

Red Line/Blue Line Connector Project

Boston,
Massachusetts

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Introduction

This Technical Memorandum describes the temporary impacts that constructing either of the Red Line/Blue Line Connector Project alternatives may cause. These are additional impacts that were not described in other submitted Technical Memorandums and Reports. These impacts are classified as nuisances, primarily the generation of dust, noise, odor and possible rodent activity during the construction period. Construction phasing activities for the Project, all of which are common between the two Build Alternatives, are summarized in Chapter 2. Chapter 3 describes these nuisance impacts during construction, regulatory compliance, and mitigation for these temporary impacts.

These temporary impact evaluations respond to the requirements of the Massachusetts Executive Office of Energy and Environmental Affairs Secretary's Certificate on the Expanded Environmental Notification Form (EENF) and consider the comment letters received on the EENF. The analyses were developed in compliance with the Massachusetts Environmental Policy Act (MEPA) regulations.

The proposed tunnels for the Blue Line extension under Cambridge Street, west of the existing Bowdoin Station, would be constructed by a horizontal boring machine. This machine would bore the two (in-bound and out-bound) tunnels beneath existing infrastructure. All work along this segment would be completed below grade, with the exception of open excavation access points at either end of the tunnel alignments. Surface disturbance on Cambridge Street would be limited. East of Bowdoin Station, for approximately 800 feet, cut-and-cover construction would be used to realign the existing tracks from Government Station. Open excavation would also be used to construct the short tail tracks immediately west of Charles/Massachusetts General Hospital (MGH) Station, the new subsurface Blue Line platform at the station, and the nearby vent shaft; totaling approximately 950 linear feet of excavation. The open excavation areas would total approximately 1,750 linear feet. The open trenches would be covered with traffic decking, when possible.

A staging area, tentatively established as a portion of the Massachusetts Eye and Ear Infirmary (MEEI) parking lot immediately northwest of Charles/MGH Station,

would be the main access point to the excavation area. A second access point would be established near Bowdoin Station to allow the boring machine to be removed.

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Construction Phasing

A general Construction Phasing Plan has been developed for the Project. The Construction Phasing Plan identifies the general phases, tasks, and construction methodologies. In chronological order (with some task overlap), the major phases of construction would include:

- Phase 1 - Initial utility relocation and other initial activities including installation of a reverse crossover in the tracks east of Government Center Station and necessary track signal modifications;
- Phase 2 - Northerly (westbound) tunnel construction and excavation of the cut-and-cover tunnel east of Bowdoin Station;
- Phase 3 - Southerly (eastbound) tunnel construction;
- Phase 4 - Construction of station(s), center arch (combining the two tunnel borings into one wider tunnel), platform, and the crossover area east of Charles/MGH Station;
- Phase 5 - Systems installation; and
- Phase 6 - Testing and close out.

The anticipated duration of constructing the Preferred Alternative is 6 years and 3 months.¹ The Project would be completed by the end of the third quarter of 2018, assuming a starting time at the beginning of the third quarter of 2012. A detailed construction Phasing Plan will be completed as part of final design, by December 31, 2012.

¹ Keville. 2009. Keville. 2009. *Red Line/Blue Line Connector Project, Preliminary Schedule, 3-Nov-2009- Contract Time Determination Study – Basis & Assumptions*. Keville Enterprises (Boston MA) November 3, 2009 letter to STV Incorporated.

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Corridor-Wide Temporary Construction Impacts and Mitigation

This Chapter describes temporary impacts associated with construction of the Red Line/Blue Line Connector Project. These additional impacts are considered nuisance impacts such as the potential for the creation of dust, noise, odor and rodent control. Compliance with the Massachusetts Air Pollution Control regulations, City of Boston Municipal Code, and the Massachusetts Contingency Plan and Massachusetts Hazardous Waste regulations during the construction period is also described.

3.1 Air Quality

Construction activities associated with utility relocation, grading, excavation, track and tunnel work, and the installation of systems components could result in temporary impacts to air quality. Air quality in the study area is not expected to be substantially affected by project construction because of the temporary nature of the construction and the confined construction area. As described in the *Air Quality Technical Report*, emissions from the operation of construction machinery could include nitrogen oxides, sulfur oxides, carbon monoxide, and particulate matter.

