

# *Chapter VII*



# *Mitigation*

## VII. MITIGATION

Impacts that would result from the Preferred Alternative as described in **Chapter VI** will be mitigated through the implementation of mitigation measures described in this chapter. **Table VII-1** provides a description of these mitigation measures and the impacts they are intended to address. Although the following measures correspond with the Preferred Alternative, similar measures would also be appropriate to mitigate the impacts of Alternative 3A and Alternative 3C. Further details and final commitments for mitigation measures will be included in the Record of Decision (ROD).

For clarity, the table groups the mitigation measures into categories, including Outcome Monitoring, Community, Economy, Transportation, Natural Resources, Hazardous Materials/Emergency Management, Construction, Operational Air Quality, Operational Noise, Operational Vibration, and Cultural Resources and Historic Properties. The mitigation measures would be implemented during design, construction, and after construction of the Preferred Alternative. More detail on the mitigation items related to cultural resources and historic properties can be found in the draft Programmatic Agreement (PA) included in **Appendix H**.

**Table VII-1: Mitigation Measures**

No.	Mitigation Measure/Project Commitment	Relevant Impacts Mitigated
<b>Outcome Monitoring</b>		
1	A designated lead agency will monitor the outcomes and effectiveness of mitigation efforts by implementing detailed tracking procedures and public reporting.	All
<b>Community</b>		
2	The Preferred Alternative will include establishment of a fund to support community development within affected communities. Examples of community development activities include economic development projects, installation of public facilities, community centers, public services, small business assistance, homeowner assistance, and others. The fund will provide funding to not-for-profit community development organizations that serve communities within the corridor for operating expenses and capital projects. Funds will be awarded, based on published criteria, to organizations that are active within 1/4 mile of the Project alignment. Projects that are explicitly included under other mitigation measures, such as park improvements, will not be eligible for mitigation under this measure.	Community facilities, community cohesion, neighborhoods, environmental justice, land use, residential, business, cultural/historic
3	The Preferred Alternative will include the provision of relocation benefits to property owners and tenants pursuant to the Uniform Relocation Act.	Residential, business, environmental justice
4	The Preferred Alternative will include establishment of a fund for maintenance of, and improvement to, publicly-owned parks and recreation facilities within affected communities. Parks and recreation facilities receiving funding should be located within 1/4 mile of the Project alignment.	Community facilities, environmental justice, community cohesion, neighborhoods
5	The Preferred Alternative will include visual screening of ventilation facilities adjacent to schools and other community facilities.	Community facilities



No.	Mitigation Measure/Project Commitment	Relevant Impacts Mitigated
6	The Preferred Alternative will include funding to support the improvement or establishment of community gardens, vacant lot greening, and/or the establishment or improvement of public open space within 1/4 mile of the Project alignment.	Community facilities, street trees, stormwater, visual, community cohesion, neighborhoods, land use
7	The Preferred Alternative will include a mechanism for public comment in the design and landscaping of project facilities such as portals, ventilation facilities, and other visible project structures.	Visual, cultural/historic
<b>Economy</b>		
8	The Preferred Alternative will provide coordination with local job training organizations to 1) facilitate targeted job training by providing estimates of the type, number, and timing of jobs expected to be created by project contractors, 2) include in construction contracts goals for nationally targeted workers of social and economic disadvantage, and 3) require project contractors to report on a regular basis their progress in meeting contract goals. The Project will provide public reporting on job creation.	Environmental justice, business
<b>Transportation</b>		
9	The Preferred Alternative will include funding for streetscape infrastructure, pedestrian, and bicycle access improvements within 1/2 mile of the Project alignment with emphasis on access to the West Baltimore MARC Station. Examples include landscaping and street trees, bus stop facilities, benches, trash receptacles, lighting, sidewalk repairs, bike lanes, cycle tracks, crosswalk striping and signaling, traffic calming measures, ADA accessibility, and/or public art.	Street trees, stormwater, visual, transportation, community cohesion, neighborhoods
10	The Preferred Alternative will include development of a Traffic Plan that provides protection for safe pedestrian, bicycle, and vehicular movement around work sites during construction and maintains connectivity where possible. The plan will account for truck haul routes, construction traffic concerns, and municipal solid waste pick-up, and should help to minimize transportation impacts during construction. The plan should account for community resources such as schools and parks.	Transportation, community cohesion, neighborhoods, construction, traffic, community facilities, noise
11	The Preferred Alternative will include stabilization and securement of the existing B&P Tunnel for potential future rail transportation use.	Transportation
12	The Preferred Alternative will include the replacement of all impacted station facilities at the West Baltimore MARC Station, and reconstruction of the facility in compliance with ADA.	Transportation, visual, community facilities, cultural/historic
13	The Preferred Alternative will include additional amenities at the West Baltimore MARC Station relative to what currently exists. Improved amenities such as security lighting, full platform canopies, or public art may be considered.	Transportation, visual, community facilities



