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Planning Board and Conservation Commission
Town Hall
40 Center Street
Fairhaven, MA 02719

RE: Lewis Landing, Fairhaven, MA.
Proposed Multi-Unit Residential Development
Huttleston Ave.

Dear Planning Board and Conservation Commission Members:

GCG Associates, Inc. has reviewed the following information for the Lewis Landing Multi-Unit Residential Development off Huttleston Avenue in Fairhaven, MA with respect to stormwater and Stromwater related requirements under 310 CMR 10.00 Wetlands Protection Act Regulations.

Plan References: "Lewis Landing, Fairhaven, MA. Proposed Multi-Unit Residential Development, Huttleston Ave., Fairhaven, MA prepared by Prime Engineering, Inc. dated September 9, 2019, last revised January 28, 2021.

Pre-Development and Post-Development Stormflow Maps, prepared by Prime Engineering, Inc. dated September 9, 2019.

Documents: Narrative and Stormwater Report for Notice of Intent and Special Permit prepared by Prime Engineering, Inc. dated September 26, 2019 last revised January 28, 2021.

Response to Comments Letter, prepared by Prime Engineering, Inc. dated January 28, 2021

Based upon our review of the above information, we offer the following general comments and comments with respect to compliance with Town Bylaws: Chapters 192 – Wetlands; 194 - Stormwater Management, Illicit Discharge, Soil Erosion, Sediment Control By-Law; 198-31.1 – Zoning - Stormwater Management and 310 CMR 10.00 Wetlands Protection. The numerical section of the regulations is referenced at the beginning of each comment unless it is a general comment. GCG latest comments in "**Bold**".

GENERAL PLAN AND DEVELOPMENT COMMENTS

The following are general comments with respect to the plans and development of the project.

1. This is a vacant parcel located at the south side of Huttleston Avenue (U.S. Route 6) across street from New Boston Road as identified as Assessor's Map 31 Lots 115A & 117C. The parcel consists of 2.463+/- acres. **No response required.**
2. The applicant has filed a Notice of Intent for a Multi-Unit Residential Development consists of four 3-unit buildings (total 12 dwelling units) and associated pavement 16 spaces parking lot and utilities. The proposed work area is over 1 acre and requires filing an US EPA - NPDES permit and associated SWPPP. (NPDES NOI shall be filed 14 days prior to construction start.) **Applicant is aware of the NPDES requirements, no response required.**
3. The proposed work limit also exceeds the Land Disturbance Permit (Chapter 194) threshold and requires filing a permit with the Fairhaven Board of Public Works. **Filing with BPW as exempted project per 194-4. A.3 instruction, no response required.**
4. The proposed multi-family site development in RC Zoning District requires a Planning Board Special Permit approval per Chapter 198-29. Which requires site design in compliance with Chapter 198-31.1 Stormwater management standards. Hence, stormwater management design is being reviewed to meet 198-31.1 requirements. **No response required.**
5. The project is located within Zone X, Area of Minimal Flood Hazard, (FIRM 25005C0413F, effective 7/7/2009), two series (A1- A-30 and B-1 to B-6) of wetland resource area were identified on the property and requires filing a Notice of Intent with the Fairhaven Conservation Commission and MassDEP. **No response required.**
6. There is no NHESP estimated habitats of rare wildlife or rare species identified in the site vicinity per MassGIS. **No response required.**

PLAN SET

Cover Sheet: Planning Board waivers requested for stormwater management regulations are as follows. The applicant has requested waiver for "198-31.1(C)(2)(g)[6]. Requiring basin and ponds to have 4:1 side slopes and sediment forebays to have 3:1 side slopes." The proposed pocket wetland does not fit the specified water quality BMPs design listed under 198-31.1(C)(4)(a), (b), and (c). This constructed pocket wetland is based on the Masschusetts Stormwater Handbook (MSH) Constructed Stormwater Wetlands BMP requirements. 198-31.1(C)(3)(d) allows "Other water quality BMPs may be approved, provided the pollutant removal rate meets or exceeds the requirements of Section 1 above." Based on the MSH pollutant removal efficiencies, the constructed pocket wetland BMP meets the requirements of 198-31.1(A)(1) standards except for the flooding requirements, (additional clarification or calculations are needed, see detail comments below). MSH does not require a minimum side slope of a constructed wetland, since the wetland maintenance requirement is once every 10 years, the side slope is not critical. However, MSH does require sediment forebay to have a 3H:1V side slopes. The proposed forebay volume was sized by Fairhaven Stormwater standards (0.25" times the impervious area), which exceeded the MassDEP sediment forebay sizing (0.1" times the impervious area) requirements. The applicant has proposed 2:1 side slopes with one side with 4H:1V slope for access. There is room in the area to provide the required 3H:1V slope, if the Board deems necessary. The wetland sediment forebay requires maintenance cleaning once per year, (in comparison, a standard sediment forebay requires cleaning 4 times per year.) Therefore, granting this waiver should not have any adverse impact to the design. The forebay side slope 3H:1V is required under MSH, granting the forebay side slope waiver does not relief the MassDEP's authority to superseded Order of Conditions. **See detailed comments below.**

Drawing Sheet -1 – Existing Conditions Plan.