Protective measures will be undertaken around the construction and demolition work areas to protect pedestrians and prevent dust and debris from leaving the site or entering the surrounding community. Dust generated from earthwork and other construction activities like stockpiled soils will be controlled by spraying with water to mitigate wind erosion on open soil areas. Other dust suppression methods will be implemented to minimize dust transported off-site. There will be regular sweeping of the pavement of adjacent roadway surfaces during the construction period to minimize the potential for vehicular traffic to create airborne dust and particulate matter.

3.2 Noise

Noise-generating construction equipment expected for this Project include air compressors, generators, jack hammers, auger drill rigs, soil mix drill rig (for jet grouting), back hoes, dump trucks, cranes, clam shovels, excavators, hoe rams (hydraulically powered impact device), concrete mixer trucks, and concrete pumps.

For short-term construction activities, a preliminary “worst case” scenario of potential noise impact without mitigation indicates that 26 residential properties and 26 institutional and commercial properties may be exposed to construction noise impact. L10 construction noise levels are generally 80 to 90 dBA at these closest receptors (typical daytime criterion is 75 dBA for residences and 80 dBA for commercial land uses, typical evening criterion is 65 to 78 dBA at residences and typical nighttime criterion is 65 to 70 dBA at residences). For a more detailed description of noise assessment, see the *Noise and Vibration Technical Report*.

The contractor will be required to abide by the City of Boston Municipal Code regarding Unreasonable Noise, Chapter 16, Section 26. If required, construction noise mitigation would include preparing a Noise Control Plan in conjunction with the contractor’s specific equipment, schedule, and methods of construction, specifying maximum noise limits for each piece of equipment, prohibiting certain types of equipment during the nighttime hours, and engineering noise control measures.

3.3 Solid Waste

Construction and demolition in Bowdoin Station would generate solid waste; preliminary estimates determined that approximately 7,500 cy of construction and demolition debris may be generated. Some of this debris may be special waste, requiring special management for worker exposure and waste disposal. Suspected lead, mercury, or asbestos-containing building materials, as well as polychlorinated biphenyl products and petroleum products, are present within Bowdoin Station and the existing tunnels. Construction or demolition activities in the Bowdoin Station or Bowdoin Loop tunnels may result in worker exposure to these regulated materials. The nature and extent of the exposure risk is not possible to determine at this phase of design. A hazardous materials and/or special waste management plan, describing testing protocols, on-site management, and eventual treatment or disposal will be developed to the extent necessary, based upon the final design, prior to construction. For a more detailed description of noise assessment, see the *Limited Environmental Site Assessment* technical report.

Any hazardous materials will be managed in accordance with relevant regulatory requirements for treatment, storage, and disposal. Soil excavation and disposal will

be completed following the Massachusetts Contingency Plan (MCP) rules and regulations, as well as the Massachusetts Hazardous Waste Management Rule and the federal Resource Conservation and Recovery Act (RCRA) Regulations.

3.4 Rodent Controls

The following rodent abatement measures would be implemented during Project construction.

- The contractor will provide proof of baiting, according to City of Boston Rodent Control Division guidelines, prior to being issued a building, demolition, or land disturbance permit.
- The Project area will be baited with above ground bait boxes seven days before beginning construction, demolition, or any land disturbance. These bait boxes are generally made of heavy black plastic and can only be obtained from a licensed, professional extermination company. They would be secured to the ground and locked. Squirrels and other outdoor animals cannot feed from these stations.
- During construction, the site will remain baited around the perimeter of the Project area and bait stations will be refilled as needed. Trash and food scraps at these sites can be a feeding ground for rodents therefore, proper containers will be provided to dispose of this waste. The contractor will be required to follow City rodent control guidelines based on the state sanitary code as it relates to trash and rats.

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Temporary Construction Impacts and Mitigation – Specific Locations

This Chapter describes the areas of impacts as they pertain to Alternative 1 and Alternative 2. Each section provides the location of the impacts, the construction that will take place at the location, the temporary impacts and any restoration or mitigation.

4.1 MEEI Parking Lot Area: Alternative 1 and Alternative 2

The MEEI parking lot is located to the northwest of the existing Charles/MGH Station. It is an at-grade parking lot divided into an east and a west section. The lot is paved with hot mix asphalt pavement. At each section of the lot, there are curbs, walkways, landscaping and trees.

