Falls Trail to use the Maryland Avenue and Mt. Royal Avenue Cycle Tracks
 - Traffic signal adjustments on Charles and St Paul Streets between Mt Royal and North Avenue to facilitate safe crossing
 - Crosswalk improvements at several intersections on Charles St. and St. Paul St. between Baltimore Penn Station and North Ave.
 - Streetscaping and landscaping focused along Charles St. and St. Paul St. adjacent to the station, including improved wayfinding, lighting, and security cameras
 - Innovative, interactive information kiosks providing real time multimodal travel options, events programming, services and resources, and retail service options
 - Secure bicycle parking facility at Baltimore Penn Station



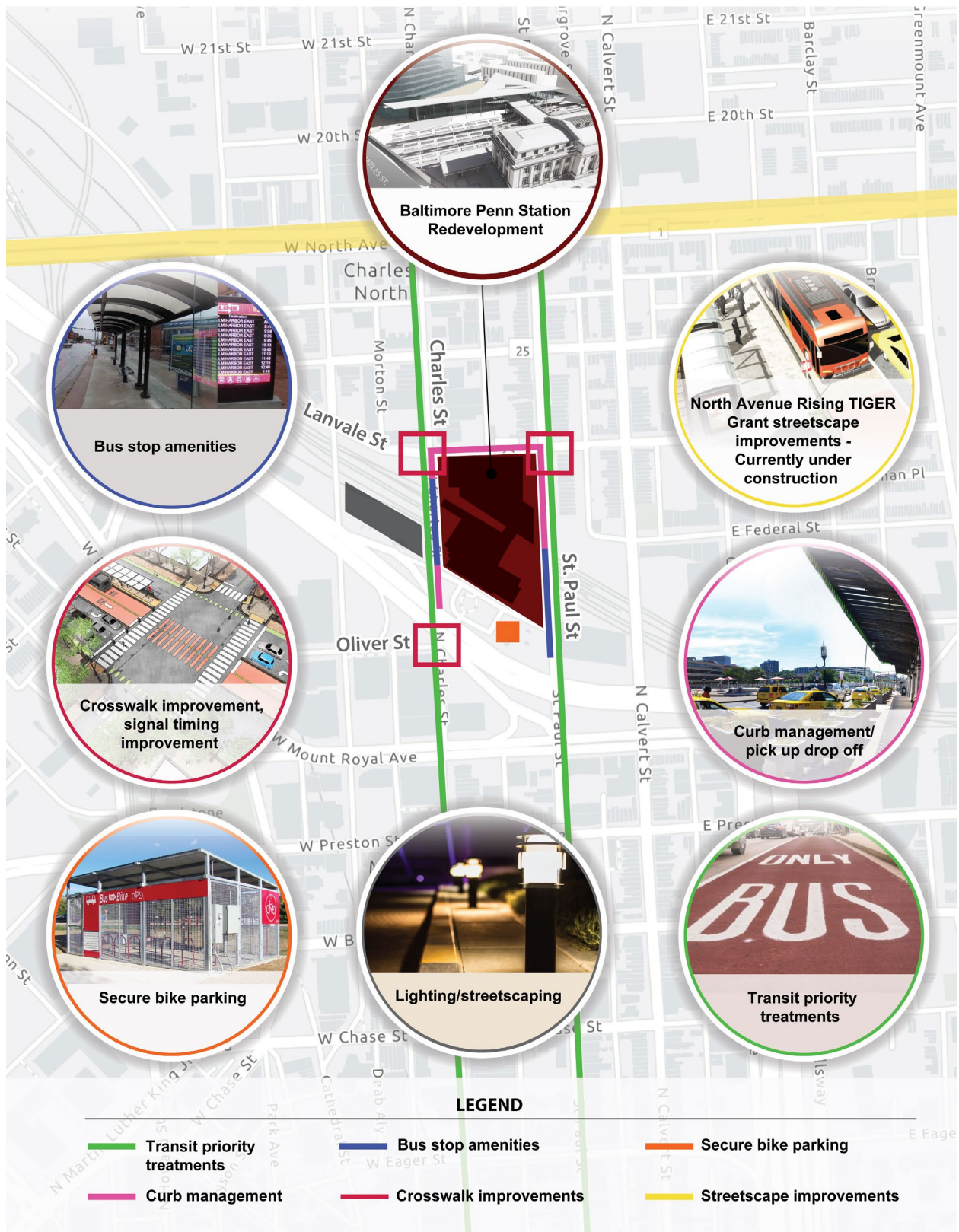


Figure 1. Building Baltimore Penn Station Connections Project Elements

Project Need

This project provides key investment in the most important intermodal hub in Baltimore City and a critical link in the Amtrak and Acela Northeast rail corridor. While Baltimore Penn Station has historically been an intermodal transit hub, growth of vehicular traffic has caused challenges in efficiently and safely moving transit, bicycles, and pedestrians to and from the Station. Amtrak and a private developer have partnered to invest over \$550 million to operationally upgrade and modernize the station while adding retail and office space opportunities. The redevelopment of Baltimore Penn Station and addition of an expanded concourse provides an opportunity to reimagine the way all modes access the Station. This station redevelopment is further detailed below in Project History.

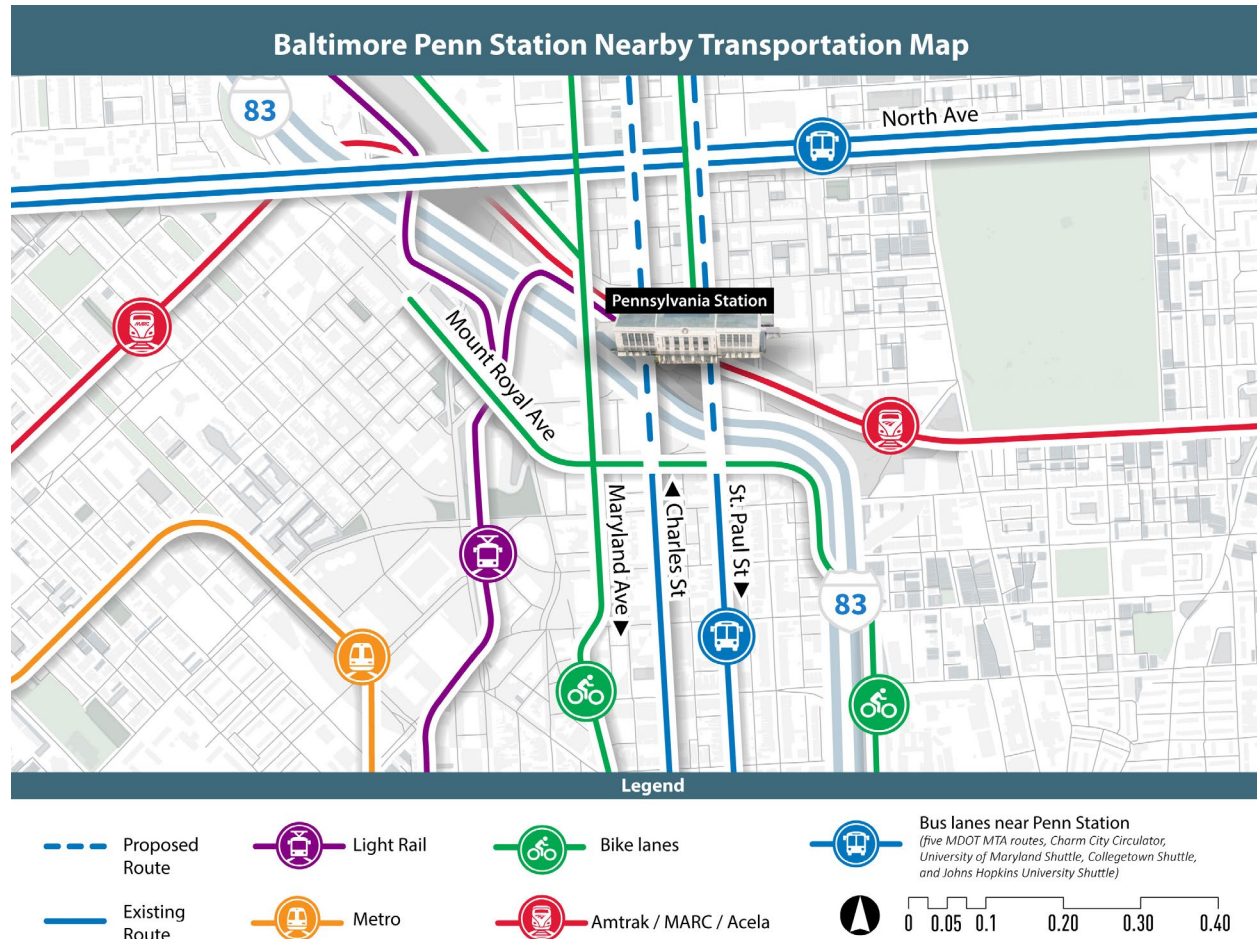


Figure 2. Transit Network Connections Around Baltimore Penn Station

Figure 2 illustrates the existing multimodal connections at Baltimore Penn Station. This project will fill gaps in multimodal infrastructure and provide the transit, bicycle, pedestrian and for-hire vehicle connections needed to safely transport passengers between the redeveloped station and Baltimore City. A discussion on these infrastructure gaps is detailed below.

Modal Choice at Baltimore Penn Station Rail Passengers (2019)	
Mode	Percentage of Passengers
Transit	29%
Walk	28%
Auto – Park	18%
Auto – Pick-up/ Drop-off	14%
MDOT MTA Bus	13%
Taxi	10%
Bike	1%

Table 1. Baltimore Penn Station Access Modal Choice

The existing bus conditions create several challenges for bus on-time-performance, passenger safety, and traffic operations:

- Buses share lanes with vehicular traffic on Charles and St. Paul Streets, causing buses to experience delays during peak hours, when the roads experience higher vehicular congestion. This degrades on-time-performance at a time when many riders need to transfer from bus to MARC and Amtrak trains, leading to poorly-performing bus-train linkages.
- While there is a real-time information sign at the St. Paul Street bus stop, there are opportunities to add these amenities at the Charles Street stop and/or inside the Station to inform riders of bus arrival times and route delays.
- Buses have limited curb space to drop off passengers. This creates delays for buses that must wait for the preceding bus to leave the stop. Alternatively, buses let riders off outside of the bus stop area in areas that are not designed for bus drop-off and are therefore less safe for riders. These areas also do not have the required Americans with Disabilities Act (ADA) accessibility features.
- There is no designated space for TNCs to drop off and pick up passengers, resulting in these vehicles blocking the bus stops.

This project addresses these issues by adding dedicated bus lanes to Charles St. and St. Paul St. and real-time bus information to the bus stops outside of Baltimore Penn Station. This will improve bus reliability, reduce conflict between buses and vehicles, improve passenger safety, and improve traffic flow by reducing conflict between through-traffic and buses stopping at the station.

