Memorandum

To: New Bedford Conservation Commission
Attn: Sarah Porter

Date: November 15, 2017

Project #: 12815.00

From: Richard H. Carey, P.E.
Kenneth Caputo

Re: South Coast Rail
Proposed Layover Facility in New Bedford
Responses to Comments

Based on the comments received from Nitsch Engineering (peer reviewer for the New Bedford Conservation Commission) dated November 6, 2017 and discussions during the New Bedford Conservation Commission hearing held on November 7, 2017, the stormwater drainage design for the proposed layover facility has been revised. The design changes, backup calculations, and specific responses to the comments are hereby submitted for review.

OVERVIEW

1. **Proposed Outfall** - The proposed stormwater design has been modified to include the proposed drainage outfall improvements for the Wamsutta Street drainage system. These upgrades were previously intended to be included in a separate New Bedford Department of Public Infrastructure project and Order of Conditions. The improvements proposed include replacing the existing 24" pipe outfall with a new 2' x 5' box culvert from the drainage manhole in Wamsutta Street that the layover facility site drainage outlet ties into to the outlet point into the existing drainage ditch and resource area (within an existing City drainage easement). The new box culvert outfall sizing has been sized the maximum achievable based on roadway and outfall grading constraints. The improvements as proposed address the pipe capacity requirements needed for our proposed connection from our proposed layover facility as well as additional capacity for the existing city drainage system identified for capacity upgrades by the DPI. Pipe sizing calculations and invert information are attached.

2. **Water Quality/Groundwater Recharge** – the proposed stormwater drainage system design has been revised to address water quality and groundwater recharge comments. Water quality structures and an outlet control structure have been added to the *layover yard* drainage system. These infrastructure elements will allow removal of suspended solids and for subsurface detention and groundwater recharge to mitigate the addition of impervious areas on the site (Standards 2, 3, 4 as they are applicable under Standard 7 relative to the new impervious area). The pre and post hydrology calculations attached demonstrate that pre and post runoff conditions for the 100-year event are balanced. The proposed water quality structures for the layover facility have been placed on the access road (between the tracks) collection system prior to the outlet control structure, such that stormwater detained for recharge is pretreated prior to entering the underdrain system.

   The proposed water quality structure designed to enhance water quality treatment of the *driveway and crew parking* stormwater collection system remains as part of our proposed stormwater

management system. This proposed water quality structure is located just prior to the discharge point into the Wamsutta Street drainage system.

Response to Comments

The following are responses to the comments in the November 6, 2017 letter:

1. Comment: The site has been designated a redevelopment site. Therefore, the project is required to meet the Massachusetts Stormwater Management Standards (the Standards) to the maximum extent practicable. However, it does appear that there is an increase in impervious surface. Based on the information that was submitted it is difficult to verify the amount of increase. Our interpretation of Standard 7 regarding new development is that new areas of impervious surface need to meet the Standards in full, as applicable.

   Response: Though the project is subject to coastal storm flowage, the proposed stormwater drainage system design has been revised to include an outlet control structure and water quality basins to provide stormwater detention and recharge of stormwater from the increase in new impervious surfaces. The attached calculations demonstrate the pre and post hydrology for the 100-year storm event are balanced.

2. Comment: Following the phone call on October 27, the Applicant's engineer issued hydrologic drainage calculations. It appears that the calculations submitted were for the proposed condition only. Existing conditions calculations were not submitted. Therefore, it is difficult to determine whether an increase in impervious surface is proposed and, if so, the amount of that increase. As stated above, our interpretation of the Standards is that increases in impervious surface need to meet the Standards in full, as applicable.

   Response: The attached calculations provide the pre and post hydraulic analysis requested. (See Attachment A).

3. Comment: The project's stormwater management system proposes to discharge directly to the municipal stormwater system in Wamsutta Street. The municipal system appears to discharge to the wetlands system near the proposed facility. However, the submitted plans do not include invert information, so we cannot verify if that occurs. During the call on October 27, the Applicant's engineer stated that the hydraulic report prepared by CDM regarding the municipal system's ability to handle additional stormwater flows from the proposed project would be submitted. We have not yet received a copy of that report and therefore have not had the opportunity to review it.

   Response: The proposed outfall improvements, replacing the existing 24" pipe outfall with a new 2' x 5' box structure, are now included in our plan set as part of the proposed layover stormwater system. The improvements as proposed provide the pipe outfall capacity needed for our proposed connection from the proposed layover facility as well as additional capacity for the future upgrades to the existing drainage system identified by the DPI. The

detailed design shows the existing system invert data and proposed design inverts (See Sheet UT-304 of the revised plans).