A temporary 25 x 30-foot access shaft will be constructed using the cut and cover method. This access shaft will be used for the duration of the project as an entrance and egress point for the tunneling operation. The eastern section of the lot will be utilized as a staging and laydown area for the tunnel work. The reduction in usable parking spaces will be mitigated. One of the mitigation alternatives being considered is the construction of a temporary parking structure at the west side of the parking lot. A permanent 8 x 8-foot vent shaft will be constructed at the end of the project at the temporary access shaft location.

4.1.1 Temporary Impacts

The existing curbs at Charles Street and at the entrance to the parking lot will be modified to allow truck traffic. The east side of the parking lot will be excavated for

the access shaft and as required for the laydown and staging area. Portions of the existing landscaping and trees will be removed for the staging area. The west side of the parking lot may be impacted by the construction of the temporary parking structure. If the temporary parking structure is built, it would require removing the landscaping and trees and constructing the temporary parking structure, as well as relocating an existing telephone ductbank.

4.1.2 Hazardous Materials Storage

Within the staging area, hazardous waste materials such as oil filters, petroleum products, paint, and equipment maintenance fluids would be stored in structurally sound and sealed shipping containers, within the hazardous materials storage area. Hazardous waste materials would be stored in appropriate and clearly marked containers and segregated from other non-waste materials. Secondary containment would be provided for all waste materials in the hazardous materials storage area, which would consist of commercially available spill pallets. Additionally, all hazardous waste materials would be disposed of in accordance with federal, state, and municipal regulations, as discussed further in the *Limited Environmental Site Assessment* technical memorandum. All waste materials would be collected and disposed of into two metal trash dumpsters in the materials storage area. Dumpsters would have a secure watertight lid, be placed away from stormwater conveyances and drains, and meet all federal, state, and municipal regulations. Further details regarding these methods would be included in the mandated Stormwater Pollution Prevention Plan (SWPPP) for the Project.

4.1 North and South Tail Tracks: Alternative 1 and Alternative 2

The north and south tail tracks will be constructed below-grade of the Charles Circle roadway system for both Alternatives 1 and 2. The tail track tunnels will be constructed by the sequential tunneling method, which is from below the roadway. However prior to the sequential tunneling beneath the roadways, the soil for the entire length of the tunnels will be jet grouted using equipment located on the surface drilling vertical holes into the ground every 5 feet on center and grouting these holes. In addition, there will be an 8-foot diameter drilled vent shaft installed at the west end of the south track tunnel off of the roadway.

4.1.1 Temporary Impacts

The jet grouting operation will disturb the existing roadway pavement that will be patched as needed to provide a safe roadway surface. Relocation of a Level 3 communication ductbank will be required.

4.1.2 Restoration and Mitigation

The existing roadways will be repaved at the end of the project. The new vent shaft will have a grate installed at grade and the area reseeded.

4.2 Red Line Pier 6 and Pier 7: Alternative 1 and Alternative 2

Piers 6 and 7 are concrete piers located at the east end of the existing Charles/MGH Station, which support the Red Line tracks above the roadway. In order to construct the south tail track tunnel below this area these two piers need to be underpinned using the cut and cover method using excavation equipment and pile driving equipment.

4.2.1 Temporary Impacts

The existing curbs at West Cedar Street and the existing raised traffic islands west of the Charles/MGH station will need to be modified to allow temporary traffic movements around the construction and to be channel traffic. A portion of the existing parking lot under Pier 7 will be excavated and used as a staging area. A portion of the sidewalk and stairs in front of the Charles/MGH Station will be removed. The sidewalk at Pier 7 will be removed and a temporary sidewalk installed in an adjacent location to funnel pedestrian traffic around the construction area. A portion of the roadway by Pier 6 will be excavated. Relocation of electrical conduits, electrical ductbank and a Level 3 communication ductbank will be required.

4.2.2 Restoration and Mitigation

The curbs, raised traffic islands, parking lot and sidewalk adjacent to the parking lot will be restored to their original configuration at the end of the construction period. The roadway will be repaved. The stairs and sidewalk at Charles/MGH Station will be reconstructed as part of the Charles/MGH Station modifications.

4.3 Existing Charles/MGH Station: Alternative 1 and Alternative 2

The existing Charles/MGH Station is located at the west end of the Project area, which has been end of the recently remodeled and includes a glass curtain wall façade. At the northeast corner of the station, the station will be reconstructed with a new curtain wall to enable the installation of a new escalator and elevator to the new

platform below. A new stairwell will be installed at the southeast corner of the station. Both of these structures will be constructed using the cut-and-cover method.

