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May 25, 2018

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

RE: Nitsch Project #9972
Tarkiln Hill Road &
Kings Highway Improvements
New Bedford, MA

Dear Mr. Dixon:

This letter is in regard to the proposed road and drainage improvements along Tarkiln Hill Road and Kings Highway in New Bedford, Massachusetts. Nitsch Engineering has reviewed the following revised documents for compliance with the Massachusetts Department of Environmental Protection (MassDEP) Stormwater Management Standards:

- Plans entitled "City of New Bedford, Department of Public Infrastructure, Tarkiln Hill Road Drainage Improvements, Notice of Intent Plans," revised May 2, 2018;
- Soil Boring logs with location plans, prepared by CDM Smith, dated April 20, 2018; and
- Response to comments, no date.

The proposed project was submitted in two components designed by two different entities. Road Improvement plans, which include geometric alterations as well as stormwater management improvements, were designed and prepared by CDM Smith. The Stormwater Report was also prepared by CDM Smith. Offsite stormwater improvements and wetlands alterations and mitigation were designed by the New Bedford Department of Public Infrastructure. Not all of the plans and supporting information submitted for the first review was submitted for the second review. Therefore, the vast majority of comments were not addressed.

Below are our comments on the proposed project, regarding stormwater management only:

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

2. The wetlands mitigation area is located approximately 5,500 square 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 groundwater 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 9. 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.

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, no Attachment D was provided.

4. The proposed project provides limited stormwater treatment. The majority of the improvements are only treated by deep-sump catch basins which provide 25% Total Suspended Solids removal. There are three BMPs proposed including two bioretention basins and one water quality swale. Although the TSS removal forms submitted with the Stormwater Report state that the bioretention basins will provide 90% TSS removal, we feel that is high. The Standards state that bioretention basins will provide 90% TSS

removal if adequate pre-treatment is provided. There is no pretreatment provided to these small basins. DPI has responded that the design of the basins has been revised to include sediment basins. However, those plans were not provided for review, so we cannot verify this update, nor do we know if the sizing of the sediment basins is appropriate.

5. The bioretention basins treat approximately one (1) acre out of the six (6) acres within the project area and additional 24 acres outside of the project area. Therefore, the 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.

6. 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.

7. The Stormwater Report states that the cumulative TSS removal for the entire project is 30%. This assumes that the bioretention basins provide 90% TSS removal. Therefore, we feel the actual cumulative TSS removal rate is somewhat lower. DPI has stated that additional water quality treatment has been provided. However, plans showing these changes were not submitted.

8. Additional soil borings were performed in close proximity to the proposed water quality improvements. The results of the soil borings did not account for seasonal high groundwater. The Stormwater Management Report states that the results of the test holes do not give an accurate representation of soils conditions and seasonal high groundwater. We recommend that more accurate groundwater information be obtained that shows seasonal high groundwater to verify that adequate separation between seasonal high groundwater and the bottom of the facilities exists.

9. 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.

10. The Applicant has stated that the bioretention basin detail has been updated to provide additional soil media. However, the plans prepared by CDM Smith were not resubmitted, so we cannot verify that the detail has been revised.

11. 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.

12. 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.

13. 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.

14. The Long-Term Maintenance Plan refers to the Draft Department of Public Utilities Standard Operating Procedures regarding maintenance. The Standard Operating Procedures should be provided to insure they comply with the Standards.

15. 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 Plan has been updated. However, the Operations and Maintenance Plan has not been resubmitted, so we cannot verify this change was made.

If you have any questions, please call us at 617-338-0063.

Very truly yours,

Nitsch Engineering, Inc.

Scott D. Turner, PE, AICP, LEED AP ND
Vice President, Director of Planning

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