4. Comment: We have confirmed with MassDEP that the project is subject to coastal storm flowage. Therefore, Standard 2 regarding mitigation of peak flows offsite does not apply. As stated above, the Applicant should confirm that the municipal system in Wamsutta Street is sized to accommodate any increase in peak flows.

   Response: Though the project is subject to coastal storm flowage, the revised stromwater drainage system design is now in compliance with groundwater recharge compliance (Standard 3) for new impervious surfaces and compliance with Standard 2, even though not required (See Attachments A & B).

5. Comment: The proposed project includes catch basin to catch basin connections along the drain lines between the tracks. Typically, catch basin to manhole connections are installed to prevent sediments collected in the catch basin sumps from being re-suspended.

   Response: The catch basin to catch basin connections are a common drainage system practice in layover facilities. However, to mitigate the potential for re-suspended sediments, 3water quality tanks at the end of each access road collection line have been proposed to provide water quality treatment for the recharge underdrains.

6. Comment: We understand that although the project site is capped, the cap is not impervious and groundwater infiltration is allowed on site. Therefore, the project should meet Standard 3 of the Standards regarding groundwater recharge for the newly proposed impervious surface areas. The project has proposed a groundwater infiltration system that effectively captures water generated from the rail system and infiltrates it into the ground via ballast stone and a perforated pipe system. It does not appear that there is any treatment provided for water generated by the tracks. Therefore, the water that is proposed to be infiltrated is effectively untreated. Documentation needs to be provided that demonstrates proper treatment of any infiltrated stormwater consistent with Standards 4 and 5. Documentation also needs to be provided that demonstrates that the required quantity of stormwater is infiltrated, consistent with Standard 3.

   Response: As noted above, the proposed stormwater system design has been modified to recharge runoff from new impervious areas, even though as commented, this is not required since the area is subject to coastal storm flowage. Stormwater within the track area will infiltrate through the ballast stone and subballast to the proposed underdrain system where is will recharge into the ground. This does not collect runoff from the paved areas. Runoff from the paved areas will be directed to a closed drainage system with water quality structures. See Attachments B & C for calculation sheets documenting compliance with Standards 3 & 4.

7. Comment: We understand that the project is a storage area for Massachusetts Bay Transportation Authority (MBTA) trains. We interpret the use of this facility as consistent with the definition of a Land Use with Higher Potential Pollutant Loads (LUHPPL) for both exterior fleet storage areas as well as transportation facilities described in Standard 5. Therefore, the project should meet the treatment standards for infiltrated stormwater for a LUHPPL.

   Response: We view the LUHPPL limits to be those limits associated with the storage of the diesel locomotives. Based on standard MBTA commuter rail operations, the locomotives will be stored on the south end of the layover tracks. The stormwater system for this area of the proposed layover tracks does not drain toward the resource area at the north end of the facility. We do not believe that the remainder of the facility (area where engineless coaches are stored and the crew facility parking area is located), which are tributary to the resource area, fall under the definition of LUHPPL. Regardless, we have taken measures in the design to comply with Standard 5. Drip pans are proposed in the track where locomotives will be stored overnight to collect higher potential pollution loads and channel any runoff to the closed drainage system. The drip plans first channel flow to an oil gas separator prior to combining with flows from the track drainage system into a single water quality structure located on the southern side of the site. Pretreatment structures, as noted previously, are also included for treating runoff from the layover yard access roads and the crew facility parking lot and driveway.

8. Comment: The stormwater management report includes descriptions of erosion and sedimentation control measures, including catch basin protection, construction entrance/exit, diversion channels, etc. The grading plan shows a filter tube for erosion control only along the perimeter of disturbance generally within the buffer zone only. Additional details for catch basin silt sacks and a construction entrance were added to the revised plans. We recommend a separate erosion control plan, showing the construction entrance and other measures, be included with the plans consistent with Standard 8.

   Response: A separate Erosion Control Plan has been added to the revised plan set as requested. The Erosion Control Plan shows the locations of the required filter tube, catch basin silt sacs, and two construction entrance locations.

9. Comment: The plans include catch basins with both a 2-foot sump and a 4-foot sump. The plans should clearly show which catch basins contain 2-foot sumps and which contain 4-foot sumps.

   Response: The revised plans now label the catch basins with 2-foot and 4-foot sumps as requested.

10. Comment: The proposed project includes work within 25 feet of the wetlands limits, as shown on the plans. It appears that the area of the proposed work is generally consistent with the existing disturbed areas.

    Response: We concur with this statement.

Attachments:

A. HydroCAD
B. Recharge Calculations
C. TSS Removal
D. Pipe Calculation

Revised Plans dated 11/15/17

cc: Jean Fox-MassDOT
Lars Carlson-VHB
Michael Stoffel-HNTB