Pedestrian Infrastructure

Baltimore Penn Station is surrounded by neighborhoods, universities, commercial development and cultural institutions, and over a quarter of those traveling to the Station do so on

Transit

Charles St. and St. Paul St. are two of the highest-volume bus routes in Baltimore City. MDOT MTA operates five routes on these streets, including two CityLink high-frequency routes, two LocalLink routes, and an Express Bus. Additionally, the BCDOT *Charm City Circulator*, University of Maryland Shuttle, Collegetown Shuttle, and Johns Hopkins University Shuttle operate bus routes on these arteries. During morning and afternoon peak periods, Charles St. has 38 buses per hour, with buses arriving at the station about every 2 minutes. St. Paul St. has similar bus volume, with 32 buses per hour during peak periods, and buses arriving about every 2 minutes.

Bus Station – Charles Street

Charles Street at Penn Station Bus Stop Facing South

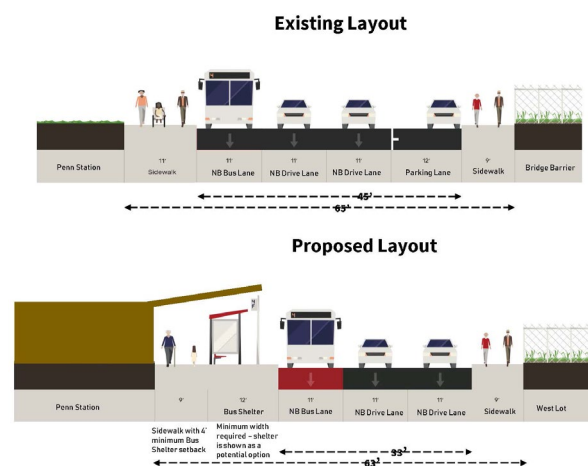


Figure 3. Cross-section of Charles St.



Figure 4: Crosswalks on St. Paul and Lanvale St. Intersections

foot. Further, the plaza in the front of the Station serves as a community gathering place, with welcoming pedestrian spaces around a public art installation. Pedestrian activity will grow with the development of an expanded station concourse facing Lanvale Street. Therefore, safe pedestrian infrastructure connecting to the Station is critical. Currently, the Station is serviced by sidewalks on all roads, but has several unsafe crossings at key intersections that connect to institutions with high pedestrian traffic and low visibility for pedestrians.

The stretches of Charles and St. Paul Streets from the Station to North Avenue provide important pedestrian connections between the Station, businesses and residential communities, as well as to east-west bus routes. However, the crosswalk markings at the intersections are faded and difficult for drivers to see, creating safety concerns for pedestrians. Additionally, these streets have poor lighting at night, further reducing pedestrians' real and perceived safety while walking on these streets. The Project will add new intersection markings, landscaping, pedestrian-scale lighting, security cameras, and curbs to these streets to improve the safety of walking to and from the Station.

The Project will also add pedestrian improvements to Lanvale and Oliver Streets. Lanvale Street provides access to the Jones Falls Trail, a 10-mile hiking and bicycling trail that serves as a major transportation corridor for the City. Oliver Street provides access to cultural centers, including museums and concert halls; the University of Baltimore; and Light Rail.

Bicycle Infrastructure

The bicycle network surrounding the Station includes two buffered, two-way cycletracks that provide safe bicycle connections to Baltimore Penn Station from Johns Hopkins University to Downtown Baltimore. These cycletracks were built in the past four years and provide well-connected, safe bicycle connections along major roadways running north-south and east-west. While some robust infrastructure has been installed on major roadway conduits, such as the dedicated lanes on Maryland Ave. and Mount Royal Ave., it is disjointed and disconnected from the Station. By making connections to these thoroughfares, the Project will exponentially increase the returns on enhancements of bike connectivity to other parts of the City. Further, this infrastructure provides access for low-income residents and enables "last mile" connections from the Station.



Figure 5: The Mt. Royal Cycle Track connecting to Penn Station

While these cycletracks increase the range within which cyclists can easily access Baltimore Penn Station, the Station lacks a secure place for commuters to park their bicycles. The lack of access-controlled bicycle parking deters commuters from cycling to the Station because of concerns with the security of their bicycles while they are gone, as there is a history of thefts of bicycle lights and wheels.

The Project will address this challenge by adding secure, modern bicycle storage that controls access to only the cyclists using it. With a safe place to store bicycles, station users will feel more comfortable commuting by bicycle to Baltimore Penn Station, supporting the significant recent investments in two-way cycletracks connecting to the Station from across the city. Additionally,



in light of the recent COVID-19 pandemic, this infrastructure will enhance an alternative to mass transit for commuters, which accommodates social distancing and increases the resiliency of the region in the event of a future public health emergency.

For-Hire Vehicle Infrastructure

Taxis and Uber/Lyft vehicles compose approximately 10 percent of passenger trips to and from Baltimore Penn Station during peak periods. For-hire vehicles currently pick up and drop off passengers on St. Paul St. in a single lane designated as a cab stand, or in the pick-up/drop-off loop immediately in front of the Station. With the concourse expansion and increased Amtrak service, the volume of passenger traffic is projected to increase by 48 percent by 2025, which will increase for-hire vehicle demand. The existing cab stand does not provide sufficient space to meet increased demand. Further, TNCs are not permitted to use the cab stand, and therefore block the bus stops when picking up and dropping off passengers (Figure 6).



Figure 6. TNCs frequently block bus stops, impacting travel time

To address this challenge, the Project adds new dedicated pick-up/drop-off cut-in lanes on both Charles and St. Paul Streets, which are separated from the travel lanes. This will increase the curb space provided for these vehicles and better manage the curb space for pick-up and drop-off activities.

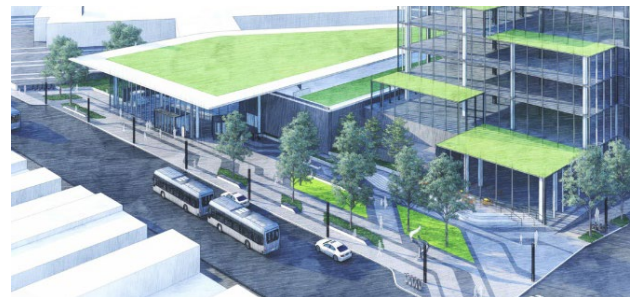


Figure 7. Proposed transit passenger pick up/drop off at Baltimore Penn Station on St. Paul Street

Project History

The Station offers a unique combination of stunning Beaux-Arts architectural design and an adaptable transportation hub. The Station combines beautiful design with function and serves as a welcoming gateway to Baltimore City (Figure 8). With its proximity to cultural landmarks and anchor institutions, investments that celebrate and elevate this important piece of railroad history are needed.



Figure 8. Historic image of Baltimore Penn Station

Built in 1911, Baltimore Penn Station has served Baltimore and the Northeast region for over a century. Bordered by a rapidly growing housing and commercial market, this century-old station is facing both state of good repair needs expected from a building of its age, but also the changing demands of modern transportation patterns



and needs. In 2015, Amtrak initiated a solicitation for a Master Developer partner to complete the SGR improvements, as part of a comprehensive redevelopment, expansion, and commercial Transit Oriented Development. Amtrak selected Penn Station Partners (PSP), and entered into the Master Development Agreement to start implementation in 2019.

Together with neighborhood partners, Amtrak, MDOT MTA, and the City of Baltimore have continually invested in Baltimore Penn Station to address infrastructure and SGR needs. Ongoing coordination has continued to improve station and rail facilities, optimize the passenger experience, and transform the station into a community resource for public engagement.

Baltimore Penn Station straddles the Midtown and Charles North communities, serving as the northern gateway to Downtown Baltimore. Despite its central location and convenient connections to the rest of the City, the residential communities and businesses surrounding this area have faced challenges over the past several decades. Collaboratively leading the urban revitalization effort, MDOT MTA, the City of Baltimore, the Mayor's Central Baltimore Partnership (a non-profit that works to revitalize 11 Central Baltimore neighborhoods), and other partnering agencies and organizations are revitalizing the area surrounding Baltimore Penn Station. Since 2007, the total development investment for Central Baltimore is \$440 million with, \$203 million in completed development, and \$237 million in development underway. Some of the completed projects within a half-mile of Baltimore Penn Station include:

- Nelson Kohl Apartments – 130-unit mixed use building with an art gallery, café, and market
- City Arts Apartments – 69-unit affordable housing building that serves local artists
- Parkway Theater – Historic theater restored and reopened in 2017
- Baltimore Design School – Grade 6-12 public school with an academic focus on graphics, fashion, and architecture design
- The Centre Theater – Historic theater restored and reopened as a performing arts center in 2015
- The Motor House – Non-profit arts hub, gallery, and performance space focused on local artistry
- Railway Express Lofts – 30-unit mixed-use building that was formally a United States Post Office
- University of Baltimore Law Center – Includes 58 full-time faculty, 678 full-time students, and 154 part-time students

“ By investing in the modernization of Baltimore Penn Station, Amtrak seeks to transform central Baltimore into a premier regional transportation hub that will provide new amenities and transit connections. This work is part of Amtrak’s ongoing efforts to improve the customer experience and grow passenger rail.”

Former Amtrak CEO Richard Anderson

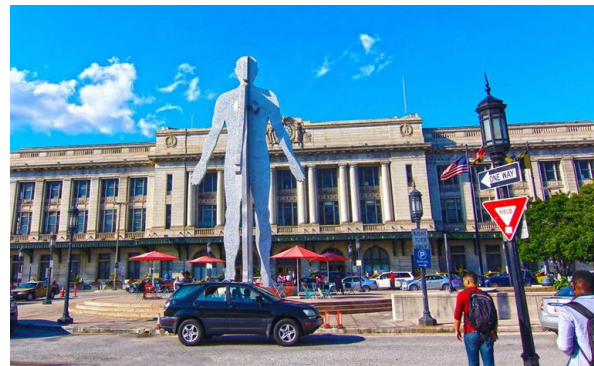


Figure 9. Baltimore Penn Station Pedestrian Plaza

This project leverages over \$450M of Amtrak and private development investment, and over \$200M in recent development.

Relationship to Other Transportation Investments

The Project complements and builds upon multiple transportation investments in the area. *Building Baltimore Penn Station Connections* carefully considers these other transportation investments to leverage public and private investments to produce benefits for the local, state, and regional stakeholders greater than would be yielded by any of these investments completed in isolation. Several key projects are detailed below.

Station Modernization and Expansion

Baltimore Penn Station is the eighth busiest Station in Amtrak's national network, with over three million Amtrak and MARC passengers passing through the Station per year. The Station is critical to transportation efficiency and connectivity for the City of Baltimore and the region, as it serves Amtrak's high-speed Acela, Northeast Regional and long-distance trains, MARC Penn Line, Light Rail, local and commuter buses, and various University shuttles. Additionally, Amtrak's new Acela trains will reduce commute times from Baltimore to Washington, D.C., to the south and Wilmington and Philadelphia to the north. This greater connectivity to major East Coast job centers and economic engines provides enormous opportunity for Baltimore's economic development.