1. Plan shows three drainpipes (15" (capped) and 18" inlets and 18" outlet) connected to an on-site dilapidated drainage manhole (DMH) within the wetland resource area. The 15" drainpipe appears to collect Huttleston Avenue surface runoff through a pair of catch basins located in front of development site and two 18" drain lines enter and discharge to the DMH without a benefit of an easement. GCG recommends obtaining an easement to preserve the right of the existing drains. An easement should be required as part of the approval conditions. Fairhaven DPW should be notified during drainage installation to determine the condition of the 15" capped pipe and uncap if desired with the easement right. **GCG recommends the easement be widened to 20-feet to accommodate actual trench construction.**
2. Additional soil testing should be performed at the proposed infiltration chamber system location to determine soil conditions, ESHGW, and depth of excavation and/or replacing unsuitable material. **Applicant has requested additional test holes be performed prior to or during construction as part of the approval conditions. The request is reasonable. GCG recommends the project engineer/soil evaluator to perform the soil testing at the beginning of construction and verify the ESHGW and soil material.**

Drawing Sheet 2 – Site Layout and Landscaping Plan.

1. Trees and shrubs have been proposed along the constructed pocket wetland's and a 10' wide access path, which meets 198-31.1(C)(2)(g)[6] – "ten-feet wide bench" requirement. MSH requires a 15' wide maintenance access. The plants may require removal and replacement during the once in every 10-year wetland maintenance. **The applicant will be repsonsible for replacing and replanting vegetation as needs during maintenance.**

Drawing Sheet 3 – Grading and Utilities Plan

1. MDEP – Standard Design Guideline for Shallow UIC Class V Injection Wells. The proposed roof drain chamber infiltration practices are considered UIC Class V Well by US EPA and required to comply with the MassDEP setback requirements. The proposed 6-unit chamber between building #2 and building #3 needs to be relocated northward outside the 50' BVW setback and 15' setback to downhill slope. Maintain the 10' building #3 foundation setback. The 18-units chamber system needs to be relocated to the east side of building #4 to meet 50' setback to "open, surface or subsurface drains which intercept seasonal high groundwater table," (proposed pocket wetland), 10' setback to water supply line and 15' setback to downhill slope (proposed pocket wetland side slope). **GCG recommends revising the minimum spot grade at the top of chambers within the pavement to 66.58 to meet the manufacturer's required 10" minimum gravel cover plus pavement thickness over the system.**
2. MSH - Proposed infiltration basin is within the 50' BVW (surface water of the commonwealth) setback. **Applicant requests a waiver for the 50' setback requirements. This is a MSH requirements, Planning Board and/or Conservation Commission waiver does not guaranty MassDEP's action toward the waiver. Alternately, there is room to pull back the infiltration basin outside the 50' setback by relocating basin toward to Huttleston Avenue.**