4.3.1 Temporary Impacts

A portion of the sidewalk will be removed at the northeast corner of the Charles/MGH Station. Inside the Station, the existing floor slab will be removed as required to install the new stairwell, escalator and elevator. The reconstruction of a portion of the existing roof will be required. Relocation of existing station utilities will also be required.

4.3.2 Restoration and Mitigation

The station interior will be restored and modified to accommodate the new stairwell, escalator and elevator. The northeast corner of the station will have a new curtain wall. The existing sidewalk will be restored.

4.4 Access Shaft and Jet Grouting Area: Alternative 1 and Alternative 2

The proposed access shaft is at the east end of Charles/MGH Station and will continue eastward on Cambridge Street for approximately 150 feet. An access shaft, approximately 100 x 70 feet, will be constructed in two stages using slurry wall, open cut excavation, and road decking construction methods. The access shaft will be used as the insertion point of the Tunnel Boring Machine (TBM) and to construct the two bored tunnels. Prior to the TBM commencing its tunneling eastward a 40-foot section of the earth just to the east of the access shaft will be jet grouted using equipment located on the surface.

4.4.1 Temporary Impacts

Cambridge Street was recently reconstructed and currently includes a raised brick median with granite curbs and landscaping (trees and perennials) in wider sections, and brick sidewalks and antique-style street lights. Removal of the existing roadway, portions of curbing and brick paver sidewalk, raised median, planters and landscaping will be required during the construction of the access shaft and jet grouting operation. At this preliminary stage of design, landscaping impacts have not been quantified however; the removal of median shrubs and plants is required within the access shaft construction area. The road decking at the access shaft and patching of the roadway during the jet grouting operation will allow the traffic to be routed through this area. Relocation of existing utilities will be required and will be done in stages.

4.4.2 Restoration and Mitigation

Once the two bored tunnels are constructed, the roadway, brick paver sidewalks and curbing will be reconstructed to its original configuration. New raised medians with new planters and landscaping will be constructed in their original configuration. The existing utilities to be relocated include Level 3 communication ductbanks, gas lines, CSO lines, water lines, telephone lines, electrical lines, sanitary lines, drain lines and fire communication lines. Landscape and streetscape elements will be restored to their current conditions at the conclusion of the Project.

4.5 Vent Structure and Emergency Egress Area: Alternative 1 and Alternative 2

The vent structure and emergency egress from the Charles/MGH platform will be located within the area of Cambridge Street from North Grove Street to Blossom Street. A below-ground egress corridor and an at-grade emergency hatchway will be constructed using the cut and cover method. A below-grade vent structure and at-grade vent grate will also be constructed using the slurry wall and cut and cover methods. The vent grate and hatchway will be located in the raised median.

4.5.1 Temporary Impacts

Excavation of portions of the existing roadway, raised median, planters and landscaping will occur for the construction of the new items, as well as for a staging area. All utilities within the vicinity of the proposed vent structures and emergency egress areas will be required.

4.5.2 Restoration and Mitigation

The roadway curb-to-curb will be reconstructed to its original configuration, as well as the raised median, planters and landscaping, except for where the new at-grade vent grate and emergency egress hatchways are located. Utilities will be reconstructed within their existing alignment.

4.6 Exhaust Vent Area: Alternative 2

The exhaust vent area will be constructed within Cambridge Street at the Joy Street intersection. An at-grade vent grate, within the median that ties into the existing tunnel below using the cut and cover method, will be constructed.

4.6.1 Temporary Impacts

Portions of the existing roadway, raised median, planters and landscaping will be excavated for the construction of the vent and for a staging area.

4.6.2 Restoration and Mitigation

The roadway, raised median, planters and landscaping will be reconstructed to its original configuration, except for locations of the new vent grate within the raised median.

4.7 Emergency Egress Stairwell and Hatchway: Alternative 2

The emergency egress stairwell and hatchway for the relocated Bowdoin Station platform will be located within Cambridge Street at the Coolidge Avenue intersection. A below grade emergency stairwell with an at-grade emergency egress hatchway will be constructed within the raised median using the cut and cover method.

4.7.1 Temporary Impacts

Excavation of the portions of the existing roadway, median, planters and landscaping will occur for the construction of the stairwell and hatchway and for a staging area. A 30-foot water line and an electrical ductbank will be relocated.