No.	Mitigation Measure/Project Commitment	Relevant Impacts Mitigated
<b>Natural Resources</b>		
14	The Preferred Alternative will include the development and implementation of a Stormwater Management Plan in accordance with MDE guidelines. The plan will focus on stormwater runoff associated with construction activities and surface impacts, both temporary and permanent, throughout the Study Area.	Stormwater, construction
15	The Preferred Alternative will include development and implementation of an Erosion and Sediment Control Plan for construction activities.	Stormwater, construction
16	The Preferred Alternative will include implementation of vegetative buffers to screen right-of-way along the Northeast Corridor in the Study Area, and develop a mechanism for maintenance of vegetative buffers.	Visual, stormwater
17	The Preferred Alternative will include implementation of a Rodent Abatement Plan.	Construction
18	The Preferred Alternative will include the development and implementation of a Street Tree Protection Plan and a Forest Conservation Plan.	Street trees
19	The Preferred Alternative will include a plan for floodplain mitigation.	Floodplain
20	The Preferred Alternative will include a Tunnel Sump Water Treatment and Disposal Plan.	Water resources
<b>Hazardous Materials / Emergency Management</b>		
21	The Preferred Alternative will include development and implementation of a Hazardous Spill Prevention Plan.	Hazmat
22	The Preferred Alternative will include development of an Emergency Management Plan to be implemented in the event of a tunnel emergency.	Safety/hazmat, transportation
23	The Preferred Alternative will include development of a Hazardous Materials Remediation Plan to remediate Hazardous Material sites impacted by the Project.	Hazmat
24	The Preferred Alternative will include development and implementation of a Screening and Materials Handling Plan for the pumping, segregation, transportation, and disposal of groundwater. Evaluation of any screening and sampling results by an environmental professional will determine health and safety, handling, and off-site disposal requirements.	Hazmat
25	The Preferred Alternative will include implementation of a program for the identification and segregation of impacted soils for additional testing and off-site disposal. Evaluation of any screening and sampling results by an environmental professional will determine health and safety, handling, and off-site disposal requirements.	Hazmat
<b>Construction</b>		
26	<p>The Preferred Alternative will include development and implementation of a Construction Noise Mitigation Plan. The plan will include to the extent practicable:</p> <ul style="list-style-type: none"> <li>• Location of construction equipment and material staging areas away from sensitive receptors where possible;</li> <li>• Temporary noise barriers and advanced construction of permanent barriers to serve during construction where possible; and</li> <li>• Routing of construction traffic and haul routes along streets in non-noise sensitive areas where possible.</li> </ul>	Noise, construction



