City of Annapolis
DEPARTMENT OF NEIGHBORHOOD & ENVIRONMENTAL PROGRAMS
145 GORMAN STREET, THIRD FLOOR, ANNAPOLIS, MARYLAND 21401
ANNAPOLIS (410) 260-2200 • FAX (410) 263-9158 • TDD - Use MD relay or 711 • www.annapolis.gov

Chartered 1708

April 15, 2015

Terry Schuman, P. E.
Bay Engineering, Inc.
2661 Riva Road, Building 800
Annapolis, MD 21401

RE: Review of the April, 2015 Forest Conservation Plan (FCP), Annapolis Townes at Neal Farm

Dear Mr. Schuman,

The Department of Neighborhood and Environmental Programs has the following comments on the Forest Conservation Plan for Annapolis Townes at Neal Farm:

1. Sheet 1:
   Make the following changes to the Forest Clearing Justification:
   Existing Site Conditions: All stands are priority forest. Remove any language to the contrary. Include that replanting will be done to preserve the vegetated steep slopes and to help with controlling invasive species.
   Project History: The total area of forest to be cleared is 0.63 acre (from the Forest Conservation Worksheet). Use that number throughout the Forest Clearing Justification not 0.46 acre.
   Include that 21 trees (2" in diameter, native, at least seven large canopy trees) will be planted for the removal of trees 24" and greater. Include that supplemental tree planning along the forest edge to aid in invasive species control of adjacent forest as well as supplemental tree planting in open spots in the existing forest will be done.
   B. Why these areas cannot be disturbed.
   Add that the step pool conveyance system uses the existing topography as much as possible. Include documentation that the FEMA floodplain area will not degrade as a result of the additional water volume from the step pool conveyance system.

2. Sheet 7:
   Show all trees listed under the TPAK on sheet 4, 5, and 6.
   All tree protection fencing will either be chain link fencing or super silt fence (in root prune trench). No welded wire fencing can be used for that purpose. Please change TPAK accordingly.

Make the following changes to TPAK (based on field notes):
106: use filter log for sediment and erosion control
108: use filter log and super silt fence for sediment and erosion control; silt fence will not be keyed in
118: use filter log for sediment and erosion control
142/143/144: recommend removal
126/184/185/200/201/202/275: selective removal

3. Sheet 8:
   Make the following changes to the Tree Preservation Specifications:
   1.1: add "and City Environmentalist"
   1.4: add "and City Environmentalist"
   1.5: add pre-construction meeting "with the City's Environmentalist"
   1.6: add "City Environmentalist's" approval
   3.2: all tree protection fencing shall either be chain link fencing (3' high, round metal posts at least every 10') or super silt fence (in root prune trench)
   3.4: if no root pruning will be done in the critical root zones of trees impacted by the proposed work then filter log (12" diameter minimum) and silt fence or tree protection fencing will need to be installed
   3.5: add "City Environmentalist's" approval
   4.1: add by the "City's Environmentalist"
   4.6: what is root pinning? Paving removed: what does that refer to?
   6.1: add "quarterly" reports; quarterly reports to the owner, civil engineer, and "City's Environmentalist"
   8.4: and "City's Environmentalist"
   10.3: project arborist and "City's Environmentalist
   12: by the civil engineer and "City's Environmentalist"; delete the fire hydrant connection, in the City of Annapolis that is not an option; with the civil engineer "and the City's Environmentalist"
   14.2: by the civil engineer "and the City's Environmentalist"
   14.4: with the contract arborist "and the City's Environmentalist"

   Make the following changes to the Typical Chain Link Tree Protection Fence:
   2: delete welded wire
   3: with approval "from the City's Environmentalist"

   Make the following changes to Detail C-9:
   The understanding was that silt fence with filter log would be installed in the area near tree 108 and no keying in would be necessary. Detail C-9 shows keying in of the silt fence.

   Make the following changes to the Forest Conservation Act Variance Request:
   ST-22: The tree is not located in the access road to the site. Change the variance accordingly. Answer questions 4 a, b, and c on page 3-6 of the State Forest Conservation Technical Manual, Third Edition, 1997.

