

December 11, 2015

Town of Norfolk Zoning Board of Appeals
c/o Mr. Ray Goff
Town Planner
1 Liberty Ln
Norfolk, MA

**Re: Peer Review Services
Boyde's Crossing 40B Project - Site Plan Review**

Dear Board:

Weston & Sampson is pleased to provide this letter report related to our review for the Zoning Board of Appeals (ZBA) Civil portion of the Comprehensive Permit submission for the proposed Boyde's Crossing 40B development on Main Street in Norfolk, MA. The purpose of the review is to enable the Board to determine to what extent the proposed Project meets Town of Norfolk's Zoning regulations. The proposed Project is classified as a 40B Project and does not need to comply with all of the Town's requirements.

Weston & Sampson (WSE) conducted a review of the following materials as submitted to the Planning Board provided by the Town Planner:

- Site Plans for Boyde's Crossing in Norfolk, Massachusetts, prepared by: Outback Engineering, Inc. dated:
- Preliminary Drainage Report, prepared by: Outback Engineering, Inc. dated: November 11, 2015
- Supplemental drainage information.

Site Plans

Site Plan Review

1. Site Layout, Parking and Circulation

- a. Parking layout dimensions (9'x19') are **acceptable**
- b. Number of parking spaces required by zoning, based on 1.5 spaces per dwelling unit, other than a single family dwelling, is 60 and the number of spaces supplied is 103, therefore parking space count appears **acceptable**
- c. Handicap parking layout and dimensions and < 2% grade appears to be **acceptable**, however, according to ADA, the number of handicap parking spaces required for 101-

150 total parking spaces is 5 and only 3 are supplied. **Proponent needs to add another two handicap spaces per federal ADA regulations.**

- d. Center aisle width of 24' for the access driveway from Main St appears to be **acceptable**.
- e. The 20' aisle two-way roadway proposed for the loop road is not in line with the 24' Town requirement. However, given the low volumes and speed and the fact that the loop road is actually an access driveway and has 12" Cape Cod berm on at least one side, the perceptual width is 21'-22' and appears to be **acceptable**. The proponent should consider adding "No Parking" signs where there are no formal parking cutouts or the 20' width will not enable two vehicles to pass each other, particularly in the winter when snow banks are lining the edge of road.
- f. The proponent should confirm that two dumpster locations are adequate for this site.
- g. The meandering 5' wide sidewalk is a nice amenity.
- h. Proponent should confirm that the amount of snow storage areas is sufficient for this site.
- i. The sight distance at the entrance appears adequate as long as the proponent keeps the site retaining wall to less than 2.5' high at the entrance to allow sight access to Main Street in both directions.
- j. The bus shelter should be designed and located so as not to interfere with the site entrance sight distance.
- k. The Proponent should consider some sort of berm at the entrance to the site to keep Main street stormwater flow out of the site.
- l. The pavement section does not adhere to the Town subdivision Standards. However, a base of 4" dense graded crushed stone over 8" of gravel borrow with 4" of hot mix asphalt on top should stand up adequately in a residential access driveway.
- m. The grading of the roadway segments appears to be appropriate and within reasonable slope ranges, similar to those required by the Town.

2. Utilities

- a. The 8" water main should be adequate to supply water to the site, subject to approval by the Norfolk Water Department regarding supply and pressure requirements.
- b. The 8" sewer main should be adequate to convey site sewer to the three on-site systems.
- c. The on-site soil absorption system (SAS) components (system sizing, pump sizing, etc) will require approval by the Town Health Department prior to construction. No design calculations were submitted with this package.
- d. The general details for the site utilities appear adequate.
- e. There is no site lighting layout, details or light level drawings in this package as usually required by the Town.

3. Planting

- a. There are no planting plans and the proponent has asked for a waiver of the tree requirements of the Town indicating that a landscape plan will be provided.

Preliminary Drainage Report, Accompanying Calculations and Supplemental Information

The impact land development has on a drainage basin is a critical concern for tributary communities. Concerns center on stormwater quality and quantity. Stormwater quality and quantity are both directly impacted by the percentage of pervious and impervious land cover within a watershed.

Pervious land cover, such as grass, soil, and woods, decrease the rate of stormwater runoff, while impervious land cover, such as pavement and buildings, increase the rate of stormwater runoff from a storm event.

