



Department of Public Infrastructure

Jamie Ponte
Commissioner

Water
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CITY OF NEW BEDFORD

Jonathan F. Mitchell, Mayor

August 2, 2018

Mr. Craig Dixon
Chairman
New Bedford Conservation Commission
New Bedford City Hall
133 William Street
New Bedford, MA 02744

Dear Mr. Dixon,

This letter is in response to Nitsch (Project #9972) review and comments dated July 17, 2018.

1. The project meets the definition of a redevelopment project as defined by Standard 7 of the Standards.

Response: No response required

2. The wetland mitigation area is located approximately 5,500 feet south of the proposed wetlands alteration. It is proposed to be 7,200 square feet. The wetlands mitigation area is somewhat disconnected from the existing wetlands in that area as there is a strip of upland proposed between the existing wetland area and the proposed mitigation area. It does appear to accept flow from an existing culvert, which will not provide continuous flow. We recommend a test hole be performed in the vicinity of the mitigation area to confirm seasonal high ground water elevations and ensure the proposed wetland will thrive. The applicant has responded that a test hole was excavated in the vicinity of the wetlands replication area on April 19. However, a test hole log was not submitted for this test hole and a location plan was not provided. Therefore, we cannot comment on whether the results of the test hole log indicate the area whether this area is appropriate for wetlands replication

Response to Comment: The test hole log and location plan are attached with this response letter. The test hole excavation was witnessed by the New Bedford Conservation Commission Agent. All involved in the test felt that the area was suitable for sustaining a thriving wetland replication area.

3. Sizing calculations were not provided for the proposed 4-foot x 3-foot box culvert. DPI references sizing calculations were included as Attachment D. However, Attachment D does not include sizing calculations for the 4-foot x 3-foot box culvert. Storm Sewer analysis calculations were submitted for a 3-foot diameter pipe in a different portion of the project. This analysis shows the piping system surcharging. Typically, pipes are sized to show free flow conditions. It is unclear which design storm the analysis has been provided for. We recommended that the sizing calculations be submitted for the 4-foot x 3-foot culvert. We also recommend that the piping associated with the SSA calculations be resized to prevent a surcharge of this system.

Response: Please see the attached profile for a 10-year storm event. Note that this analysis takes into account roadway ponding, surcharging, and pipe restrictions when calculating the peak flow within the system.

While surcharging was avoided as much as possible, site constraints limit the size of the proposed drainage pipes and structures. In particular, right-of-way constraints within the outfall area prevent use of a larger (or twin) culvert. Dense networks of utilities and limited elevation change present a similar challenge for pipes within the roadway. Pipes were therefore sized to the maximum extent allowed by site constraints. Proposed structures were checked to ensure 12" of freeboard existed between the predicted 10-year hydraulic grade line and the ground surface. In a few instances (mainly at catch basins), the calculated hydraulic grade line has less than 12" of freeboard but is still under the ground surface. In these instances, pipes were made as large as site conditions would allow. Existing drainage systems that connect to the proposed drainage system were not held to this standard.

4. The bioretention basins treat less than (1) acre out of the six (6) acres within the project area. Some level of treatment is provided for an additional 24 acres outside of the project area. However, this level of treatment includes either street sweeping, deep sump catch basins, or a combination of the two which provides far less than 80% Total Suspended Solids removal rate. Therefore, the adequate water quality treatment provided on this project is limited to a very small percentage of the project area. We recommend that the Applicant explore additional ways to include additional water quality treatment.

Response: Conditions within the project area make it extremely challenging to site additional water quality treatment. It is felt that there is no additional above-ground area suitable for BMPs due to availability of open land, utility conflicts, and location. Two types of below-ground treatment were evaluated for the project, but ultimately not included: 1) underground storage units that would allow for infiltration 2) individual treatment structures, such as oil/water separators. Underground storage units require a large amount of surface area that is simply not available on a project restricted to a roadway right-of-way. Individual treatment structures were considered, but not included

due to underground size constraints (caused by dense utility networks) and because they are not favored by the Department of Transportation.

Please note that all new catch basins within the project area will include a hood and deep sump for debris and sediment capture. While some existing catch basins have these features, many do not, and their replacement will result in better TSS capture. In addition, many existing pipes on site have negative slopes, which has allowed sediment accumulation to occur. When the pipes are cleaned or washed out by a particularly large storm, this results in a large volume of sediment exiting the system all at once. The proposed network will replace pipes with these types of slopes and alleviate associated sediment loads.

