

# ***Building Baltimore Penn Station Connections***

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

*FY22 RAISE APPLICATION*



# Table of Contents

---

## 1. Project Description - 1

---

- Project Components - 2*
- Project Need - 3*
- Project History - 6*
- Relationship to Other Transportation Investments - 8*

---

## 2. Project Location - 10

---

- Significance of Project Location - 10*
- Federal Equity Designation - 12*
- Opportunity Zone and Maryland Enterprise Zone - 12*
- Relationship to Designated Historic Areas - 13*
- Relationships to Other Improvements - 13*

---

## 3. Grant Funds, Sources, and Uses of All Project Funding - 13

---

- Grant Funds, Sources, and Uses of All Project Funding - 13*
- Project Costs - 14*

---

## 4. Selection Criteria - 15

---

- Safety - 15*
- Environmental Sustainability - 17*
- Quality of Life - 18*
- Improves Mobility and Community Connectivity - 20*
- Economic Competitiveness & Opportunity - 21*
- State of Good Repair - 24*
- Partnership & Collaboration - 25*
- Innovation - 26*

---

## 5. Project Readiness & Environmental Risk - 27

---

- Technical Feasibility - 28*
- Financial Completeness - 28*
- Environmental Risk - 28*
- Project Schedule - 29*
- Required Approvals and Permits - 29*
- Risk and Mitigation Strategies - 29*

---

## 6. Benefit Cost Analysis - 30

---

- Appendix 1. Benefit-Cost Analysis Report*
- Appendix 2. Letters of Financial Commitment*
- Appendix 3. Letters of Support*
- Appendix 4. Environmental Documentation*

## 1. Project Description

The Maryland Department of Transportation Maryland Transit Administration (MDOT MTA), in collaboration 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 (PSP), requests \$6 million in RAISE grant funds for *Building Baltimore Penn Station Connections* Project (the Project). The requested funds will complete the funding package for a \$12 million project that improves 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 and provide catalytic impacts to Historically Disadvantaged Communities and Areas of Persistent Poverty, increasing private investment, population, and job opportunities.

**Baltimore Penn Station (the “Station”) is the heart of transportation 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 local 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. 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 achieve the intended goals, MDOT MTA, DHCD, Amtrak, PSP, CBP, and BCDOT are jointly committed to cooperatively planning and implementing infrastructure investments to strengthen this area and support the region’s growth and connectivity. 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 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 RAISE grant award will ensure local and state project partners fully leverage this private investment and job creation opportunity.

### ***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 for users of all abilities and communities.*
- *Providing 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.*



### 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 on Charles Street 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, ticket vending machines, and public art.
- 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 maximize accessibility to the Station
  - 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 Street and St. Paul Street between Baltimore Penn Station and North Ave.
  - Streetscaping and landscaping focused along Charles Street and St. Paul Street adjacent to the station, including improved wayfinding, lighting, and security cameras
  - Replacement of bridge railings to improve porosity of the pedestrian corridors and sightlines
  - Innovative, interactive information kiosks providing real time multimodal travel options, events programming, services and resources, and retail service options
  - Secure bicycle and micromobility parking facilities 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. The COVID-19 pandemic has caused a temporary reduction in all travel, but ridership and traffic levels are continuing to increase. For the purposes of analysis, this application uses pre-pandemic (2019) ridership data. 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.