4.7.2 Restoration and Mitigation

The roadway, raised median, planters and landscaping will be reconstructed to its original configuration, except for locations of the new vent grate within the raised median.

4.8 Receiving Shaft, Jet Grouting Area and Cut and Cover Tunnel Construction Area: Alternative 1 and Alternative 2

The receiving shaft, jet grouting area and cut-and-cover tunnel construction area will be within Cambridge Street from Bowdoin Street to 400 feet east of Somerset Street. A receiving shaft, approximately 50 x 60 feet, will be constructed in two stages using slurry wall, open cut excavation and road decking construction methods. The

receiving shaft will be used as the extraction point of the Tunnel Boring Machine. Prior to the TBM tunneling to the receiving shaft a 40-foot section of the soil just to the west of the receiving shaft will be jet grouted using equipment located on the surface.

The tunnel will be constructed using slurry wall, cut and cover and road decking methods from this receiving shaft eastward to the end of the project. An 8 x 24-foot ventilation grate will be constructed in the raised median.

4.8.1 Temporary Impacts

Removal of existing roadway, raised median, curb, planters, landscaping and brick paver sidewalks will be required for the construction of the above items and for staging areas. Portions of the north curb and brick paver sidewalk will be removed to widen the roadway for temporary vehicular traffic. Relocation of the following utilities will also be required: communication ductbanks, MCI ductbanks, steam lines, gas lines, water lines, sanitary sewer lines, drain lines, electrical manholes and ductbanks, telephone ductbanks and manholes and fire communication manholes and ductbanks.

4.8.2 Restoration and Mitigation

The roadway, raised median, curb, brick paver sidewalks, planters and landscaping will be reconstructed to its original configuration, except for location of the new emergency hatchway and ventilation grate in the raised median.

4.9 Egress at Existing Bowdoin Station Head House: Alternative 1 and Alternative 2

The egress at the existing Bowdoin Station headhouse for both Alternatives 1 and 2 will be constructed within the City of Boston's Public Way where the existing Station is located. Alternative 1 will include the construction of an underground access corridor from the tunnels to the existing head house for an emergency egress using the cut-and-cover method. Alternative 2 will include construction of an ADA-compliant elevator shaft and elevator head house, to the west of the existing head house, using the cut-and-cover method. The existing walkways and curbing will be reconfigured.

4.9.1 Temporary Impacts

Impacts associated with Alternative 1 include the removal of portions of the existing roadway, curbing, brick paver sidewalk, trees and lawn. It also includes the relocation of two telephone ductbanks and one electrical conduit.

Impacts associated with Alternative 2 include the removal of brick paver sidewalk, curbing, trees and lawn. The construction of the elevator shaft would include a slight encroachment into the City of Boston's public way area that the existing Bowdoin Station is located. Although this work would not encroach into the protected park area, there may be impacts to shade trees within the City's property due to elevator construction.

4.9.2 Restoration and Mitigation

The roadway, curb, brick paver sidewalk will be reconstructed back to its original configuration for Alternative 1. New trees and lawn will also be planted.

The brick paver sidewalk will be reconstructed for Alternative 2. New curbing for will be installed and lawn will be replanted. Removed trees will be replaced subsequent to construction according to the City's mitigation requirements for shade trees. The existing landscape and streetscape elements of the recently completed Cambridge Street project will be restored at the conclusion of the Project. Any trees damaged by construction would be replaced.

5

Utility Relocation and Streetscape Impacts

This Chapter describes the utility relocation plan during the construction period, and the potential impacts to existing streetscape and landscape elements.

5.1 Introduction

Temporary utility relocation would be required in areas where cut-and-cover excavation would occur during the construction of the Project. There is no need for the relocation of the utility lines where the tunnel mining would be performed with the use of a Tunnel Boring Machine. Streetscape and landscape improvements made during the recent Cambridge Street Redevelopment Project such as sidewalks, granite curbing, median landscaping and antique-style lighting, would need to be removed from excavation locations during construction and subsequently replaced.