The Project complements and leverages Amtrak's Baltimore Penn Station Investment and Redevelopment Program, which is funding improvements that will:

- *Increase capacity*
- *Elevate the customer experience*
- *Improve connectivity*
- *Consider environmental impact*
- *Enhance safety*
- *Foster economic development*

To support today's demand as well as the projected future growth, Amtrak recently committed over \$100 million toward station modernization and expansion that preserves and celebrates the beauty of this historic place. Amtrak's Baltimore Penn Station investment and redevelopment program is demonstrative of Amtrak's continuous improvement of the Station, dedicating significant resources to improve station conditions, customer amenities, and track infrastructure in the near-term. The first phase of rail infrastructure work at the Station as part of Amtrak's investments includes the renovation of an existing platform to bring it back into service and construction of a new high-speed rail platform. **These investments will operationally facilitate the Station to become a true transit hub for rail and bus.**

The planned Station expansion will accommodate a projected increases in ridership in Amtrak and MARC ridership by 2025. Further, Amtrak daily trips through the Station are projected to increase from 3,500 today to 5,400 by 2025 with the introduction of new Acela high-speed rail trains and increased service frequency. During this same period, MARC daily trips are projected to increase from 6,900 to over 10,000. Figures 15 and 16 in Section 4 illustrate this growth.

Station Mixed-Use Development

Recently, Baltimore Penn Station Partners, a Baltimore-based development team with global expertise, began designing a \$450+ million, multi-phased, mixed-use development that could bring as much as 1.6 million square feet of development to the area. Preliminary concepts include shared office innovation hub in the historic station Head House, as well as hotel, retail, office, and residential space to the north along Lanvale Street and on five Amtrak-owned development parcels east and west from the Head House. A new high-speed rail platform and rail passenger concourse on the north side of the tracks will connect directly to these development opportunities.

The Baltimore Penn Station master redevelopment knits together the high-energy Station North Arts District with adjoining neighborhoods and downtown. Anchored by three universities—University of Baltimore, Johns Hopkins University, and Maryland Institute College of Art—Station



North is the hub of arts, film, creative digital media and innovation for the region. As a multimodal transit hub and gateway to the NEC, the Station is critical to rebuilding the City's economy.

Baltimore Penn Station planning efforts actively engage Amtrak, MDOT MTA, City of Baltimore, Central Baltimore Partnership, and numerous community groups and stakeholders in a robust collaboration to ensure Baltimore Penn Station remains a community asset and catalyst for economic revitalization. Amtrak and PSP have entered into a Master Development Agreement to advance the Station redevelopment project.

Driving the *Building Baltimore Penn Station Connections Project's* need and purpose is the significant investment and redevelopment underway at the Station. Federal designation as a Qualified Opportunity Zone is already attracting private investment. As a national model, Baltimore Penn Station will demonstrate the power of Opportunity Zones to maximize critical private investment and job creation in distressed communities and creating a shared prosperity.

North Avenue Rising TIGER Project

In 2016, MDOT MTA and BCDOT jointly applied for and were awarded TIGER funding to unlock state and local funding to support economic revitalization along North Avenue (a critical five-mile east-west corridor) through increased mobility and to broaden access for residents of the corridor to economic opportunity throughout Baltimore. The project, which is now under construction, includes dedicated bus lanes supported by transit signal priority, enhanced bus stops, roadway repaving, and streetscaping; as well as renovations to the Penn/North Metro Subway station. This \$27.3 million project comprises \$10 million federal funds from TIGER, \$14.7 million in MDOT funds, and \$1 million from Baltimore City. The remaining \$1.6 million is funded by the FHWA Surface Transportation Block Grant Program.

North Avenue offers East-West transit connections just three blocks away that complement and directly connect to this project's North-South access. Creating meaningful linkages to connects these two corridors of dedicated bus lanes (Charles St./St. Paul St. and North Ave.) increases the benefits of each beyond the sum of their parts. This BUILD application includes strategic coordination with the North Avenue Rising project, with pedestrian improvements that create safer connections and transit priority treatments that leverage the dedicated bus lanes on North Avenue.

MDOT MTA Bus Network Redesign

MDOT MTA invested \$135 million to overhaul and rebrand the transit system as BaltimoreLink between 2015 and 2017. Prior to this network redesign, MDOT MTA's bus system had many antiquated routes that did not serve current job centers, and trip lengths were too long to deliver reliable service. MDOT MTA's bus system now delivers more efficient and reliable service by creating a network for high-frequency routes with stronger connections between all MDOT MTA modes.

This proposed BUILD project invests in corridors with some of the system's highest bus ridership, facilitates greater reliability, and safely and efficiently connects passengers between modes several modes, including local bus, MARC, light rail, and Amtrak.

Recent Bicycle Infrastructure Investments

Baltimore City DOT has built two protected two-way cycle tracks around Baltimore Penn Station in the past four years. The Maryland Avenue cycletrack was built in 2016 and provides a major north-south conduit through the middle of the city, with a bicycle route from Johns Hopkins University Homewood Campus to Downtown Baltimore. This route is used by an average peak hour ridership of 310 people biking per day. The Mount Royal protected cycle track was built in



2018 and extends from the Mount Royal Ave./ I-83 on-ramp to the Mount Royal Ave./ Lafayette St. intersection at MICA.

The bicycle network will continue to expand around Baltimore Penn Station, as Baltimore City DOT is exploring extending the Mount Royal cycle track north to reach North Avenue. These two cycle tracks provide safe bicycle access within two blocks of Baltimore Penn Station and are significant in allowing commuters to safely cycle to the station. Additionally, all of the MDOT MTA dedicated bus lanes are shared bus/bike lanes, providing infrastructure for bicyclists along these key corridors.

Benefits to Rural Communities

While Baltimore City is a major metropolitan city with over 2.8 million people in its metropolitan region, Baltimore Penn Station serves as a key transportation hub that connects rural populations to the jobs and services that they may not have access to in their own communities. MDOT MTA MARC's Penn Line serves Edgewood, MD, and Perryville, MD, both of which directly serve areas designated as rural. Together, these two stations provide approximately 320 station boardings on an average weekday. Additionally, Cecil Transit operates a bus from Perryville MARC Station connecting to Newark Station in Delaware, expanding the reach for rural commuters from neighboring Delaware, New Jersey, and Pennsylvania to access the Penn Line and jobs along the corridor. According to passenger surveys, nearly 80% of MARC Train passengers trips are for commuting trips systemwide; suggesting that many if not most of those traveling from these rural communities are doing so to access jobs. Additionally, Amtrak serves rural communities with trips to and from Baltimore Penn Station.

2. Project Location

The proposed project is located in central Baltimore City, Maryland along the four streets surrounding Baltimore Penn Station. This project is entirely within the Baltimore, MD Census-designated Urbanized Area (UZA) and part of the State's 7th Congressional District. Geospatial coordinates for the project are 39.308 latitude, -76.616 longitude.

As Figure 10 shows, the project will improve the following streets surrounding Baltimore Penn Station.

- Charles St.
- St. Paul St.
- Oliver St.
- Lanvale St.

Charles St. and St. Paul St. are Baltimore's central north-south arteries, which run from Baltimore County through Downtown Baltimore. Oliver and Lanvale Streets run east-west and bound the Station to the north and south. The project will improve these four streets, with transit, curb management and streetscape improvements running north-south on Charles and St. Paul Streets and bicycle/pedestrian improvements on Oliver and Lanvale Streets. The Station is three blocks south of North Avenue, a major east-west route that is undergoing transit infrastructure and streetscape improvements as part of the *North Avenue Rising* TIGER grant. The dedicated bus lanes proposed in this project will connect to those developed through the *North Avenue Rising* project.

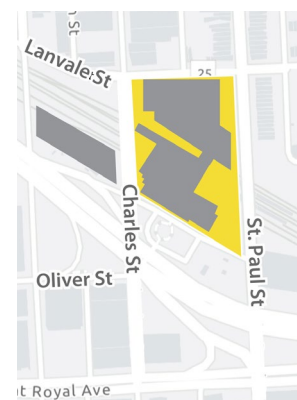


Figure 10. Project location

Significance of Project Location

Baltimore Penn Station is on the Northeast Corridor and is a regional hub for Amtrak, Acela, and MARC Commuter Rail, providing critical access to jobs both within Baltimore as well as in Washington, D.C. The Project makes the connection between the City of Baltimore and 20 percent of the U.S. GDP. Ensuring this key connection on the NEC serves as a catalyst rather than a bottleneck preserves and advances the American economy.

“This is an important project for the City of Baltimore and one that we need to get right.”

Michael Beatty, President of Beatty Development Group (Partner in PSP)

Further, it is a significant gateway to Baltimore City, providing an historic landmark and cultural destination. Baltimore Penn Station is located between the historic Mount Vernon and Station North neighborhoods, approximately one mile north of Downtown Baltimore. The station’s geographic centrality and location at the confluence of institutions, high-density neighborhoods and major arteries makes it a strong transit hub. Baltimore Penn Station’s position at the junction of Mount Vernon and Station North give it a unique diversity of activity and attractions. Once home to Baltimore’s wealthiest residents, the Mount Vernon neighborhood has a number of significant cultural institutions, shops, restaurants and architectural landmarks that solidify its role as a center of tourism and commerce in the city. Station North is a State-designated Arts and Entertainment District, which has spurred recent development of theaters, art galleries and arts education. Baltimore Penn Station is also nestled between several universities, including the University of Baltimore to the south, Maryland Institute College of Art (MICA) to the west and Johns Hopkins University to the north.



Figure 11. Surrounding Neighborhoods and Notable Locations

While the Station is surrounded by commercial and cultural anchors, it is also bordered by several of the state’s highest-poverty neighborhoods, where up to 40 percent of residents live below the poverty line and 14% of buildings lie vacant. Further, 21% of the population in these census tracts do not have access to a private vehicle. Consequently, the Station’s role as a transit hub and transfer point for 10 bus lines is critical to residents for whom transit is the primary mode of transportation. The ability to access frequent, reliable transit has the potential to dramatically impact individuals’ access to jobs, services, amenities, and life’s opportunities.

KEY STATISTICS IN THE PROJECT AREA				
% Population Below Poverty Line	% Population Without Access to Private Vehicle	% Commute on Transit, Bike or Walking	% Vacant Houses	% Not Employed
29%	21%	52%	14%	38%

Table 2. Key Statistics in the Project Area

Transportation Connections

Baltimore Penn Station is well-connected to the existing roadway and transit networks. I-83, an interstate with termini in Harrisburg, PA, and Baltimore, MD, has an on-ramp connection on Charles Street, directly across from Baltimore Penn Station and off-ramp connection on St. Paul Street two blocks to the south of the station.