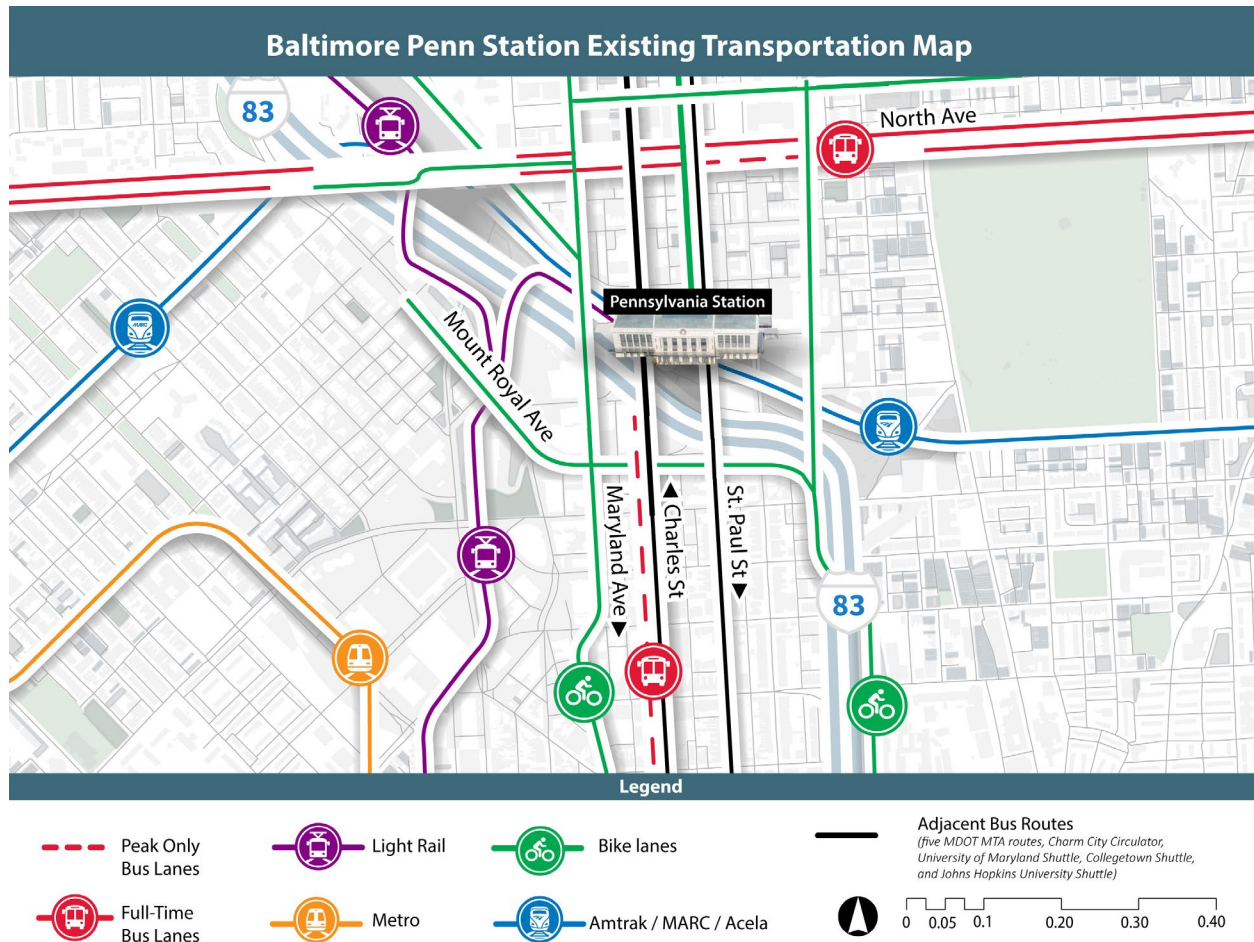


Figure 2. Transit Network Connections Around Baltimore Penn Station

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

**Transit**

Charles St. and St. Paul St. are two of the highest-volume bus corridors 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. And St. Paul St. have buses arriving about every 2 minutes.

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

- Buses share lanes with vehicular traffic and need to pull over to the curb to pick up passengers on much of Charles and St. Paul Streets, causing buses to experience delays due to vehicular congestion. Operating in mixed traffic 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 are some segments of peak-hour bus lanes on Charles Street, they haven't been adequate to address these issues.
- Although 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.
- 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 full-time dedicated bus lanes to Charles Street, curb extensions at bus stops along Charles Street and St. Paul Street, and real-time bus information to the bus stop outside of Baltimore Penn Station. This will improve bus reliability, reduce conflict between buses and vehicles, improve passenger safety and information, 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 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

**Bus Station – Charles Street**

Charles Street at Penn Station Bus Stop Facing South

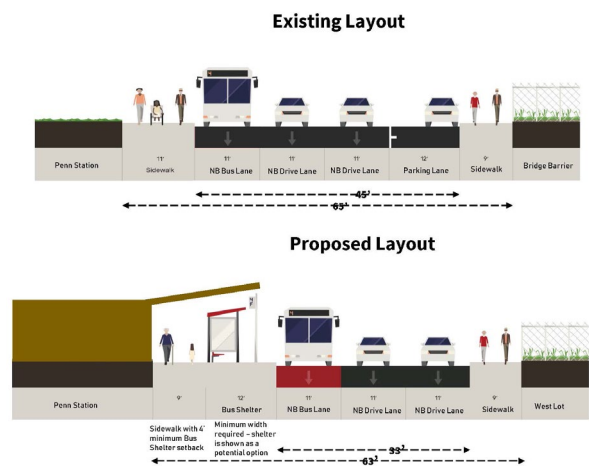


Figure 3. Cross-section of Charles St.





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

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. 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 active transportation corridor for the City. Oliver Street provides access to cultural centers, including museums and concert halls; the University of Baltimore; and the regional Light Rail.

### **Bicycle Infrastructure**

The bicycle network surrounding the Station includes two buffered, two-way cycletracks that provide safe bicycle and scooter connections to Baltimore Penn Station from Johns Hopkins University to Downtown Baltimore. These cycletracks were built in the past several years and provide well-connected, safe bicycle and scooter connections along major roadways running north-south and east-west. The investments in bicycle infrastructure in Baltimore City are complimented by growing use of other micromobility, including personally owned small vehicles and dockless e-scooters and e-bikes for rent. With an average of 120,000 trips per month since 2019, the dockless vehicle program has over 50 times the ridership of the former Baltimore Bike Share. Vehicles are deployed daily to transit stations and during the COVID-19 pandemic transit stations were some of the only areas to witness increased ridership on the e-scooters and e-bikes. This low-emission mode of transportation gives further utility to bicycle infrastructure and broadens access to communities where personal motor vehicle ownership is low.

Although some robust bicycle infrastructure has been installed on major roadways, 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 increase the returns on enhancements of bike and scooter connectivity to other parts of the City. By helping close the gaps with nearby bicycle and scooter infrastructure, the Project improves access for low-income residents without access to a car 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, wheels, and full bicycles.



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, utilizing 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.

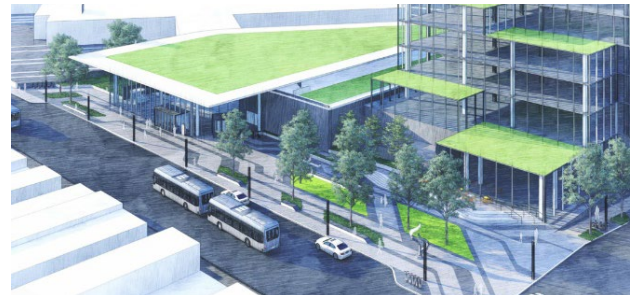


*Figure 6. TNCs frequently block bus stops, impacting travel time*

### **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 Street in a single lane designated as a cab stand, or in the pick-up/drop-off loop immediately in front of the Station. The concourse expansion and planned increase in Amtrak service correlates with a projected increase in passenger traffic of 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).