5. We recommend the Applicant consider including a structural water quality device to provide additional stormwater treatment. A structural device would not necessarily involve more land area as many of these devices are located below grade.

Response: Please see response to Comment #4.

6. In the response to comments letter, the Applicant has explained that BMP 1 has approximately 1.5 feet of separation between the bottom of the swale and seasonal high groundwater. This letter also explains that the bottom of the swale and seasonal high groundwater. This letter also explains that the bottom of the media for BMP 2 is approximately 1.2 feet lower than the seasonal high groundwater elevation. Therefore, during wet months, portions of the soil media will be inundated by seasonal high groundwater. The Guidelines require two (2) feet of separation between the bottom of the facilities (including soil media and underdrains) and seasonal high groundwater. Due to the nature of the project, there is no ability to alter the elevations of these facilities. However, they do not comply with the Guidelines.

Response: To address groundwater within the aggregate layer of BMP#2, the outside of the BMP will be wrapped in an impervious geotextile fabric. Although this will prevent runoff from infiltrating into the groundwater, it will protect the BMP from groundwater intrusion and provide the desired volume of water quality treatment.

7. The project includes a net increase of 29,800 square feet of impervious surface. This increase results in an increase in peak flows to the existing wetland NBS(3) for all storm events. The Standards indicate that additional impervious surface must be treated as new development and meet Standard 2 regarding increase in peak flows. The Applicant's response indicates that this is to be expected. In order to meet Standard 2, additional mitigation will be necessary.

Response: We respectfully ask for a waiver for this Standard. As stated in the response to Comment #4, underground storage units were considered, but found to not be feasible due to the limited underground property. Another option considered was to modify the outlet structure on the current bioretention basins to provide more of a storage

component. However, by making this change, much less of the basin is available for water quality treatment. Providing water quality is considered a larger priority and therefore the basins are designed accordingly.

8. The Applicant has indicated that the drainage calculations have been updated so they are consistent with the stage-storage data shown on the plans. However, additional calculations were not provided so we cannot verify that this has been completed.

Response: Please see the attached calculations. The stage storage data has been updated to reflect conditions shown on the plan set.

9. The peak inflow for BMP#2 is lower than the outflow. The Applicant has indicated that the drainage calculations have been revised. However, additional calculations were not submitted. Therefore, we cannot verify that this has occurred.

Response: Please see the attached calculations. The configuration for BMP#2 has been updated to address the error between inflow and outflow.

10. We recommend the plans that were prepared by DPI and CDM be more closely coordinated. For example, we recommend that the plans and numbering of structures be coordinated for clarity. It is unclear where the limit of work for each 'project' begins and ends. The Applicant has stated they will not be revising the plans. The Applicant should verify that the location of structures that are shown in each set of plans is identical. We do not think these structures are shown consistently between the two sets of plans.

Response: Please see the attached updated plan sets. Labels for structure shown on DPI plans have been updated to include a cross-referenced structure ID on CDM Smith plans.

11. The Long-Term Maintenance Plan refers to the Draft Department of Public Infrastructure Standard Operating Procedures regarding maintenance. The Applicant has provided a link to the City of New Bedford Stormwater Management Rules and Regulations. These Regulations describe that an Operations and Maintenance Plan is required for all projects and it describes the contents of the Operations and Maintenance Plan but does not provide an Operations and Maintenance Plan for the submitted project.

Response: As the city-wide SOPs are still in a draft stage, they will not be used. Instead, the attached long-term maintenance plan has been updated to include procedures specific to this project. To prevent a potential future conflict between the city-wide SOPs (once they are finalized) and the specific procedures for this project, it is noted that the most conservative maintenance listed in the two documents will be performed. In addition, please note that the long-term maintenance plan and O&M plan have been combined into one document.

12. The Operations and Maintenance Plan should include catch basin cleaning since street sweeping and the deep sump catch basins are part of the proposed treatment train in the TSS removal sheets. The Applicant has indicated that the Operations and Maintenance
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Plan has been updated. However, the Operations and Maintenance Plan has not been resubmitted, so we cannot verify this change was made.

Response: Please see the attached O&M Plan that has been updated to include procedures for street sweeping and deep sump catch basins. To prevent a potential future conflict between the city-wide SOPs (once they are finalized) and the specific procedures for this project, it is noted that the most conservative maintenance listed in the two documents will be performed. In addition, please note that the long-term maintenance plan and O&M plan have been combined into one document.