In addition to the regional transit connectivity provided by MARC and Amtrak, Baltimore Penn Station connects to the local bus and light rail networks. As shown in Figure 12, the bus routes and light rail line connecting to Baltimore Penn Station provide strong regional connectivity. A light rail spur links Baltimore Penn Station to the MDOT MTA central Light Rail line that extends from Baltimore/Washington Thurgood Marshall International (BWI) Airport to Hunt Valley, MD. Charles and St. Paul Streets are major bus corridors, with five MDOT MTA bus routes, the Charm City Circulator, University of Maryland Shuttle, Collegetown Shuttle, and Johns Hopkins University Shuttle using these arteries. From Baltimore Penn Station, buses extend north to Towson, a university and job center, and south to Curtis Bay, home to a major Port of Baltimore terminal.

Baltimore Penn Station links to Baltimore's existing cycle track network, which provides buffered two-way bicycle routes along several key routes in the city. The Maryland Avenue cycle track is located one block to the west of Baltimore Penn Station and runs north to south from Johns Hopkins University to Downtown Baltimore. The Mount Royal Ave. cycle track is two blocks south of the station and runs along Mount Royal Avenue from Fallsway to North Ave.

Opportunity Zone and Maryland Enterprise Zone

The project area is located entirely within a federally-designated Opportunity Zone and Maryland Enterprise Zone, which has a median household income of \$32,569 per year. This is an attractive Opportunity Zone to investors because of Amtrak's investment in station infrastructure and plans for mixed-use development around the station.

The transformative plans to upgrade Baltimore Penn Station received local opportunity zone investment from Blueprint Local, based in Baltimore City. Blueprint Local invests in entrepreneurs and real estate opportunities in economically distressed areas across the country. These funds unlock Baltimore Penn Station Partners' ability to modernize the station with new retail, restaurants, and office space on an accelerated schedule. The Station redevelopment project brings together public sector partners, private capital through the

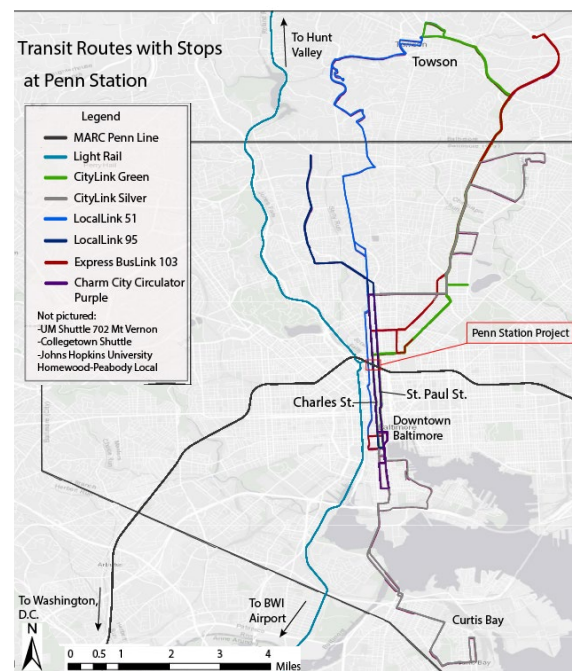


Figure 12: Key transit routes with Baltimore Penn Station connections

Opportunity Zone Program, and community leaders to create positive change in Baltimore. PSP has also cited plans to form a workforce development program and community benefits district for the redevelopment project, as well as affordable housing units and new jobs in the community.

Further, these investments advance the City's goal to foster redevelopment in neighborhoods where investment can most revitalize communities and provide economic opportunities to those who need it most. The Station redevelopment project was also awarded a \$3 million Maryland Historic Revitalization Tax Credit from the Maryland Historic Trust. The Governor has also authorized workforce training and job creation tax credits and property tax breaks as incentives for such opportunity zone investments to leverage these private dollars further.

Relationship to Designated Historic Areas

Several neighborhoods surrounding Baltimore Penn Station are nationally or locally-designated historic districts. The Mount Vernon neighborhood to the south of Baltimore Penn Station is a Local Historic District designated by the Mayor and City Council of Baltimore. A portion of Mount Vernon is both a Local Historic District and a National Register Historic District. The area to the north of Baltimore Penn Station comprises two National Register Historic Districts – "North Central" and "St. Paul Street". Historic properties located within Local Historic Districts are eligible for tax credits through the City of Baltimore, which supports development consistent with the historic context of these neighborhoods.

Relationship to Other Improvements

In addition to the connections to recent transportation investments previously detailed in Project Description, the Project complements other improvements in the area. CBP has collaborated on numerous redevelopment and restoration efforts in the area that together total approximately \$200M. Improving connectivity to and from these residential and cultural redevelopments leverages this previous investment and supports CBP's ongoing work. CBP is also working with PSP on the multi-phased, mixed-use development at the Station to coordinate community involvement and capitalize on the opportunities to create a center with vitality that is a

destination, a proud gateway to Baltimore, and an opportunity for entrepreneurs and young workers. The development is bringing greater investment to an area already positioned for growth; the Project will amplify the impacts of this prior and ongoing private investment.

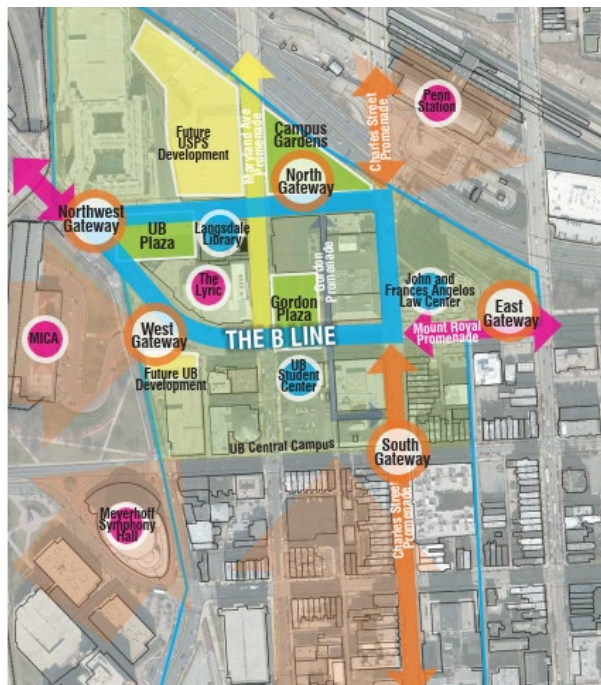


Figure 13. Key Connections and Opportunity Areas (Image Credit: UB)

The University of Baltimore (UB) is developing a Landscape Master Plan. The goals of this plan include enhancing linkages to Light Rail and Baltimore Penn Station, adding green space, and establishing strong linkages throughout the campus. Figure 13 is excerpted from this plan, showing key connections and locations on which the plan focuses. Specifically, the plan proposes improvements on Oliver Street to enhance bicycle and pedestrian connectivity and safety. These improvements will integrate with this Project as a future phase, and the project parties of this BUILD project are committed to working collaboratively with UB to best leverage these funds and investments in the future.

3. Grant Funds, Sources, and Uses of All Project Funding

This application requests \$6.2 million in BUILD grant funds for the Project with a total cost of \$10 million. Non-federal from the State, local, and private sources account for 38 percent of project costs. BUILD funds account for the remaining 62 percent. The table below presents the funding sources and uses.

Category	State	Local		Private	Federal	Total Project Cost
	MD DHCD	BCDOT	CBP	PSP	BUILD	
Transit Priority Treatments	\$1,000,000				\$1,500,000	\$2,500,000
Bus Stop Amenities	\$250,000				\$250,000	\$500,000
Curb Management	\$1,250,000				\$3,250,000	\$4,500,000
Bike/Ped Connectivity and Facilities		\$500,000	\$100,000	\$700,000	1,200,000.00	\$2,500,000
Project Total	\$2,500,000 25%	\$500,000 5%	\$100,000 1%	\$700,000 7%	\$6,200,000 62%	\$10,000,000

Table 3. Funding sources by Project component

Despite continual investment in the Station and surrounding area, constrained City and State resources are barriers to completing the important intermodal connections and improvements in this application. Without this grant, it is not known how many years it will take the State, Local, and Private funding availability to fill the remaining funding gap. During this time, increasing demand at and around Baltimore Penn Station will only exacerbate existing safety and access problems in the Project area.

Project Costs

Spending by Project component is shown in Table 3. A detailed cost estimate for each component is available in the appendices. These cost estimates are based on conceptual design and include reasonable contingency factor appropriate to the scope of each component. Commitments for non-federal match are included in the appendices. There are no associated conditions tied to the funding sources described in Tables 3 and 4.

Project Activity	Transit Priority Treatments (\$)	Bus Stop Amenities (\$)	Curbside Management (\$)	Bike/Ped Connectivity & Facilities (\$)	Project Total (\$)
Land, ROW, Appraisals	\$-	\$-	\$-	\$-	\$-
Architectural, Engineering, & Design	\$300,000	\$50,000	\$500,000	\$300,000	\$1,150,000
Project Inspection Fees	\$200,000	\$50,000	\$400,000	\$300,000	\$950,000
Construction	\$1,800,000	\$350,000	\$3,300,000	\$1,700,000	\$7,150,000
Contingencies	\$200,000	\$50,000	\$300,000	\$200,000	\$750,000
TOTAL	\$2,500,000	\$500,000	\$4,500,000	\$2,500,000	\$10,000,000

Table 4. Costs by Project component

The Project parties understand that cost overruns on any component of the Project will be their responsibility. Further, construction contracts typically are structured to shift the risk of cost overruns to the construction contractor.

BCDOT and MDOT MTA have a long history of project collaboration, with experience coordinating schedules, maintenance of traffic, transit access, and other planning details and milestones that ensure projects are completed on time and within budget.



4. Selection Criteria

The Project provides a strong list of positive impacts and enhancements to safety, SGR, economic competitiveness, environmental sustainability, and quality of life. The Project also applies innovation and partnership to catalyze these important infrastructure investments. The primary benefits from a benefit-cost stand point are generated through safety and economic competitiveness, as summarized in Table 5.

Benefit Categories	Monetized Benefits	Monetized Benefit Description
Safety	Qualitative	Crossing improvements security cameras reduce the number of accidents
Economic Competitiveness	\$11.2 million	Dedicated bus lanes and improved curbside management result in reduced travel time

Table 5. Project Benefits

Safety

The Project will make critical safety improvements for transit riders, drivers, pedestrians and cyclists traveling to and around Baltimore Penn Station. Table 6 shows the safety enhancements this project offers on the surrounding roadway network.