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 state of good repair 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, DHCD, and the City of Baltimore have continually invested in Baltimore Penn Station to address infrastructure and state of good repair 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, DHCD, 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 over \$440 million. 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
- **City Arts II Apartments** – 60-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
- **9 E Mt. Royal Apartments** – 65-unit apartment building
- **Guilford Hall Brewery** – 16,000 SF brewery and taphouse

*“ 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 \$550M 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 funding to produce greater benefits for the local, state, and regional stakeholders 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.

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 increase in ridership in Amtrak and MARC ridership by 2025. Prior to COVID-19, Amtrak daily trips through the Station were 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 following the pre-COVID-19 historical trend (Figure 15).

### ***Station Mixed-Use Development***

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 create a shared prosperity.

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, DHCD, 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.

### ***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.

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 connect these two dedicated bus lane corridors (Charles St. and North Ave.) increases the benefits of each beyond the sum of their parts. This RAISE application includes strategic integration with the North Avenue Rising project, using pedestrian improvements to create safer transfer opportunities and transit priority treatments that compliment the dedicated bus lanes on North Avenue.

### ***B&P Tunnel Replacement Program***

The Baltimore & Potomac (B&P) Tunnel is a 1.4-mile long rail tunnel located along the NEC between Penn Station and West Baltimore MARC Station. Nearly 150-years old, the B&P tunnel is the oldest Amtrak tunnel and serves 9 million passengers annually. This segment of track is also the largest rail bottleneck between Washington and New Jersey, with more than 10% of weekday Amtrak trains experiencing delays.

Amtrak is currently performing final design and initiating property acquisition for the B&P Tunnel Replacement Program, which includes two new high-capacity tubes for electrified passenger trains, new roadway and railroad bridges, new rail systems and track, and a new ADA-accessible West Baltimore MARC station. When complete, the B&P Tunnel Replacement Program will increase service reliability, triple capacity, and allow trains to travel over 100 mph. A new B&P Tunnel directly compliments the Project's investments in increased accessibility to Baltimore Penn Station.

### ***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 connection through the middle of the city, with a bicycle route from Johns Hopkins University Homewood Campus to Downtown Baltimore. In the Fall of 2018, afternoon peak ridership (4-6pm) during the week averaged 166 riders. 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 network of protected facilities for bicycles and scooters will continue to expand around Baltimore Penn Station, as Baltimore City DOT is implementing a segment of cycletrack to connect Maryland Avenue with the North Avenue Light Rail Station and Mt. Royal Avenue. Baltimore City is also exploring extending the Mount Royal cycle track north to reach North Avenue. The two existing cycletracks provide safe bicycle and scooter 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 and people riding scooters along these key corridors.



## 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.



Figure 10. Project location

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 has undergone recent 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.

### 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 located along the NEC. Positioning Penn Station to serve as a catalyst rather than a bottleneck preserves and advances the American economy.

Further, it is a significant gateway to Baltimore City, providing an historic landmark and cultural destination.

**“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)*

Baltimore Penn Station is located between the historic Mount Vernon and Charles 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.



## Pennsylvania Station Surrounding Neighborhoods and Notable Locations



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 (within 1/2 mile of Station)				
% 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

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



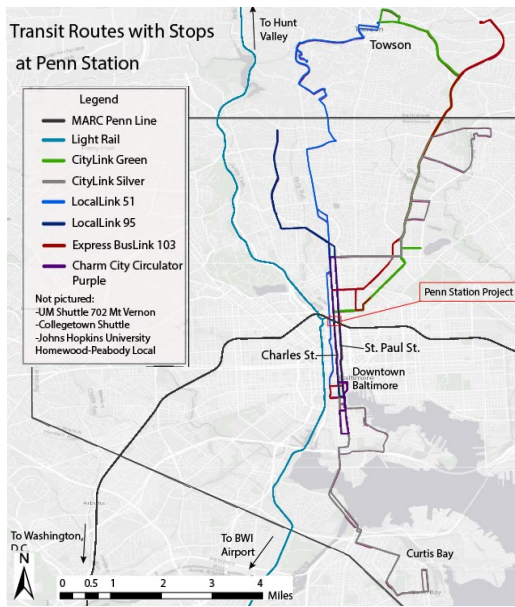


Figure 12: Key transit routes with Baltimore Penn Station connections

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.

As previously mentioned, 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. A third cycletrack is being installed near Penn Station connecting Maryland Avenue to the North Avenue Light Rail Station and Mt. Royal Avenue.

**Federal Equity Designation**

Penn Station and the majority of the project elements are located in census tract 1205, which is designated as an Area of Persistent Poverty and an Historically Disadvantaged Community (Figure 13). The station area qualifies as an Historically Disadvantaged Community through disadvantage in the Transportation Access, Environmental, Economic, and Social disadvantage indicator categories. Some project elements extend south from the station area into census tracts 1102 and 1101, which are designated as an Area of Persistent Poverty, but only meet three of the required 4 indicators of Historically Disadvantaged Community Designation.

The disadvantage and persistent poverty in the Project area highlighted by the USDOT indicators are contrasted by the great potential of the transportation investments and development commitment in the Project area. Consistent with the goals of the Justice40 Initiative, *Building Penn Station Connections* represents an opportunity to address an area of greatest need with impactful investments that are aimed to overcome disadvantage, connect people to economic opportunity, and rewrite the future of these communities as areas in prosperity.