5.2 Utility Relocation

One of the first construction tasks includes the temporary and/or permanent relocation of existing utility lines. Proposed utility relocation areas are at the starter hole for the mining operation, the North Anderson Street ventilation structure, and the mining receiving hole at the east end of the project. The receiving hole would be approximately 250 feet west of the Government Center westbound platform. Utility lines would need to be relocated two to three times in some areas, to allow for stage construction and traffic maintenance. The existing utility lines will need to be identified, and possibly verified with test pits, at the location of the planned grouting areas in order to avoid damages caused by the grouting operations. Grouting is planned at the two storage track tunnels, east of the starter hole, and west of the receiver hole.

There are three categories of underground utility lines under the Cambridge Street:

- Gravity lines: Combined sewer, sanitary sewer and storm drain;
- Pressured lines: Steam, water and natural gas; and
- Communication and power cables and ducts.

Gravity lines to be relocated vary in size from a 6-inch drain to 36x51-inch Combined Sewer Overflow (CSO) line. All sanitary sewer and stormwater pipes along Cambridge Street from Staniford Street to Charles Street end at the 76x92-inch Massachusetts Water Resources Authority (MWRA) Marginal Sewer Line and the 36x54-inch CSO line under Storrow Drive. Pipes along the Cambridge Street from Bowdoin Street to Government Center drain northward towards New Chardon and New Sudbury streets. According to the City of Boston Sewer Regulations, gravity lines must be operational at any time and must be relocated before construction begins. All building sanitary sewer service connections must be maintained. Boston Water and Sewer Commission (BWSC) owns the majority of the gravity pipes however; some larger pipes are owned by MWRA. BWSC may request restoration of a separate drainage and sanitary sewer pipe systems with alteration of any section of a CSO line.

Pressured lines contain steam, water, and gas. Steam lines are concrete encased pipes with very large manholes, and are the most difficult to relocate. Every effort will be made to relocate the steam lines only once. There are three separate water line systems all owned by BWSC: Low Service, High Service, and Fire Service. According to BWSC policy, separate Fire Service lines must be eliminated during construction projects, so the final configuration after the end of construction will include only Low and High Service lines. During construction it will be necessary to keep only one water main line in the street in service. Gas lines are owned by National Grid Company. Typically, there are two gas lines on Cambridge Street and it is expected that National Grid will ask to restore both lines at the end of construction. It will be necessary to temporarily keep only one gas line operational during construction.

Power cables are owned by NStar. There is one high voltage ductbank under Storrow Drive at the proposed north ventilation shaft area, at the Massachusetts Ear and Eye Infirmary (MEEI). This ductbank would be very difficult to relocate therefore the relocation of that duct bank was avoided during preliminary design. In the Congress Street area, there are two-to-three various sized electrical ductbank systems. All the electrical services will be maintained during construction, but there may be a need to combine duct banks during construction. The final configuration of electrical manholes and ductbanks will be determined with input from NStar.

The major communication lines are telephone cables, owned by Verizon, and Level 3 cables, owned by a consortium of communication companies, each with over one hundred associated micro-cables. Smaller cables are owned by Comcast, City of Boston (fire communication, traffic, street lighting), RCN, Verocity, etc. All these

cables will be relocated from the cut-and-cover construction areas. Splicing the cables is typically not permitted, so cables must be replaced in association with the nearest existing manhole.

5.3 Streetscape and Landscape Impacts

Cambridge Street was recently reconstructed and currently contains a raised brick median with granite curbs and landscaping (trees and perennials) in wider sections, with brick sidewalks and antique-style street lights. As discussed previously, constructing either Build Alternative would include open excavations at the eastern and western ends of the Project area, as well as the North Anderson Street intersection, causing temporary impacts to streetscape improvements. Pavement, granite curbing, and median lighting would be removed in these cut-and-cover areas between the corner of City Hall Plaza to Staniford Street, and at the North Anderson Street intersection. These streetscape elements will be restored to their current conditions at the conclusion of the Project.

Landscape impacts are also anticipated during construction at cut-and-cover excavation areas. At this preliminary stage of design, landscaping impacts have not been quantified however median shrubs and plants may be removed at the cut-and-cover excavation areas required between City Hall Plaza and Staniford Street and at the North Anderson Street intersection. In addition, the inclusion of Americans with Disabilities Act-compatible escalators, elevators and stairway connections at the reconstructed Bowdoin Station would include a slight encroachment into the City of Boston's public way area. Although this work would not encroach into the protected park area, there may be impacts to shade trees within the City's property due to elevator construction. All removed trees will be replaced subsequent to construction according to the City's mitigation requirements for shade trees. Any trees damaged by construction would be replaced.