Safety Enhancements of the Building Baltimore Penn Station Connections Project	
Charles St. and St. Paul St.	Lanvale St. and Oliver St.
<ul style="list-style-type: none"> Dedicated bus lanes minimize bus-vehicle conflict Separated pick-up and drop-off lanes minimize bus-vehicle and vehicle-vehicle conflict New crosswalks increase pedestrian crossing safety New striping increases visibility of lane demarcations Pedestrian-scale lighting increases visibility at night Security cameras increase monitoring and timely emergency response 	<ul style="list-style-type: none"> New striping increases visibility of lane demarcations Pedestrian-scale lighting increases visibility at night Security cameras increase monitoring and timely emergency response Curb extensions narrow crossing distances and reduce speeds, improving safety for vulnerable road users

Table 6. Project Safety Enhancements

The high crash rate on these roads is demonstrative of the heavy volumes of vehicles, transit, and pedestrian traffic. The current infrastructure design places these users in conflict with one another. Between 2016 and 2018, 148 crashes occurred on Charles, St. Paul, Oliver and Lanvale Streets within the project limits. Of these crashes, 86 percent were vehicle crashes, 4 percent were crashes involving pedestrians, and 6 percent were bicycle or other “pedalcycle” crashes. Figure 7 shows crashes around Baltimore Penn Station from 2016 to 2018.

The Project’s improvements to bus lanes, intersection markings and signal timing will improve safety on Charles and St. Paul Streets, where over 90 percent of the crashes occurred around Baltimore Penn Station.



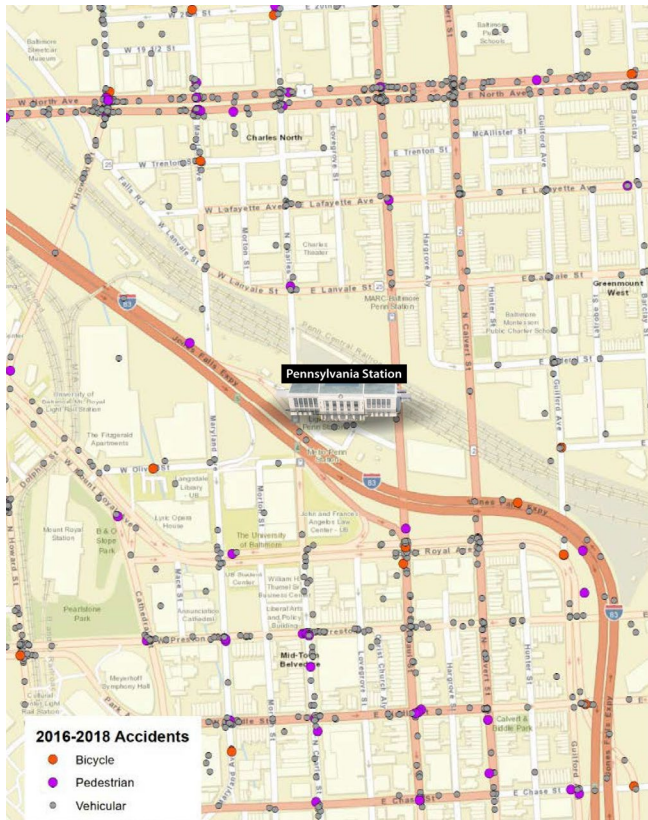


Figure 14: Crashes around Penn Station, 2016-2018

Bus lanes, curb extensions, and clear curb management will reduce conflict between buses and cars and reduce merging into traffic. With the existing shared travel lanes between buses and cars, drivers must merge into a new lane when buses stop to drop passengers off at the bus stop. This merging creates potential for vehicle conflict and is a contributor to vehicular crashes. Instituting dedicated bus lanes on Charles and St. Paul Streets will take buses out of traffic and reduce the interaction between buses and other vehicles, reducing the risk of crashes.

Existing pedestrian crossing infrastructure at the intersections in the project limits is in poor condition and the crosswalks are faded, making it difficult for drivers to see where to stop for pedestrians. The Project's new crosswalk markings at the intersections of Charles/Oliver, Charles/Lanvale, Charles/Lafayette, St. Paul/Lanvale and St. Paul/Lafayette will increase the visibility of these intersections to drivers, reducing the risk of drivers hitting pedestrians crossing the street and improving pedestrian safety.

The sidewalks connecting to the Station are currently poorly lit and have few “eyes on the street” to provide a feeling of safety to pedestrians when it is dark outside. Portions of Charles and St. Paul Streets, for example, have neither pedestrian-scale lighting nor businesses on street level to generate activity, so walking at night feels unsafe. The Project will add pedestrian-scale lighting and security cameras that will mitigate concerns of those who do not currently commute on foot because of safety concerns. The addition of pedestrian-scale lighting will also generate more nighttime activity at the businesses and theaters near the Station, as they will become more visible and safer to access.

State of Good Repair

The Project addresses SGR needs for pedestrian crossings at intersections surrounding the Station, which are currently in poor condition. **If left unimproved, pedestrian safety at these intersections will be compromised.**

The other project components introduce new transportation infrastructure, rather than repairing existing infrastructure. The transportation improvements in this project will be maintained in a state of good repair by BCDOT and MDOT MTA. MDOT MTA maintains all state-owned transit infrastructure, including dedicated bus lanes and bus stops, and Baltimore City DOT maintains all other transportation infrastructure in the public right-of-way. MDOT MTA has memoranda of understanding (MOAs) and franchise agreements with BCDOT for maintaining bus lanes and transit infrastructure. BCDOT and MDOT MTA have experience with collaboratively planning, building, and maintaining grant-funded infrastructure investments, such as the current North Avenue Rising project for which the two agencies are partnered.



Baltimore City DOT is currently developing an asset management program that will put processes in place for maintaining roadways, sidewalks, crosswalks, ADA ramps and other transportation assets in Baltimore City. This program will implement proactive maintenance to keep assets in a state of good repair and reduce overall life-cycle costs. Baltimore City funds maintenance activities through the General Fund.

MDOT MTA's Asset Management Program has asset management plans in place covering transit assets and performs regular maintenance to keep its assets in a state of good repair, including on bus stops and bus stop amenities. While the dedicated bus lanes are within the right-of-way maintained by Baltimore City DOT, MDOT MTA and BCDOT signed a memorandum of understanding (MOU) establishing MDOT MTA's responsibility for maintaining dedicated bus lanes. Through this MOU, MDOT MTA has capital responsibility for these assets and either directly performs maintenance maintains the assets and/or provides funding for BCDOT to address maintenance needs.

MDOT MTA and BCDOT are working with the dedicated bus lanes already installed and those already approved for North Avenue to better understand and anticipate maintenance issues. Some of the initial bus lane segments have had to be repainted due to a combination of factors, but MDOT MTA tested several different products in order to ensure that the second round would last the same amount of time as the underlying pavement.

MDOT MTA is already planning in future budget years for the funding to maintain these facilities and working with other jurisdictions to develop best practices for the maintenance of red bus lanes.

Economic Competitiveness

This project will contribute to increasing the economic competitiveness of the Nation through improvements in the mobility of transit riders at the Baltimore Penn Station and reduced travel time. Based on traffic projections, the total passenger hours traveled (PHT) saved by this project over 30 years is estimated at about 1.6 million PHT, of which 1 million PHT is due to bus ridership, while .0.6 million is due to curb-side pick-up/drop-offs. The travel time savings is calculated to be \$8.5 million.

Additionally, by reducing travel time by over 34,000 PHT per year the Project will also generate operational savings estimated at \$2.7 million.

Regional movement of goods and people

Baltimore Penn Station is the highest-volume transit hub in the Baltimore region and is an essential link in the movement of people throughout the region and locally. Improving the transportation options to Baltimore Penn Station provides access to MARC, Amtrak and Acela, which unlocks access to jobs and other destinations along the entire East Coast.

By improving multimodal access to Baltimore Penn Station, the Project's transportation improvements will **reduce the burden of commuting to key destinations between Baltimore and key employment centers in the region and Washington, DC**. Longitudinal Employer-Household Dynamic (LEHD) data show that 3,230 Baltimore City residents worked in Washington, DC in 2017 and another 94,000 Baltimore City residents worked in counties with stops on the MARC Penn Line, including Anne Arundel, Baltimore and Prince George's Counties. In turn, another 2,119 Washington, DC residents commuted to jobs in Baltimore City (Figure 14).



Work Destination Analysis for Baltimore City Residents		
Employment Location (with stop on MARC Penn Line)	Number of Baltimore City Residents	Percentage of Total
Baltimore City, MD	112,396	44.97
Baltimore County, MD	64,600	25.85
Anne Arundel County, MD	21,580	8.64
Prince George's County, MD	7,738	3.10
District of Columbia, DC	3,230	1.29
All other locations	40,369	16.15
Total	249,913	100

Table 7: Longitudinal Employer-Household Dynamics (LEHD) Survey, 2017 - Work Destination Analysis, Baltimore City residents

Today, over 6,800 commuters ride the MARC from Baltimore Penn Station on a daily basis to jobs in the region. The number of MARC commuters is projected to increase to at least 10,000 daily riders by 2040 (Figure 15). **The project's multimodal improvements will increase the ease, efficiency and mode choices of traveling to Baltimore Penn Station to access the existing rail lines to meet current and projected commuter demand.**

MARC Service at Baltimore Penn Station

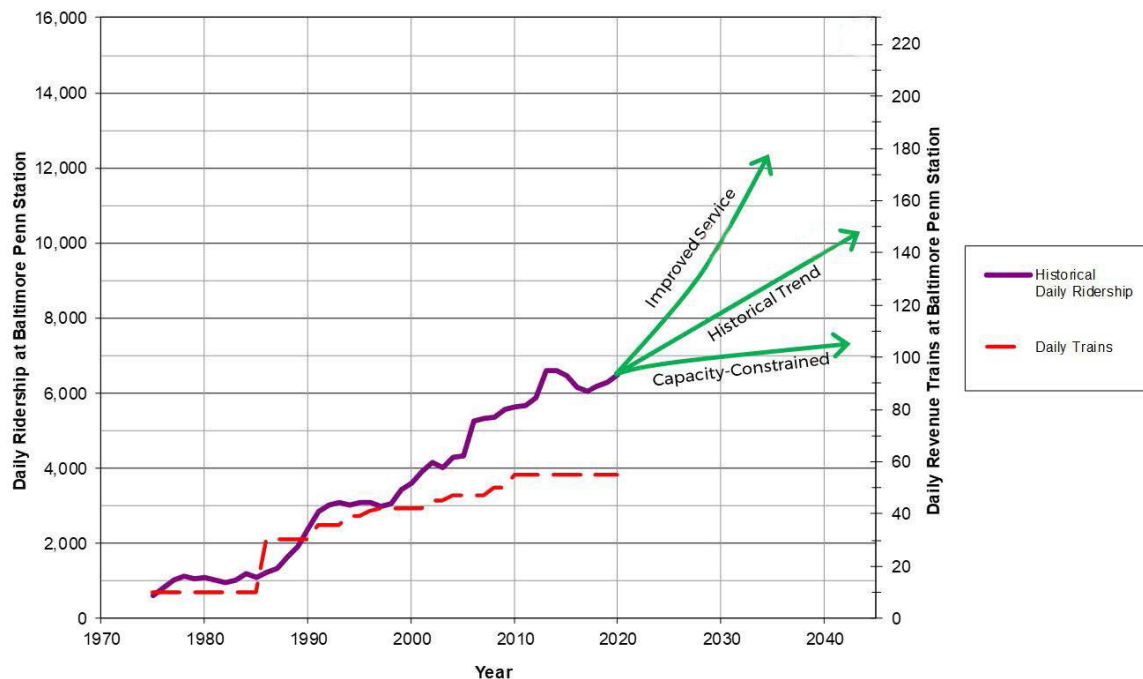


Figure 15: MARC Service at Baltimore Penn Station

Adding to the importance of improving transportation access to Baltimore Penn Station, Amtrak is planning a three-fold increase in train service on the NEC, which is projected to grow ridership from 400 PM peak hour passengers today to 1,200 PM peak passengers by 2040 (Figure 16). This will expand access to destinations for passengers and generate a significant increase in consumer activity in the Station area.