**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

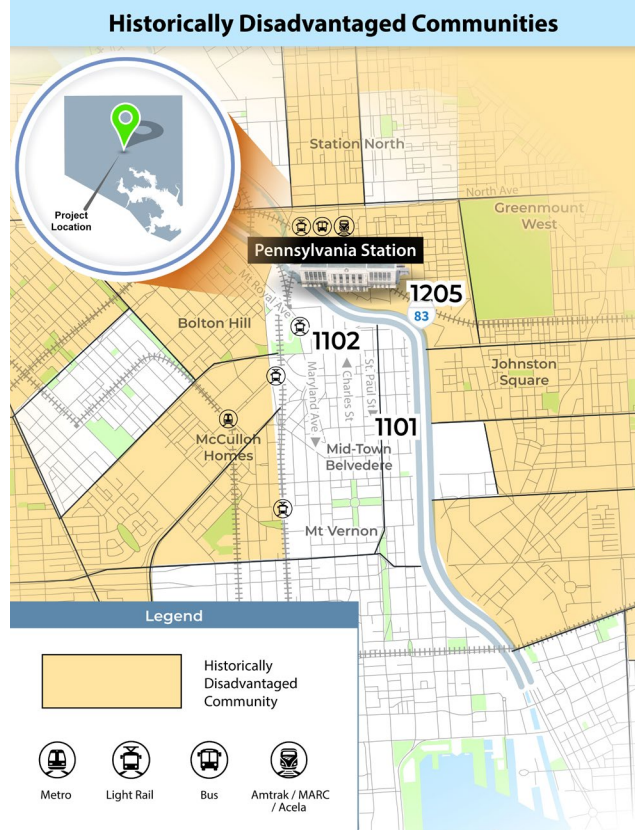


Figure 13 - Historically Disadvantaged Communities



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 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.

### ***Relationships 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. Central Baltimore Partnership 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. Complimenting this private investment to the project area is over \$81 million in public investment from DHCD. The development is bringing greater investment to an area already positioned for growth; the Project will amplify the impacts of this prior and ongoing investment.

## ***3. Grant Funds, Sources And Uses Of Project Funds***

### ***Grant Funds, Sources, and Uses of All Project Funding***

This application requests \$6 million in RAISE grant funds for the Project with a total cost of \$12 million. Non-federal funds from the State and private sources account for 20 percent of project costs. Other federal funds from the Congressionally Designated Project, or Earmark, process



include \$3.6 million, while RAISE funds account for the remaining 50 percent. The table below presents the funding sources and uses.

Category	Non-Federal		Other Federal (Earmark)	RAISE	Total Cost
	MDOT MTA	Local Partners			
Transit Priority Treatments	400,000		900,000	1,300,000	2,600,000
Bus Stop Amenities	500,000		875,000	1,375,000	2,750,000
Curbside Management	200,000		525,000	725,000	1,450,000
Bicycle & PED Connectivity	300,000	1,000,000	1,300,000	2,600,000	5,200,000
<b>Project Total</b>	<b>1,400,000</b>	<b>1,000,000</b>	<b>3,600,000</b>	<b>6,000,000</b>	<b>12,000,000</b>
	12%	8%	30%	50%	

*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. These cost estimates are based on conceptual design and include a 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 Mgmt. (\$)	Bike/Ped Connectivity & Facilities (\$)	Project Total (\$)
Land, ROW, Appraisals	-	-	-	-	-
Architectural, Engineering, & Design	\$325,000	\$250,000	\$110,000	\$500,000	\$1,185,000
Project Inspection Fees	\$25,000	\$25,000	\$15,000	\$50,000	\$115,000
Construction	\$2,000,000	\$2,200,000	\$1,200,000	\$4,125,000	\$9,525,000
Contingencies	\$250,000	\$275,000	\$125,000	\$525,000	\$1,175,000
<b>TOTAL</b>	<b>\$2,600,000</b>	<b>\$2,750,000</b>	<b>\$1,450,000</b>	<b>\$5,200,000</b>	<b>\$12,000,000</b>

*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. This collaboration has strengthened through recent projects including the North Avenue TIGER project, the Central Maryland Regional Transit Plan, and the recent successful RAISE application for the East/West Priority Corridor. BCDOT has collaborated more broadly with MDOT for the TIGER-funded Hanover Street Bridge Multimodal Corridor Plan and support of MDOT’s Transit-Oriented Development efforts.





## 4. Selection Criteria

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

Benefit Categories	Monetized Benefits	Monetized Benefit Description
Economic Competitiveness	\$8.6 million	Dedicated bus lanes and improved curbside management result in reduced travel time
Quality of Life	\$1.0 million	New transit amenities in the form of bus stop improvements improve passenger experience

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"> <li>Dedicated bus lanes (Charles Street only) and curb extensions minimize bus-vehicle conflict</li> </ul>	<ul style="list-style-type: none"> <li>New striping increases visibility of lane demarcations</li> </ul>
<ul style="list-style-type: none"> <li>Separated pick-up and drop-off lanes minimize bus-vehicle and vehicle-vehicle conflict</li> </ul>	<ul style="list-style-type: none"> <li>Pedestrian-scale lighting increases visibility at night</li> </ul>
<ul style="list-style-type: none"> <li>New crosswalks and ADA Improvements increase pedestrian crossing safety.</li> </ul>	<ul style="list-style-type: none"> <li>Security cameras increase monitoring and timely emergency response</li> </ul>
<ul style="list-style-type: none"> <li>New striping increases visibility of lane demarcations</li> </ul>	<ul style="list-style-type: none"> <li>Curb extensions narrow crossing distances and reduce speeds, improving safety for vulnerable road users</li> </ul>
<ul style="list-style-type: none"> <li>Pedestrian-scale lighting increases visibility at night</li> </ul>	<ul style="list-style-type: none"> <li>ADA Improvements</li> </ul>
<ul style="list-style-type: none"> <li>Security cameras increase monitoring and timely emergency response</li> </ul>	

Table 6: Safety Enhancements of the Building Baltimore Penn Station Connections Project.