The proposed Coles Way Development Project, as presented for our review, will not introduce additional runoff from the site to the surrounding watershed. The post-development flows are slightly smaller than the pre-development flows due to the proposed stormwater BMP's and flow attenuation.

Massachusetts Stormwater Management Standards Review

The Applicant has submitted a review of all 10 Stormwater Standards. WSE has provided comments on the Project's compliance with each of the Standards below, based on the provided information. The Drainage Report and accompanying information are preliminary and will be finalized at the Final Design stage of the Project. The Project will need to submit the Final Drainage Design and Report to the Town of Norfolk Conservation Commission for their review. The Project is a new development and must comply with the 10 Stormwater Standards, as applicable.

Based on the information provided, the Project does appear to comply with all 10 Standards.

The Applicant has provided a description of the Project's compliance with all 10 Standards, however, *the DEP Stormwater Checklist has not been stamped and signed by a registered MA Professional Engineer. A stamped/signed copy of the Final Stormwater Checklist should be submitted to the ZBA for their review.*

Standard 1 - No New Untreated Discharges – No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

Upon review of the Preliminary Drainage Report and Site Plan the project ***does appear to be in compliance with Standard 1.*** The Project is utilizing various combinations of deep sump catch basins, sediment forebays, water quality swale, water quality inlet, underground storage, pervious pavement, extended dry detention basin, and an infiltration bed to treat the runoff before discharging. The Stormwater Management Report TSS Removal Worksheets calculate the proposed TSS removal for each BMP train. The BMP trains are shown as removing a minimum of 80% TSS.

Calculations have also been provided for sizing the required armoring for preventing scour at each of the two outlets.

Standard 2 - Peak Rate Attenuation – Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.

Upon review of the Preliminary Drainage Report, Site Plans and hydrologic modeling computations the project ***appears to be in compliance with Standard 2***. The Pre and Post Conditions Summary Table indicate peak discharge rates for existing and proposed conditions that show a net discharge rate reduction for the 2-year, 10-year, 25-year, and 100-year 24-hour storm event as required. An analysis for the 50 year storm event should be completed and submitted with the final drainage calculations, as required by the Town. The rainfall amounts used in the calculations for each storm should match the Town's stated rainfall amounts for the specific design storms. The 10-year storm rainfall amount used in the analysis differs from the Town's listed rainfall amount.

The reduction from pre-development to post-development flows is attributed to flow attenuation through the proposed BMP's.

Standard 3 - Recharge to Groundwater – Loss of annual recharge to ground water shall be eliminated or minimized through the use of infiltration measures.

Upon review of the Stormwater Drainage Analysis, Site Plans, hydrologic modeling computations, BMP sizing data, recharge volume requirements, and recharge capture area adjustment, the project does ***appear to be in compliance with Standard 3***.

The Project is providing the required recharge volume in the infiltration basin based on the total impervious area of the site. The entire impervious area is not routed to the recharge areas, but the required volume is increased/corrected for the percentage of impervious. The Project is routing the runoff from approximately 90% of the impervious areas to the recharge areas.

The drawdown time for the recharge areas are less than the required 72 hours.

The Project states that a Groundwater Mounding Analysis has been prepared, but this was not included in the information provided to WSE. WSE cannot comment on the validity of the analysis.

Standard 4 - Water Quality – Stormwater management systems must be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS)

Upon review of the Stormwater Management Report, Site Plan, hydrologic modeling computations, BMP sizing data, and TSS calculation worksheets, the ***project does appear to be in compliance with Standard 4***.

The Project incorporates stormwater BMP's including utilizing various combinations of deep sump catch basins, sediment forebays, water quality swale, water quality inlet, underground storage, pervious pavement, extended dry detention basin, and an infiltration bed to treat the runoff before

discharging. The Stormwater Management Report TSS Removal Calculation Worksheets calculate the proposed TSS removal for each BMP train. All BMP trains are shown as removing more than 80% TSS.

The Project is providing the required Water Quality Volume through the various BMP's utilized on the Project. Calculations are provided.