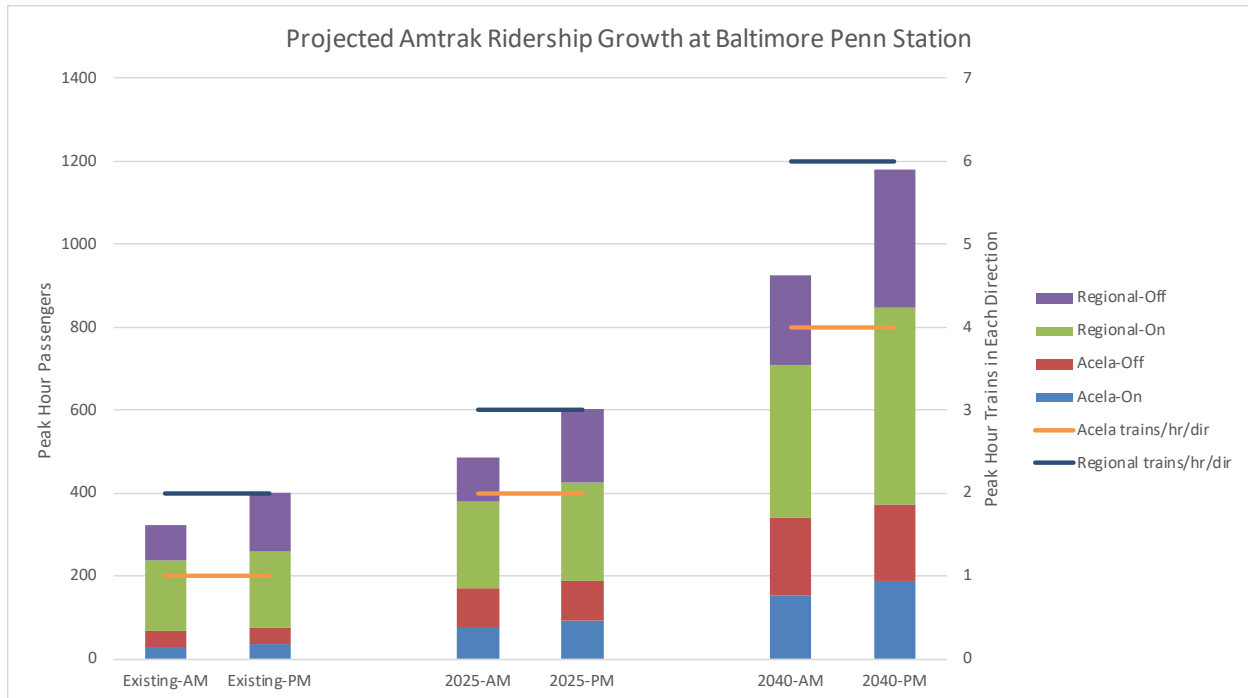


Figure 16: Projected Amtrak Ridership Growth at Baltimore Penn Station

Impact on Local Economy and Movement of People

The Project's investments to improve access to MARC and Amtrak service will significantly improve local transit movement within Baltimore. The five MDOT MTA bus lines that stop at Baltimore Penn Station provide access as far north as Towson in Baltimore County and south to Curtis Bay, stopping at major employment centers along the way. The transit priority improvements introduced in this Project will improve **reliable and timely access to employment centers and job opportunities by saving an average of 1.5 minutes per trip per passenger. Annual travel time savings for all riders on the affected routes would exceed 24,000 hours per year (Table 8).**

Travel Time Savings Generated from Bus Lane on Charles St: Conway to Saratoga, Mulberry to Centre, Madison to North							
Total Bus Lane Miles	Avg. Ridership (7AM-6PM)	Avg. Weekday Buses (7AM-6PM)	Avg. Weekday Ridership/Bus (7AM-6PM)	Daily Travel Time Savings (min.)	Daily Travel Time Savings (hrs.)	Daily Travel Time Savings Per Passenger (hrs.)	Daily Travel Time Savings Per Trip (hrs.)
1.38	3,564	203	18	5,575	92.9	0.03	0.46

Table 8: Bus Lane Travel Time Savings

These time savings would shorten trip time to several major employment centers along the bus routes with stops at Baltimore Penn Station (Table 9).



Employment Center	Role in Regional Economy
Downtown Baltimore	Downtown Baltimore serves as the city's Central Business District and houses Baltimore City Hall, city agencies, state office buildings, non-profit organizations, and private-sector offices.
Johns Hopkins University	Johns Hopkins University is Maryland's largest private employer. The Hopkins Shuttle, Charm City Circulator Purple Line, CityLink Silver and LocalLink 51 run between Baltimore Penn Station and Johns Hopkins' Homewood Campus, which houses the School of Arts and Sciences, Engineering, and Education.
Port of Baltimore	The CityLink Silver Line bus route extends south to the Port of Baltimore at Curtis Bay, where the Maryland Port Administration (MPA) operates a public port with a high volume of vehicle exports.
Hunt Valley, MD	Hunt Valley is a center of industrial facilities, including McCormick & Co., Inc. Global Headquarters, and a large business park with manufacturing, finance, accounting, engineering, to warehouse and distribution enterprises.
Towson, MD	Towson is home to Towson University and a downtown commercial core with office, retail and county government uses.
Regional Employment Hubs	The station's multi-modal hub – enabled by MARC, Light Rail, and CityLink Bus – provides easy connections to regional employment centers, including BWI Airport Business District, Downton Washington, DC, New Carrollton, Odenton/Fort Meade, and Aberdeen Proving Ground.

Table 9: Employment Centers with direct Transit Connections to Baltimore Penn Station

Improvements to Overall Wellbeing

The Project will **improve overall wellbeing** of residents and visitors by providing high-quality connections to active transportation modes and **increasing the number of viable last-mile connections to the station by bike and foot**. These alternative modes offer efficient options to access Baltimore Penn Station, as shown in Table 10.

The Project's safety, security, hardscaping and landscaping improvements to pedestrian infrastructure improve the walking environment and mitigate safety concerns about walking to the Station.

The secure bicycle parking alleviates concerns about the safety of parking a bicycle at the station. Many commuters who are interested in cycling to the station are currently dissuaded from doing so by Baltimore Penn Station's lack of restricted-access bicycle parking to keep their bicycles safe at the station. With the addition of secure bicycle parking at the station, commuters will feel more comfortable storing their bicycles and will be more confident that cycling to the station is a safe and secure option. Cycling is one of the fastest modes of transportation from nearby neighborhoods to the Station, and the improvements to bicycle parking will reduce the commuting time for those who shift from driving to cycling.

“ The Project has strong partnerships between the state, local government, and the Penn Station Partners, as well as strong advocacy support from private employers.”

Jennifer Kaplan, VP Engagement and External Affairs, Greater Washington Partnership



Mode	Travel Time (Off-Peak)	Travel Time (Peak)
Bus	6 to 17 min.	7 to 20 min.
Car	13 min. (8 min. + 5 min. to park & walk to station)	16 min. (11 min. + 5 min. to park & walk to station)
Bicycle	9 min.	9 min.
Walk	30 min.	30 min.

Table 10: Travel time comparison from an origin point 1.5 miles from Baltimore Penn Station

Expansion of Private Economic Development

The Project's improvements to the multimodal infrastructure around the Station will **support and attract private economic development around Baltimore Penn Station**. Attracted by station redevelopment and Opportunity Zone incentives, private developers including PSP are considering several underutilized sites around Baltimore Penn Station and in the surrounding neighborhoods for mixed-use commercial development (office, residential, hotel, etc.). This project's multimodal surface transportation connections to Baltimore Penn Station and the surrounding development sites are critical in securing private economic development and allowing it to succeed.

A 2014 Urban Land Institute (ULI) study, *2014: Shaping the Competitive City*, surveyed 440 top public and real estate leaders from around the world to assess the most important factors in attracting private development¹. The survey found that improving the quality of public transit, roads and bridges, and pedestrian infrastructure is among survey respondents' highest priorities, rising above other factors such as consumer demand, regulations that encourage or discourage development, and tax structure.

The Project's improvements to fast and reliable transit, dedicated curb space for for-hire vehicle pick-up and drop-off, safe sidewalks and crosswalks, well-timed signals and a pleasant pedestrian environment are critical factors in attracting and facilitating private economic development.

Commercial, residential, and office space development on sites around the station generated by Baltimore Penn Station and associated transportation infrastructure development will **result in long-term job creation and other economic opportunities**.

Environmental Sustainability

The Project is fully within existing developed area and will not affect wetlands, waterways or floodplains. The Project will undergo a more comprehensive environmental review as it advances.

Reduction in Stormwater Runoff

Stormwater management is integrated into the new construction elements of this Project. The bus station and auto pick-up and drop-off areas will integrate stormwater management facilities to manage stormwater runoff. The Project includes landscaping on sidewalks and in the plazas, which introduces vegetated, permeable surface to absorb stormwater and reduce strain on the City's wastewater system.

Reduction in Emissions

The transit, pedestrian and bicycle improvements might lead to mode shift from single-occupancy vehicles to these low- to no-emissions modes. With faster bus speeds and shorter bus dwell time, bus-related emissions will decrease.

¹ "Infrastructure 2014: Shaping the Competitive City." Urban Land Institute, 17 Nov. 2014, <https://americas.uli.org/infrastructure-initiative/infrastructure-2014-shaping-the-competitive-city/>.