### Improving Safety Outcomes and Reducing Transportation-Related Incidents

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 14 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.



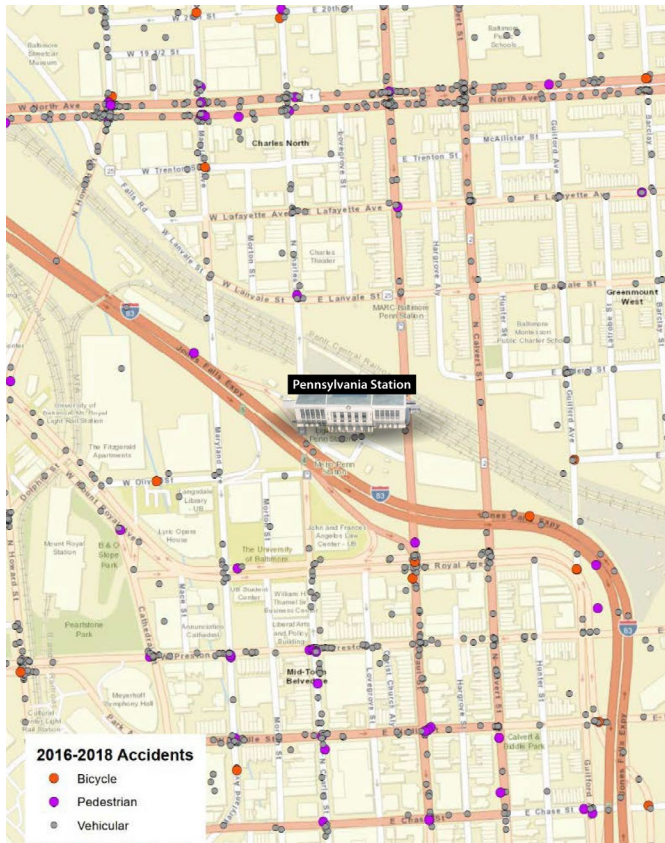


Figure 14: Crashes around Penn Station, 2016-2018

**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, bus 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 Street will take buses out of traffic and reduce the interaction between buses and other vehicles, reducing the risk of crashes.

**Fostering a Safe Transportation System for the Movement of Goods and People and Protecting Vulnerable Roadway Users**

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.

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.

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.



## ***Environmental Sustainability***

### ***Reduction in Emissions through Mode Shift***

Consistent with the strategies in Scenario 2 of the MDOT Greenhouse Gas Reduction Act Plan (2020), the Project uses transit priority, pedestrian and bicycle improvements to inspire mode shift from single-occupancy vehicles to low- and no-emissions modes. While the transportation investments can support non-automobile travel within the Baltimore Metropolitan area, the Project's increased access to Penn Station may impact mode choice in regional travel, including the highly traveled Baltimore-Washington corridor. While mode shift away from automobile travel reduces emissions, the faster bus speeds and shorter bus dwell times resulting from the Transportation Demand Management strategies like dedicated bus lanes and curb extensions at bus stops will reduce bus-related emissions for existing service.

### **DP3 Status Report (2021)**

#### **Strategy 8, Action 5:**

*Make available a network of dedicated pedestrian and bicycle transportation routes leading into and throughout the City.*

### ***Fiscally Responsible Land Use***

*Building Penn Station Connections* directly supports transit-oriented development (TOD) that capitalizes on supportive zoning, including an existing TOD Designation. High-density mixed-use development is reliant on the presence of robust walking, biking, and transit infrastructure. In tandem with Baltimore Penn Station Partners' \$450+ million mixed-use development, the type of transportation infrastructure investments included in the Project will catalyze further high-density and mixed use in-fill redevelopment within the station area. As infill development, these increases in density will leverage existing public infrastructure and municipal services, avoiding the use of further public resources.

### ***Stormwater Management & Resilience***

The Project is fully within existing developed area and will not affect wetlands, waterways or floodplains. 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.

As storm intensities increase, the frequency of major rain events underlines the need for a resilient transportation network. As noted in Baltimore City's Disaster Preparedness and Planning Project (DP3), pedestrian and bicycle infrastructure is a key component of a resilient network. This need is more acute within the project area, as the Jones Falls is subject to storm-induced flooding that can impact travel along key roadways including Interstate 83. According to the most recent update to DP3 (2018), 20 percent of roadways in the City seeing repetitive flooding are along the Jones Falls. The Jones Falls Trail offers an active transportation alternative for this key corridor into the city, and the Project more safely integrates this facility with the regional transit system at Penn Station.

### ***Explore the Use of Recycled Materials***

MDOT MTA will evaluate the potential to use recycled material in the project's design phase, building upon North Avenue Rising's use of alternative asphalts and aligning with Maryland's 2017 Waste Reduction and Resource Recovery Maryland Executive Order. The Project team will be able to draw on expertise from MDOT's Interagency Sustainability Materials Management Working Group, that includes participation from Maryland State Highway Administration, to identify opportunities to use recycled materials in the Project.

### ***Environmental Justice***

Because the Project centers on transit, pedestrian, and bicycle investments within existing right-of-way, it is not anticipated to generate adverse health or environmental effects for Environmental



Justice (EJ) communities; rather, the Project will expand multi-modal transportation safety and accessibility to contribute to a shift away from single-occupancy vehicles. MDOT MTA performed an EJ Screening analysis on the Project to identify impacted communities and inform locations for project outreach to ensure equal access and involvement in design and construction decision-making processes. The EJ Screen analysis on the Project area shows that the area within a half-mile of Penn Station is in the 85-90th percentile of the region for the traffic proximity indicator, confirming that the Project advances MDOT MTA’s equity goals by benefiting communities of color and low-income populations.