Stormwater Management:

Computations and Plans

1. No Drainage area maps with points of interests provided in computations.
2. On page 5, in the CpV section of the Stormwater Management Summary Table the Outfall #2 which is primarily being treated by the step pool conveyance system and Outfall #4 which is primarily being treated by the storage trench are shown. The drainage areas associated with these outfalls are 3.98 and 1.55 acres respectively. The storage trench is upstream of the step pools and appears to be acting as a pre-treatment area for the step pools based on the stormdrain system shown on the plans attached to the project. How are the drainage areas for the step pool and the storage trench 2.43 acres different? The only area contributing to the step pools that is not contributing to the storage trench is the slope on which the step pools are located.
3. On page 13 of the computations, the runoff coefficient Rv is shown to be 0.37. This was obtained using I=35% and not 31.6% as indicated on the sheet. Using 31.6% for I would yield 0.33 for Rv.
4. The previous comment would change the target ESDv. Using Pe = 1.6, Rv = 0.33 and Area = 333,265 SF, ESDv = 14,663.66 CF. Please note, using Pe = 1.6, Rv = 0.37 and Area = 333,265 SF, ESDv = 16,441.07 CF, not 16,218.90 CF as shown in the report.
5. Qe and WQv would also change using Rv =0.33.
6. On page 14, the Environmental Site Design Summary sheet is shown. This page shows the entire site as one drainage area and the entire report indicates only one drainage area. Additionally, drainage areas area not indicated until page 102 of this report. This will impact the design of the structural practices.
7. On page 14, the computation for Pe provided should equal 1.30 and not 1.32 as shown.
8. In the rain garden computation sheets with a surface area of 19 SF, the media storage should equal 12.69 and not 12.67 as shown.
9. On page 98, the design of filterra #1 shows the ESDv = 1,340 CF. Using Pe=1.00 in, Rv = 0.76 and A = 21,076 SF, the ESDv = 1,335 CF.
10. On page 99, the design of filterra #3 shows the ESDv = 585 CF. Using Pe=1.00 in, Rv = 0.63 and A = 11,184 SF, the ESDv = 587 CF.
11. On page 99, the design of filterra #4 shows the ESDv = 1,116 CF. Using Pe=1.00 in, Rv = 0.75 and A = 17,820 SF, the ESDv = 1,114 CF.
12. On page 99, the design of filterra #4 shows the box to be 6x12. In the table below, for areas 0.34 to 0.42 acres the box should only be 6x10.
13. On page 100, the design of filterra #5 shows the box to be 6x12. In the table below, for areas 0.33 to 0.26 acres the box should only be 6x8.
14. On page 100, the design of filterra #6 shows the box to be 6x12. In the table below, for areas 0.34 to 0.42 acres the box should only be 6x10.
15. On page 101, the design of filterra #7 shows the box to be 6x12. In the table below, for areas up to 0.17 acres the box should only be 4x6.
16. On page 101, the design of filterra #8 shows the box to be 6x12. In the table below, for areas up to 0.17 acres the box should only be 4x6.

17. On page 102 and 103, it was not very clear where the majority of the values presented are coming from. For example, in the Drainage area section on page 102, there is a value for CN = 88. It is not clear where this value comes from at this point of the document. A CN of 88 is almost equivalent to a gravel roadway in C soils. This value was also noted to be in the TR-55 for developed conditions. How was this value obtained?
18. Page 104 is very difficult to read with the text being very small and blurry. In the previous submission (July, 2014), this page was an 11X17 sheet.
19. The TR-55 for the developed conditions shows 5 Drainage Areas on page 110. All drainage areas have an increase in the CN from the existing drainage areas. The Target CN for woods in good conditions for C soils is 70. This shows that ESD to the MEP to obtain woods in good condition is not being met in any of the proposed drainage areas. How were these values for the CN developed? Was there any reduction to the CN based on the ESD practices installed? Page 113 does not seem to indicate that ESD practices were not considered.
20. Without drainage area maps the time of concentration computations cannot be checked and verified.
21. On plan sheet 5 of 8, diversion fence is being shown around the area of the step pools. What is the purpose of this diversion fence? Typically diversion fence is used to divert runoff from entering a site or leaving a site without going to another erosion and sediment control structure. This application does not clearly show which way the runoff is approaching the diversion fence. Is the runoff coming from the adjacent slopes into the step pool area or is the diversion fence to prevent runoff from within the step pool area to leave? If it is the later how is the runoff supposed to leave this area? Will the contractor have to pump the runoff captured in this area through a filter bag further down gradient?
22. The silt fence is shown to be running perpendicular to the contours. This may cause the concentration of runoff.

If you have any questions please contact me.

Sincerely,

Frank Biba, AICP, LEED AP
Chief, Environmental Programs
Dept. of Neighborhood and Environmental Programs
410 263-7946
fjb@annapolis.gov

cc: Tom Andrews, City Manager
Mike Leahy, City Attorney
Maria Broadbent, DNEP Director
Pete Gutwald, P&Z Director