Quality of Life

Expanding Transportation Choices for Individuals

The Project's multimodal improvements will increase transportation choices for residents of the communities surrounding Baltimore Penn Station, commuters and visitors. The Project will benefit a broad range of people, including:

- **Economically Disadvantaged Residents** - The Project will improve transportation access to employment opportunities for the 26 percent of residents living below the poverty line in the neighborhoods immediately adjacent to Baltimore Penn Station. Over 20 percent residents in these neighborhoods do not own cars, and the improvement of alternative modes of travel will increase mobility and access for these residents.
- **Commuters** - Improvements to transit and last-mile connections will shorten the time it takes to access Baltimore Penn Station from Baltimore neighborhoods and employment centers.
- **Tourists** - Improvements to the safety, efficiency, and aesthetics of the transportation choices around Baltimore Penn Station, in addition to signage and real-time transit information, will make it easier for tourists to travel through Baltimore from Baltimore Penn Station.
- **Patrons of the Arts** - The Project's pedestrian improvements will provide a safer walking environment to the theaters and performance halls within blocks of Baltimore Penn Station.

"The area around Penn Station will see increasing levels of economic growth as station redevelopment advances; the need for safe, fast, and reliable inter-modal connections is critical. CBP and the surrounding communities have worked tirelessly for over a decade to realize the redevelopment and TOD potential of Penn Station, and better connect with the diverse communities of the Station North Arts District and the University of Baltimore and Maryland Institute College of Art campuses."

Ellen Janes, Executive Director, Central Baltimore Partnership

"We need this station to be an economic engine."

The late Congressman Elijah Cummings, Baltimore Sun (Feb. 2016)

Connectivity to Jobs, Healthcare, and Other Critical Destinations

Jobs, healthcare, and social services within ½ mile of bus line connecting to Baltimore Penn Station	Quantity
Jobs	118,307
Colleges/ Universities	12
Public Health Departments	3
Hospitals and Urgent Care Facilities	14
Hospital Beds	1,312
Veteran Services Offices	4
Major Sports Venues	5
Convention Centers	2
Cruise Terminal	1

The Project's transit improvements provide far-reaching connectivity to jobs, healthcare, essential services and other critical destinations across the region. The bus lines connecting directly to Baltimore Penn Station alone provide access to major universities, business parks, industrial areas, hospitals and social services (Table 11).

*Table 11: Quantity of Jobs, Healthcare and Other Critical Destinations Connecting to Baltimore Penn Station
Sources: American Community Survey, 2017; Homeland Infrastructure Foundation-Level Data*



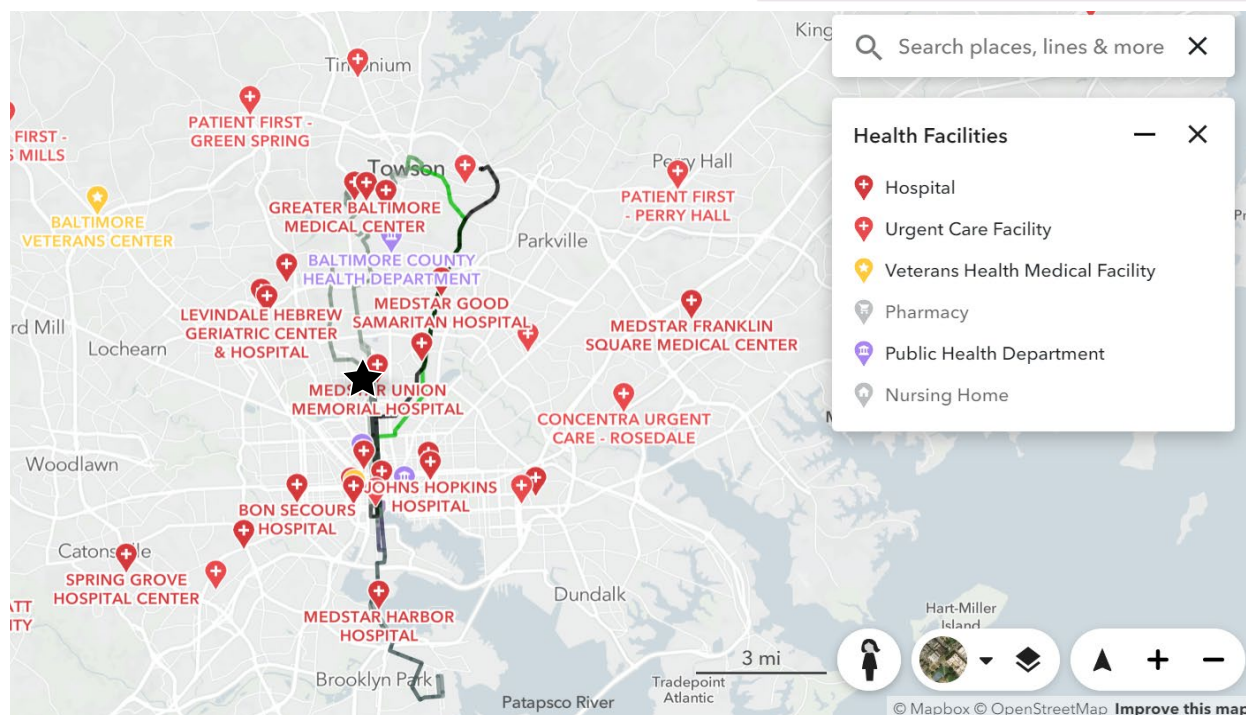


Figure 17: Healthcare facilities in relation to bus routes with stops at Baltimore Penn Station

With the transit travel time savings generated from dedicated bus lanes and off-board fare collection, in combination with the improvement of last-mile connections to Baltimore Penn Station, these destinations will be faster and easier to access. Baltimore City residents also reap benefits from greater access to jobs and activity centers along the rail line within walking distance of MARC stations or accessible via transfer to transit serving these MARC stations. For example “NoMa” and downtown Washington, D.C., are major employment hubs, as are Columbia, Silver Spring, and Bethesda.

The Project’s role in supporting planned development at Baltimore Penn Station and adjacent development sites will also support commercial development, giving residents access to retail, new job opportunities and public spaces.

Innovation

The Project’s transit elements use innovative strategies to increase the speed, reliability and efficiency of the bus routes linking to Baltimore Penn Station. Dedicated lanes, off-board fare collection, and real-time signage are elements of bus rapid transit systems that significantly increase the on-time performance of bus routes and reliability for passengers.

MDOT MTA and Baltimore City DOT have been collaborating to implement a growing number of dedicated bus lanes throughout the city. MDOT MTA recently studied the travel time savings from these investments. Travel time savings ranged from 4.7 percent on Baltimore Street, to 31.7 percent on Hillen Street/Guilford Avenue, with an average benefit of 9.3 percent per corridor. In addition, the data indicates that the bus lanes have also improved safety by reducing the number of bus-involved crashes by nearly 12 percent.

The transit priority treatments on Charles and St. Paul Streets will join a growing network of dedicated bus lanes in Baltimore City. Red paint emphasizes that the lane is for transit only and deters drivers from using the lane, thus reducing the amount of time that buses are slowed by traffic congestion.

PSP, in collaboration with the Downtown Partnership of Baltimore, has committed to installing “IKE Smart City” interactive kiosks as part of this project. These boards, already installed at key locations in downtown Baltimore City, provide information about transportation options, destinations such as restaurants and retail, activities, and services. Specifically, the kiosk are equipped with the following customizable features, which can be programmed remotely:

- Real-time transportation feeds and direction downloads to users’ phones
- Free WiFi and increased cellular coverage
- Two-way communication platform with local police
- Security cameras
- Multi-lingual
- Data analytics (e.g., ped counts and linger times)
- Air quality monitoring
- ADA compliant
- Local/geo-centric content



Figure 18: “IKE Smart City” interactive kiosks

By providing multimodal wayfinding, passengers will be empowered to choose transportation options that work for them with real-time transit information, route schedules, mapping and directions for bus, rail, and bike/car share services.

These interactive kiosks can also be equipped with integrative fare payment options that can provide a single mobile-friendly platform for fare payment across providers. Additionally, the kiosks can integrate with security cameras to provide additional safety and security features for the station area. IKE also improves equity by providing valuable resources to everyone who needs them; it serves as a free WiFi hotspot and improves access to social services for residents in needs, including listings of area shelters, addiction recovery, food assistance, and job listings. The boards will carve out a substantial portion of “live time” on the platform for community programming from community partners, including information about local events, community resources, and neighborhood enterprises. These boards innovatively integrate practical travel and transit information with local resources, celebrating the local character and culture while facilitating efficient, easy mobility.

Downtown Partnership has a master agreement in place with Orange Barrel Media that funds 100% of the installation cost. Revenue sharing on the advertising funds the ongoing maintenance and support associated with these kiosks.

Partnership

This project represents strong partnership between the public and private sectors to achieve a long-awaited transformation. The Project brings together local, state, and private partners that are prepared to work collaboratively to deliver the Project on time and within budget. The following section describes the parties involved in the Project’s funding and/or delivery.

State | MDOT MTA

MDOT MTA is entrusted with guiding the safe, efficient mobility of all those who live, work, and travel in Maryland. As one of the Maryland Department of Transportation’s Transportation Business Units (TBUs), MDOT MTA is guided by MDOT’s mission statement to be a “customer-



driven leader that delivers safe, sustainable, intelligent, and exceptional transportation solutions in order to connect customers to life's opportunities." The agency is one of the largest multimodal transit systems in the United States, operating local, express, and commuter bus service; Light Rail, Metro Subway, MARC, and a comprehensive paratransit (Mobility) system. MDOT MTA also manages the taxi access system and directs funding and statewide assistance to Locally Operated Transit Systems (LOTS) in 26 Maryland jurisdictions.

MDOT MTA has a proven track record for grant oversight and implementation, including TIGER/BUILD grant funding, and therefore will be responsible for grant implementation, including day-to-day management, coordination among project partners, quality control, and project evaluation.

State | DHCD

The Maryland Department of Housing and Community Development implements housing policy that promotes and preserves homeownership and creates innovative community development initiatives to meet the challenges of a growing Maryland. DHCD is committed to strengthening the safe and efficient access to transportation in this important hub, as the agency understands that investments that improve access to jobs, services, and life's opportunities benefit not only those in the immediate area, but all those who travel through this transportation hub. In addition to serving as a key funding partner, DHCD brings a wealth of community knowledge to the Project, which will ensure that these investments integrate seamlessly with other projects and plans in this area.

Local | BCDOT

Baltimore City Department of Transportation will implement roadway, bicycle, and pedestrian components of the Project. With 620,000 residents, the City of Baltimore is the largest city in Maryland and the 30th most populous in the United States. The City has been leading efforts to revitalize the communities surrounding Baltimore Penn Station to support the economic competitiveness of neighborhoods in the broader Mid-town Belvidere, Greenmount West, and Charles North area surrounding the Project Area.