**Planning and Policy**

MDOT MTA and BCDOT are committed to increasing environmental sustainability, confront climate change, and advance environmental justice. In 2018, MDOT MTA created its first agency-wide Sustainability Plan, which applies a decision-making model that allows the agency to balance the needs of people, planet, and prosperity while driving down MDOT MTA’s financial, ecological, and social costs. The ongoing MDOT MTA Sustainability Program measures and monitors key performance indicators at both the agency and in the region and is increasingly integrated into projects from the development stage forward. MDOT MTA recognizes that transit is a tool to alleviate congestion, improve air quality, and strengthen communities.

Baltimore City is active in its role of confronting and mitigating impacts on communities and the environment. The Baltimore City Office of Sustainability adopted a Sustainability Plan in 2019 to guide its project development and investments. One of this plan’s primary goals is to shift to reliable, accessible public transit connected to the region. BCDOT is also in the process of adopting the City’s first Highway Safety Plan which emphasizes the need to create more complete streets with safety improvements for the most vulnerable road users. *Building Penn Station Connections’* bicycle and pedestrian infrastructure, dedicated bus lanes, and other transit priority improvements will advance the goals of both plans

**Quality of Life**

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 7.

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

**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 and visit adjacent attractions including the Charles Street National Scenic Byway and East Coast Greenway.
- **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.

**Connectivity to Jobs, Healthcare, and Other Critical Destinations**

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 8).

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

Table 8: Quantity of Jobs, Healthcare and Other Critical Destinations Connecting to Baltimore Penn Station  
 Sources: American Community Survey, 2017; Homeland Infrastructure Foundation-Level Data

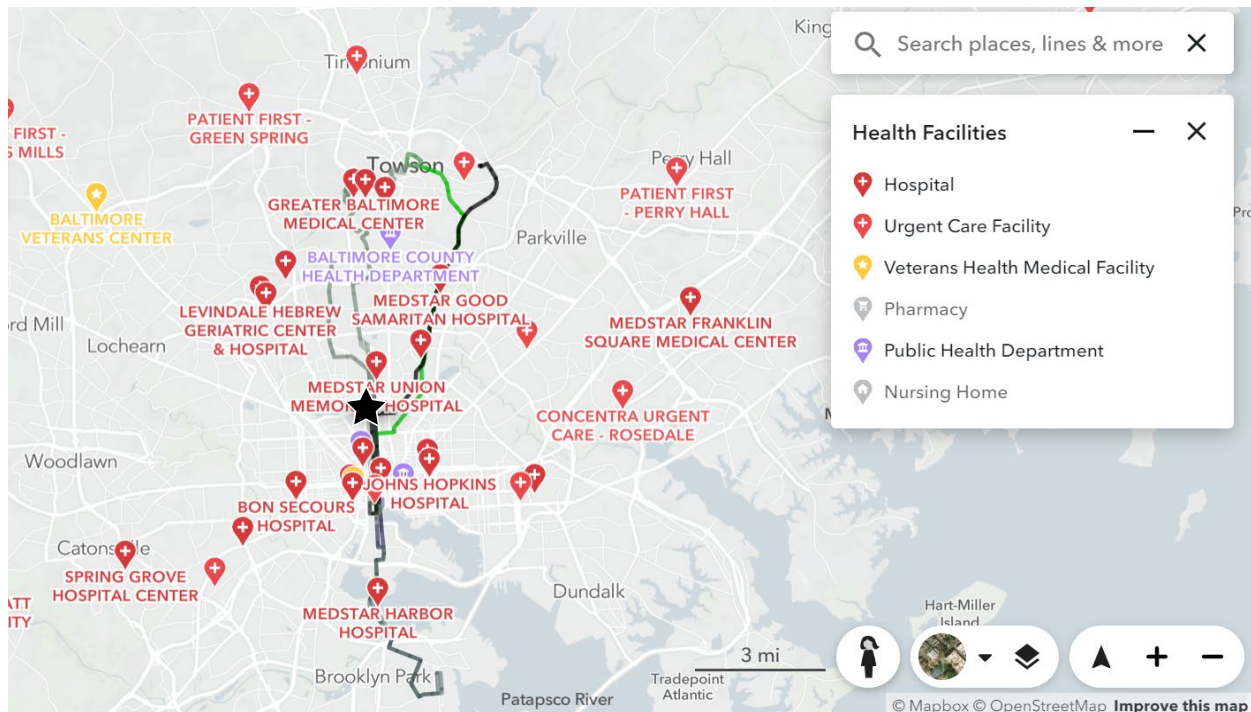


Figure 15: Healthcare facilities in relation to bus routes with stops at Baltimore Penn Station

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. 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.

### ***Addressing Racial Equity and Barriers to Opportunity***

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.

Heavy rail and highway infrastructure can have the ability to bifurcate communities and impede accessibility. Penn Station sits within an active rail yard adjacent to the Jones Falls Expressway. The Project's investments in improved pedestrian and bicycle infrastructure at street-level helps mitigate the negative impacts that the highway and heavy rail infrastructure can have on the communities within the Project area.

### ***Equity Planning and Policy Initiatives***

Baltimore City's Complete Streets Ordinance and accompanying manual require equity to be integrated into the transportation project selection and development process, ensuring that investments are made in communities with the greatest need. Through this policy, new transportation projects are prioritized through a process that identifies and screens projects through an equity lens. The manual also establishes community engagement policies centered on equity. This policy has been instrumental in focusing improvements on underserved communities and ensuring that community voices help to shape the design of infrastructure.