No.	Mitigation Measure/Project Commitment	Relevant Impacts Mitigated
27	The Preferred Alternative will include development of a Construction Vibration Mitigation Plan to include the following measures: <ul style="list-style-type: none"> <li>• Use of controlled blasting construction for vibration mitigation during drill and blast, and utilize blast covers when applicable.</li> <li>• Implementation of contractor control measures to ensure vibration from the TBM is kept low enough to avoid damaging buildings, including historic buildings, and remains below applicable FTA impact criteria.</li> <li>• Implementation of a vibration monitoring program and pre-survey of buildings in tunneling and blasting areas.</li> </ul>	Vibration, construction, cultural/historic
28	The Preferred Alternative will include development and implementation of a Construction Emissions Reduction Plan to include measures such as reducing equipment idling times, utilizing on-site storage to reduce truck haul trips, using low-emissions equipment, dust suppression measures, ensuring the contractor has knowledge of appropriate fugitive dust and equipment exhaust controls, and other measures.  Construction activities undertaken as part of the Preferred Alternative will be performed in accordance with Maryland’s <i>Standard Specifications for Construction and Materials</i> , and COMAR 26.11.06.03D – <i>Fugitive Particulate Matter from Materials Handling and Construction</i> .	Air quality, construction
29	The Preferred Alternative will include utilization of public information and feedback methods such as construction-alert publications and complaint hotlines to address issues and keep the public informed. Notifications will include information about construction schedules, road closures, transit service impacts, blasting, and contact information.	All construction related
<b>Operational Air Quality</b>		
30	The Preferred Alternative will include vertically-oriented fans at ventilation facilities to facilitate dispersion of emissions from locomotives and avoid violation of air quality regulations.	Air quality
<b>Operational Noise</b>		
31	The Preferred Alternative will include noise barriers to mitigate anticipated operational noise impacts. Ventilation facilities will be designed with noise attenuation measures.	Noise
<b>Operational Vibration</b>		
32	The Preferred Alternative will include implementation of operational vibration control measures to mitigate modeled vibration or ground-borne noise impacts exceeding FTA Frequent Impact criteria. Potential mitigation measures to consider during design include: <ul style="list-style-type: none"> <li>• Resilient fasteners</li> <li>• Ballast mats</li> <li>• Resiliently supported ties</li> <li>• Floating slab track</li> <li>• Rail vibration absorbers/dampers</li> </ul>	Vibration
<b>Cultural Resources and Historic Properties</b>		
33	The Preferred Alternative will include the establishment of a preservation grant fund to address adverse effects to historic properties. More detail is included in the PA.	Cultural/historic



No.	Mitigation Measure/Project Commitment	Relevant Impacts Mitigated
34	The Preferred Alternative will include context-sensitive design treatments for new construction informed by the features of the affected historic properties. More detail is included in the PA.	Cultural/historic
35	The Preferred Alternative will include sound barriers and/or vegetation to ensure that relevant historic properties, including contributing elements of historic districts, are screened. More detail is included in the PA.	Cultural/historic
36	The Preferred Alternative will include a Historic Properties Construction Protection Plan designed to protect above- and below-ground known historic properties from adverse effects during construction activities. Additional provisions provide for identification, evaluation, and treatment of unknown cultural resources, unanticipated discoveries, and human remains. Plans will address vibration monitoring, stockpiling, and truck routes/hauling. More detail is included in the PA.	Cultural/historic
37	The Preferred Alternative will include preparation of written and photographic documentation consistent with Level II Historic American Buildings Survey (HABS)/Historic American Engineering Record (HAER) standards for deposit within the MD SHPO, for the historic properties, including contributing elements of historic districts, directly adversely affected. More detail is included in the PA.	Cultural/historic
38	The Preferred Alternative will include preparation of interpretive material including signs and/or displays and brochures to be located in Baltimore’s Pennsylvania Station. Possible themes may include the history of the B&P Tunnel, the history of the Pennsylvania Railroad and Pennsylvania Station, the influence of railroads on Baltimore City, and/or archaeological findings in the Project area as relevant. More detail is included in the PA.	Cultural/historic
39	The Preferred Alternative will include measures for securing, salvaging, and stockpiling of building materials from the demolition of historic properties and contributing elements to historic districts. More detail is included in the PA.	Cultural/historic
40	The Preferred Alternative will include the addition to the existing project website of a new section on cultural resources that will provide a platform for the electronic storage and public dissemination of information on Project activities and findings related to historic architecture and archeology. More detail is included in the PA.	Cultural/historic
41	The Preferred Alternative will include the completion of a Phase I Archaeological Survey sufficient to identify archaeological resources that may be affected by the Project. A Phase II archaeological survey will be conducted to evaluate the identified resources for NRHP eligibility. If an adverse effect cannot be alternatively mitigated, the Preferred Alternative will include a Phase III Data Recovery for each adversely affected archaeological historic property. More detail is available in the PA.	Cultural/historic
42	The Preferred Alternative will include an investigation of the history, development, use, and evolution of the station facilities and yards comprising present-day Pennsylvania Station in Baltimore City for the purposes of clarifying and delineating the official boundaries of railroad-related NRHP-listed and eligible historic properties.	Cultural/historic