Standard 5 –Land Uses With Higher Potential Pollutant (LUHPPL)

Upon review of the Stormwater Drainage Analysis and Site Plans, the project does not appear to be a LUHPPL. The ***project appears to be in compliance with Standard No. 5.***

Standard 6 –Area of Critical Environmental Concern (ACEC)

Upon review of the Stormwater Management Report and Site Plan, the project does not appear to be in an ACEC and thus ***not applicable to Standard 6.***

Standard 7 –Project Classification –Redevelopment Project

Upon review of the Stormwater Management Report and Site Plans, the ***Project is not a redevelopment Project and Standard No. 7 is not applicable.***

The project is required to fully comply with all 10 Stormwater Standards.

Standard 8 – Construction Period Pollution Prevention Plan– Erosion and Sedimentation Controls

Upon review of the Site Plans, the project **does not appear** to be in compliance with Standard 8.

The Project is covered by a NPDES General Permit. A SWPPP will be submitted before land disturbance has begun.

An erosion and sediment control plan has not been submitted.

The Erosion and Sediment Control Plan should include:

- Erosion Control Barriers
- Inspection Schedule for Erosion Control Measures
- Catch Basin Inlet Protection – For Sediment Inflow Protection
- Stabilized Construction Entrance.

Standard 9 – Operation and Maintenance Plan

Upon review, the ***project does not appear to be in compliance with Standard 9.*** An Operation and Maintenance Plan has not been developed and submitted. The Project has stated that the O&M Plan will be submitted with the Final Drainage Report.

The Long-Term Operation and Maintenance Plan should include:

- Party responsible for operation and maintenance
- Maintenance requirements
- Maintenance of Vegetative areas
- Stormwater Maintenance Measures for Stormwater BMP's.

Standard 10 – Prohibition of Illicit Discharges

Upon review of the Stormwater Management Report and Site Plan, the ***project does not appear to be in compliance with Standard 10***. An Illicit Discharge Statement is not provided, but the Project has stated that this will be submitted with the Final Drainage Report

General Comments

A general design review was performed on the drawings and waivers requested. Our comments regarding the waivers are only our opinion and we defer to the Board for actual resolution. The following summarizes our general thoughts:

The proponent has waived most of the Town regulations listed in the Town Subdivision Regulations and Zoning Regulations due to this project being constructed under MGL. Ch 40B. Our comments regarding many of the technical aspects of the project compare the Town standards with those utilized on this project. In most cases the proponent has utilized standards by DEP or MassDOT and has come very close to the intent of the Town standards. Some of the items such as the length of a dead end or cul-de-sac have apparently had input from the Town Fire or Police Department personnel for approval. However, we have not seen any written evidence of this. Many of the waivers sought note that the proponent will comply with standards of DEP or other appropriate federal or state agencies. This in general seems appropriate however; the ZBA will have final comment on this. Many of the standards requested to be waived are Town Planning Board standards and the Planning Board has no jurisdiction over a MGL. Ch 40B project. Standards imposed by the Town Conservation Commission will need to be adhered to and many of the items we look at in a development of this type will be designed for Con Com approval and we will defer to them for comment.

Other general comments include:

1. The porous pavement system appears to adequately serve the site and based on the HydroCAD model will help keep the post-construction flows under the pre-construction flows.
2. There is no erosion and sediment control details or locations on the plans.
3. The proponent appears to have exceeded the minimum zoning dimensional lot requirements of the Business B-1 District (Outside Core).

CONCLUSION

This project is being built under MGL Ch 40B, and as such the proponent is not bound by many Town Standards. In reviewing the general site details and information it appears that, although the Town standards are not utilized, that the proponent has utilized design standards that appear to adequately serve the Town.

The proposed Boyde's Crossing 40B Site Development does not currently appear to be in compliance with the Town of Norfolk Regulations, including the MADEP Stormwater Standards contained in the Massachusetts Stormwater Handbook. The Drainage Report is preliminary and the Final Design should show compliance with the items identified above. Based on the preliminary design, the Project should be able to comply with all 10 Stormwater Standards in the final condition, unless the design is materially changed. It appears that the standards noted above that are in non-compliance may be easily become in compliance when the final designs are completed.

Weston & Sampson appreciates the opportunity to present our findings. If you have any questions or require additional information please call me. I may be reached at 978-977-0110x7456.

Very truly yours,

WESTON & SAMPSON



Laurence F. Keegan, Jr., PE
Team Leader

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