To further integrate equity into agency operations and policies, MDOT MTA has recently established an Equity Working Group and launched a senior-level Equity, Diversity, and Inclusion Committee (EDIC), supported by four subcommittees. The Employment subcommittee will make recommendations for employment practices that will yield a more inclusive and diverse workforce reflective of the MDOT MTA service area.

### ***Improves Mobility and Community Connectivity***

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.

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, travelling through a diverse set of communities along the way. The transit priority improvements introduced in this Project will improve reliable and timely access for these community members 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 9).



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 9: Bus Lane Travel Time Savings

**Creating station accessibility for all users**

It is paramount that the transportation system is accessible to all users. All pedestrian improvements in the Project, including intersection crossing investments and curb extensions will meet ADA requirements. The curb extensions located at bus stops will go beyond ADA requirements to increase pedestrian flow in these high traffic areas of sidewalk. The curb extensions at bus stops will also ease the functionality of the wheelchair ramps extended by transit vehicles, improving the riding experience for transit riders with a mobility disability.

**“ 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*

**Economic Competitiveness & Opportunity**

**Improving the movement of goods and people**

The 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 1.5million PHT, of which 0.9 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 \$7.3 million. Additionally, through more efficient bus travel the Project will also generate operational savings estimated at \$1.3 million.

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. This increase will expand access to destinations for passengers and generate a significant increase in consumer activity in the Station area.

**Impact on the local economy & the expansion of private economic development**

One way the Project will benefit the local economy is through reducing commute times via transit. The travel time savings previously shown in Table 8 would shorten trip time to several major employment centers along the bus routes that travel through both Baltimore City and Baltimore County. (Table 10)

**“ 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*



Employment Center	Role in Regional Economy
<b>Downtown Baltimore</b>	Downtown Baltimore serves as the city’s Central Business District and houses Baltimore City Hall, city agencies, state office buildings, non-profit organizations, hospitals, and private-sector offices.
<b>Johns Hopkins University</b>	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.
<b>Port of Baltimore</b>	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. Many jobs at the Port of Baltimore offer a living wage and do not require advanced degrees. Workers at the Port of Baltimore are represented by the International Longshoreman’s Association.
<b>Hunt Valley, MD</b>	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.
<b>Towson, MD</b>	Towson is home to Towson University and a downtown commercial core with office, retail and county government uses.
<b>Regional Employment Hubs</b>	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, Social Security, Trade Point Atlantic, Port Covington, UMBC, Downtown Washington, DC, New Carrollton, Odenton/Fort Meade, and Aberdeen Proving Ground.

*Table 10: Employment Centers with direct Transit Connections to Baltimore Penn Station*

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 development. 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.





**Decrease transportation costs and improve access and long-term efficiency**

The Project will have long-term benefits to the efficiency of travel along the Baltimore-Washington corridor. 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 (Table 11).

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

In 2020, over 6,800 commuters rode the MARC from Baltimore Penn Station on a daily basis to jobs in the region. Following historical trends, the number of MARC commuters is projected to increase to at least 10,000 daily riders by 2040 (Figure 16). **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**

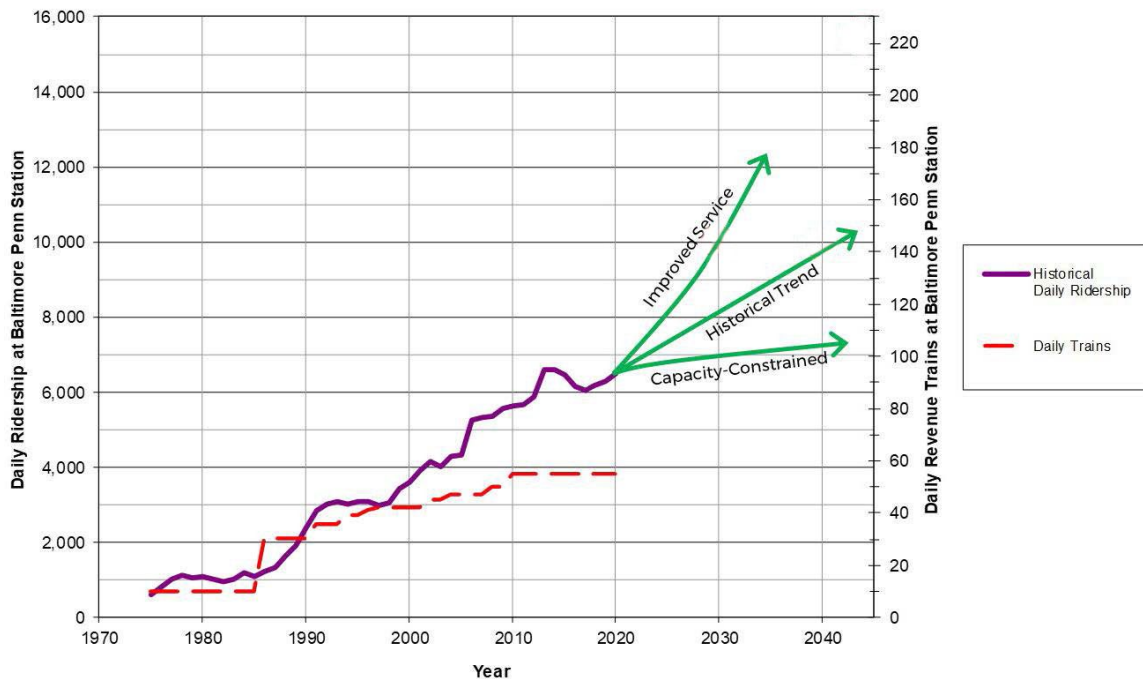


Figure 16: MARC Service at Baltimore Penn Station



### ***Bridging gaps in rural service and supporting economic competitiveness***

While Baltimore City is a major 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.