Local | CBP

Formed in 2006, the Central Baltimore Partnership's mission is to galvanize the renaissance of Central Baltimore. CBP pursues its mission by partnering with neighborhood organizations, non-profits, educational institutions, businesses and government agencies. In partnerships with nearby anchor universities (Johns Hopkins University, University of Baltimore, and Maryland Institute College of Art) and Station North Arts and Entertainment District Inc., CBP has procured funds to establish a university transit hub to provide coordinated service for the university shuttle systems. These universities and other affiliates represent over a million annual trips, and the improved pedestrian and vehicular connectivity will enhance mobility for university students and staff, and will be further integrated into the larger transportation network in and around Baltimore Penn Station. Through creative placemaking and public art, these funds will also improve the function of the front plaza as an active gathering space.

Federal | Amtrak

As the national rail operator providing 21,000 route miles in 46 states, Amtrak has identified the redevelopment of Baltimore Penn Station as a critical strategic objective and important project. Through its continued collaboration with the other Project partners, Amtrak's \$90M investment drives, complements, and advances the strategic infrastructure investments in this application.

Private | PSP

Baltimore Penn Station Partners is the Master Developer for the ambitious Baltimore Penn Station redevelopment project, "Next Stop → Baltimore Penn Station." PSP is investing \$450+ million in



the transit oriented commercial development at and around Baltimore Penn Station separate and apart from their \$700,000 match contribution to this BUILD project, which will support installation of bicycle amenities at the Station. Their partnership throughout the design, engineering, and construction of the BUILD project will ensure that the project parties are continually collaborating as these major, important, impactful projects both at and around the Station advance in parallel.

Other Project Supporters and Stakeholders

Building Baltimore Penn Station Connections is supported by a long list of local and state agencies, institutions, organizations, and stakeholders. **Elected officials, state and local agencies, universities, advocacy groups and communities around Baltimore Penn Station support the Project.** This far-ranging support and enthusiasm for the Project and the benefits it will provide are demonstrated by letters of support for the project, which can be found in the appendices.

5. Environmental Risk Review

With a BUILD grant in place, *Building Baltimore Penn Station Connections* is poised to implement access improvements and increase travel time reliability and efficiency for all users of the transportation network in this important location and vital economic area. **MDOT MTA and the other project parties have the technical and financial capacity to undertake this project quickly and meet all milestones: BUILD funding will provide the final missing piece to unlock this project's transformational impacts.**

Project Schedule and Milestones

With BUILD funding completing the funding package, the *Building Baltimore Penn Station Connections* project is ready to advance. The project parties are committed to expeditiously completing design and construction, building upon a strong history of collaboration on projects of similar scope and size.

MDOT MTA will have all necessary pre-construction activities completed by June 1, 2022. All necessary activities will be complete to allow BUILD grant funds to be obligated sufficiently in advance of the September 30, 2022 statutory deadline; any unexpected delays will not put the fund at risk of expiring before they are obligated. Further, there is no real property or right-of-way acquisition necessary for the proposed improvements, and utility relocations will be complete in a timely manner in accordance with 49 CFR part 24, 23 CFR part 710, and other applicable legal agreements.

Milestone	Date
Anticipated Grant Award	10/1/2020
Environmental Approval	2/1/2021
Sign Grant Agreement	4/1/2021
Preliminary Engineering Complete	10/1/2021
Final Design Complete	4/1/2022
Construction Begins	3/1/2023
Substantial Completion	9/1/2024

Upon obligation of BUILD grant funds, this project will begin construction quickly and funds will be spent expeditiously once construction starts, with substantial completion anticipated in September 2024 and all funds expended by September 30, 2027. The Project schedule, shown in Table 12, assumes a BUILD grant award notification in fall 2020 and a signed grant agreement in April 2021.

The Project will be advertised, and construction services procured, under a traditional design-bid-build process, as this will allow the project to be constructed for the lowest possible cost.

Table 12: Project Activity Timeline



Approvals and Permits

State and Local Planning Approvals

If awarded a BUILD grant to enhance multimodal connections to Baltimore Penn Station, MDOT MTA and BCDOT will work closely with the MPO and MDOT to incorporate the Project into local, regional, and state plans expeditiously, as well as to secure the environmental approvals as quickly as is feasible. The Project will be added to all appropriate plans by the end of 2020.

The project team is committed to broad public engagement that reaches the range of stakeholders. The project partners are ready to continue building upon the public involvement taking place during the application process with local communities and neighborhood associations, elected officials, local and state agencies, major institutions, stakeholder organizations, and the business community. While the COVID-19 Pandemic demands a new level of flexibility, the project parties have already demonstrated their nimble ability to still reach stakeholders and the public using new methods for other current projects that are currently underway.

Required Approvals and Permits

The project parties are seeking a Categorical Exclusion for minor impacts, with an expected approval date of February 2021. The project is expected to reach 30 percent design in October 2021 and Final Design completion by June 2022.

Environmental Risk

NEPA Status

MDOT MTA has already begun investigating the potential for environmental impacts from this project and expects them to be minimal. The project is expected to qualify for a Categorical Exclusion. There are no known federally-listed rare, threatened or endangered species (U.S. Fish and Wildlife Service (FWS) Letter included in the Appendices). The MDOT MTA does not anticipate there will be any state-listed rare, threatened or endangered species because of the urban nature of the project location and has contacted the Maryland Department of Natural Resources to confirm this (Letter to the Maryland Department of Natural Resources (DNR) included in the Appendices).

There are many National Register listed or eligible properties in the project area. MDOT MTA has identified a preliminary area of potential effects (APE) and historic properties in the APE. MHT agreed with the APE, agreed with the known historic properties in the APE and agreed that there is little potential to affect archaeological resources (Letter from the MHT included in Appendices).

Given the limited amounts of ground disturbance, MDOT MTA does not anticipate receiving a NEPA determination that will impede the construction of the project. Upon notification of the grant award, MDOT MTA will work with our federal partners to complete the NEPA process.

Technical Feasibility

MDOT MTA and BCDOT have a strong track record of collaboratively working on projects of similar magnitude to this project, as well as projects that involve federal and USDOT grant funding. Understanding the symbiotic relationship between the State's transit system and the local roadways, sidewalks, and bike facilities upon which transit patrons depend, MDOT MTA and BCDOT have established several mechanisms to ensure this work is completed in a coordinated manner.

MDOT MTA and BCDOT have worked closely over the last several years on several projects, most notably the North Avenue Rising TIGER project, which is currently in construction, with a scheduled completion in 2021. Additionally, when MDOT MTA implemented a complete bus



network redesign in 2018, a key piece was the implementation of dedicated bus lanes. These and other projects demonstrate that agency staff are now well familiar with how to coordinate efforts throughout all phases of project development, planning, environmental documentation, permitting, design, and construction.

Senior agency staff meet monthly, with frequent project-specific coordination meetings with staff from all levels of the two agencies. For example, the multi-agency Curbspace Management Work Group meets weekly to discuss transit priority treatments (e.g., dedicated bus lanes) on a corridor-by-corridor basis. For North Avenue Rising, a BCDOT inspector is working side-by-side with MDOT MTA construction management staff in the field to ensure that work is done to City and State standards. This past experience reduces the potential for unexpected delays at all phases of the Project.

Financial Capacity

All of the partners in this team have the financial capacity and funding available to complete this project as proposed. Previous experience partnering on projects both in Baltimore City prepare these agencies and organizations to execute the Project efficiently and effectively, as they advance the investments through secure financial support form both the state and local level.

Risk and Mitigation Strategies

The following table presents the primary risks for the Project, the potential impacts these risks may present, and mitigations strategies identified for each by the project team.

RISK	IMPACT	MITIGATION STRATEGY
Procurement Delays	Limited	MDOT MTA regularly procures construction projects of a substantial nature and this project would not pose a significant challenge. Procurements of this size require approval by Maryland's Board of Public Works, but that would not be a challenge for a collaborative project with mutual benefits such as this.
Environmental Uncertainties	None	This Project's Limit of Disturbance is entirely located within a dense urban area with little to no natural habitat. The project work will all be done on areas that are currently impervious surface and should not pose any environmental risks.
Real Estate Acquisition Cost Changes	None	All of the work will be done on property owned by the Project partners (Amtrak and BCDOT) and there is no real estate acquisition needed for the Project.
Uncommitted Local Match	Limited	BCDOT has committed \$500,000 towards lighting and landscaping work in the blocks between Baltimore Penn Station and North Avenue and these are being drawn from funds already committed toward those uses.
Legislative Approval	None	No legislative approval is needed to move forward with the Project itself, although it is possible that some action by the Baltimore City Council would be taken to implement on-street parking changes associated with the Project.
COVID-19	Uncertain	To date, COVID-19 has not impacted the development of the grant application or the ongoing construction work for the North Avenue Rising TIGER project. It is possible that future developments could have an impact on the Project schedule, but that situation should be clearer by the time when the parties would be working on a grant agreement.
Historic Preservation	Limited	The Project takes place around a number of historic neighborhoods and a historic train station, but none of the work anticipated as a part of this project will impact the historic structures themselves and they should not impact the character of the community in a way that would impact the Project timeline.

Table 13: Project Risk and Mitigation Strategies



6. Benefit Cost Analysis

A benefit-cost analysis (BCA) was conducted for the Building Baltimore Penn Station Connections by the Maryland Department of Transportation Maryland Transit Administration (MDOT MTA) for submission to the U.S. Department of Transportation (U.S. DOT) as a requirement of a discretionary grant application for the BUILD 2020 program. The analysis was conducted in accordance with the benefit-cost methodology as outlined by U.S. DOT in the 2020 Benefit-Cost Analysis Guidance for Discretionary Grant Programs. The period of analysis corresponds to 30 years after operations begin in 2024.

The capital cost for this Project is expected to be \$10 Million in undiscounted 2018 dollars. Discounted at 7%, the present value of capital costs is \$8.1 Million. The Project is expected to generate \$11.6 Million discounted benefits using a 7 percent discount rate. The primary benefits are about \$8.5 Million in travel time savings, and about \$2.7 Million due reduced MDOT MTA operating costs. This leads to an overall project Net Present Value of \$3.5 Million and a Benefit Cost Ratio (BCR) of 1.43.

Type of Benefit	Benefit	Monetized Value (with 7% Discount Rate)
Travel Time Savings	Dedicated bus lane and improved curbside management leads to lower travel time	\$8.5
Reduced Transit Operating Costs	Reduced delays save transit operating costs	\$2.7
Residual Value of Assets		\$0.4
Total Benefits		\$11.6
Total Capital Costs		\$10
Benefit-Cost Ratio		\$1.43

Table 14: Project Impacts and Benefits Summary, Monetary Values in Millions of Discounted 2018 Dollars



List of Appendices

All appendices are housed on the MDOT website and can be access at the URL below:

www.mdot.maryland.gov/BUILD.

Appendix 1. Benefit-Cost Analysis Report

Appendix 2. Letters of Financial Commitment

Appendix 3. Letters of Support

Appendix 4. Environmental Documentation