### ***State of Good Repair***

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

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 using the experience with the dedicated bus lanes already installed to better understand and anticipate maintenance issues. Some of the initial downtown 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.



### ***Partnership & Collaboration***

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/RAISE 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 facilitate use of the public right-of-way, inform design to ensure the Project meets City standards, and support construction management to ensure limited community impacts. 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 Belvedere, 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 \$1 million match contribution to this RAISE project, which will support pedestrian and bicycle connections to the Station. Their partnership throughout the design, engineering, and construction of the RAISE 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.

### **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 and other prioritizing treatments across 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.

### **Innovative Technologies**

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

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.

**Innovative Project Delivery & Financing**

*Building Penn Station Connections* represents an opportunity to pull together a diverse set of funding sources as part of an innovative partnership between private developers, community organizations, local government, and state-level transportation and community development agencies. Leveraging the strengths of each partner, project delivery will efficiently use contracts and relative construction management expertise from both MDOT MTA and BCDOT to best implement the array of project elements. Having funding partners at the table who specialize in community organizing and land development will help the Project harness robust community participation and result in impactful economic development outcomes.



Figure 17: "IKE Smart City" interactive kiosks

**5. Project Readiness & Environmental Risk**

With a RAISE 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: RAISE funding will provide the final missing piece to unlock this project's transformational impacts.



### ***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 2022. 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 North Avenue Rising, a BCDOT inspector worked side-by-side with MDOT MTA construction management staff in the field to ensure that work was done to City and State standards. This past experience reduces the potential for unexpected delays at all phases of the Project.

### ***Financial Completeness***

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 from both the state and local level.

### ***Environmental Risk***

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. Community-driven design and communications during construction will be guided by the environmental justice screening analysis and lessons-learned from the North Avenue Rising TIGER project. 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.



**Project Schedule**

MDOT MTA will have all necessary pre-construction activities completed by June 1, 2024. All necessary activities will be complete to allow RAISE grant funds to be obligated sufficiently in advance of the 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. The project can begin work upon obligation of grant funds and those funds will be spent expeditiously with all funds expended by September 30, 2029.

Milestone	Date
Anticipated Grant Award	10/1/2022
Environmental Approval	2/1/2023
Sign Grant Agreement	4/1/2023
Preliminary Engineering Complete	10/1/2023
Final Design Complete	4/1/2024
Construction Begins	3/1/2025
Substantial Completion	9/1/2026

*Table 12: Project Activity Timeline*

**Required Approvals and Permits**

**NEPA Status**

MDOT MTA has already begun investigating the potential for environmental impacts from the Project and expects them to be minimal. Similar to other like projects, MDOT MTA is expecting the Project to qualify for Categorical Exclusion. Given the limited amounts of ground disturbance, MDOT MTA does not anticipate receiving a National Environmental Policy Act (NEPA) determination that will impede the construction of the Project. Upon notification of grant award, MDOT MTA will work with federal partners to complete the NEPA process in line with completion of preliminary design.

**State and Local Planning Approvals & Federal Requirements**

If awarded a RAISE grant to enhance multimodal connections to Baltimore Penn Station, MDOT MTA and BCDOT will work closely with the Baltimore Region Transportation Board (BRTB) 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 the Transportation Improvement Program (TIP) by the end of 2022.

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.

**Risk and Mitigation Strategies**

The following table 13 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
<b>Procurement Delays</b>	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.
<b>Environmental Uncertainties</b>	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.
<b>Community Impacts during Construction</b>	Limited	MDOT MTA and BCDOT have strong relationships and tested engagement methods from the nearby North Avenue Rising project. These experiences and relationships will guide the public engagement for this Project’s streetscape design and community coordination during construction on an arterial corridor.
<b>Real Estate Acquisition Cost Changes</b>	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.
<b>Uncommitted Private Match</b>	Limited	Penn Station Partners has committed \$1,000,000 towards bicycle and pedestrian connectivity and these are being drawn from non-federal funds already available through existing grants and agreements.
<b>Legislative Approval</b>	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.
<b>COVID-19</b>	Uncertain	To date, COVID-19 has not impacted the development of the grant application or the recent 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.
<b>Historic Preservation</b>	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 RAISE 2022 program. The analysis was conducted in accordance with the benefit-cost methodology as outlined by U.S. DOT in the 2022 Benefit-Cost Analysis Guidance for Discretionary Grant Programs. The period of analysis corresponds to 30 years after operations begin in 2026.

The capital cost for this Project is expected to be \$12 Million in undiscounted 2020 dollars. Discounted at 7%, the present value of capital costs is \$8.6 Million. The Project is expected to generate \$10.0 Million discounted benefits using a 7 percent discount rate. The primary benefits are about \$7.3 Million in travel time savings, about \$1.3 Million due reduced MDOT MTA operating costs, and \$1 Million in new transit facility amenities value. This leads to an overall project Net Present Value of \$1.3 Million and a Benefit Cost Ratio (BCR) of 1.16.





***List of Appendices***

All appendices are housed on the MDOT website and can be access at the URL below: [www.mdot.maryland.gov/RAISE](http://www.mdot.maryland.gov/RAISE).

**Appendix 1.**  
Benefit-Cost Analysis  
Report

**Appendix 2.**  
Letters of Financial  
Commitment

**Appendix 3.**  
Letters of Support

**Appendix 4.**  
Environmental  
Documentation