3. MSH – 65% Rules. Require Minimum 65% of the total impervious area discharge to infiltration system. A minimum of 8,510 s.f. of pavement area (in addition to the roof areas) is required to discharge to infiltration basin. As the pocket wetland (receiving 16,717 s.f. of impervious area surface runoff) outflow discharges to two outlets, at least 50% of the outflow should be discharged to the infiltration basin to meet the 65% requirements to assure sufficient flow being discharged to the infiltration system. **Resolved.**
4. This project has been approved by the Conservation Commission. However, the proposed 30+/- feet of pocket wetland outlet pipe is in the BVW resource area and 25' of pipe and portion the infiltration basin is located within the 25' no disturb area. Conservation Commission approval is required. **Subject to Conservation Commission approval.**
5. Verify top of pipe calculations, the 4" pipe appears to be closer to the street, which improved the separation between pipes. **Resolved.**
6. Re-sizing infiltration basin per pre- and post- rate and volume, see additional drainage report comments below. **Resolved.**
7. 198-31.1(C)(2)(l) - Fence enclosure for the stormwater basin may be required. **A waiver has been requested. The regulation requires a post & rail fence with pressure treated or locust posts, with a backing of plastic coated wire fencing and shall further inhibit access by a planting of thick shrubs, when the basin is in close proximity to the residential units. A wooden guardrail, and dense shrubs along building 4 have been proposed to dissuade access to the constructed pocket wetland. Since there is no definition of "in close proximity to the residential units", Board decision is required. Granting this waiver should have no impact to the function of constructed pocket wetland.**
8. 198-31.1(C)(3) - Applicant should request a waiver for 198-31.1(C)(3), which also references to selection of (C)(4)(a) through (c) and inquire Board approval of the proposed pocket wetland under subsection (C)(3)(d). It is unclear this should require a waiver since it specified "other water quality BMPs may be approved" in its subsection (d). GCG recommends a waiver request to cover any disputes. **Approval of the constructed pocket wetland through subsection (C)(3)(d), (not necessary a waiver) has been requested. GCG concurs that the constructed pocket wetland is a MassDEP approved water quality BMP, which meets requirements of Section 1 of the Design Standards.**
9. Show drainage swale bottom width. **Resolved.**
10. Infiltration basin without tree clearing means the basin will not be maintained according to MDEP requirements. GCG recommends infiltration basin be cleared and finish with loam and seed. As required by MDEP, infiltration basin inspection for the health of the turf, and requires at least twice per year, mow the buffer area, side slopes and basin bottom. **Resolved.**

Drawing Sheet 4 – Erosion Control Plan

1. Erosion control should be provided within the no disturb buffer and BVW for the 12" pocket wetland outlet pipe installation with Conservation Commission approval. **Additional erosion control may be required and modified under NPDES and associated SWPPP requirements. Adjust the width (5 feet width proposed) of the erosion control along the 12-diameter drainpipe as necessary during construction.**

2. Additional erosion control may be required through NPDES and SWPPP prior to start of construction. **Applicant is aware of the NPDES and SWPPP requirements.**

Drawing Sheet 5 – Detail Sheet-1

1. Pocket Wetland Outlet Control B Detail – Show 9" height (or show elevation) of the 24" wide outlet. **Resolved.**
2. Orifice Plate Detail – show 24'W x 9"H structure wall opening above the orifice plate. **Resolved.**
3. Replace Outlet Control Structure A (proposed 9 outlets distribution box wrapped in filter fabric) with a standard drainage structure or concrete headwall with trash rack protection and set in the earth embankment. **Resolved.**

Drawing Sheet 6 – Detail Sheet-2

1. Schematic Cross Section of Storm Water Treatment System – revise the '3" orifice Inv = 61.00' label to match the 1" orifice Inv = 61.60 (2 locations) design. **Resolved.**

Drawing Sheet 7 – Architectural

1. No comment

STORMWATER REPORT COMMENTS

1. Pre-development HydroCAD report 1.221 acres watershed appears missing an area of 0.275 acres. The post-development's 1.500 has been verified to be correct. **Resolved.**
2. Drainage report pages 5 and 6, Pre and Post runoff flow and volume comparison tables. Pre-development peak rate and volume columns do not match HydroCAD report. Revise table with item #1 correction. **Resolved.**
3. Clarify the roof drain chamber (model ponds 106, 107, and 108 wye volume, model used 2.5' and 3' diameter, the roof drain detail shown 6" diameter pipe. **Resolved.**
4. 198-31.1(C)(2)(J)[4] - Infiltration area (Pond 110) should be modelled with pond surface area with CN 98. **Resolved.**
5. Roof drain chamber systems and infiltration basin should be sized with draw down time not to exceed 72 hours to accommodate multiple storm events. Based on the Hydrologic Soil Group 'C' soil exfiltration rate, (Rawls 1982 per MDEP). **The 40% stone void volume should be included in the calculations. Increase bottom surface area as necessary to control the draw down time to within 72 hours.**
6. As mentioned in the report and shown on soil test logs, the site consists of a layer of muck at 5' to 7' below surface. Approximately at the depth beneath the proposed chambers. Additional soil test pit should be performed during construction and witnessed by the engineer to verify ESHGW separation. All unsuitable material should be removed and replace with gravel and sand. **Applicant has stated they will replace any unsuitable soil material as determined by the additional soil testing at start of construction.**
7. Verify Constructed Pocket Wetland 4" and 12" outlet pipes length and adjust slope accordingly. **Resolved.**

OPERATIONAL AND MAINTENANCE (O&M) PLAN COMMENTS

1. Temporary Erosion Control should also follow the NPDES permit and SWPPP requirements. **Applicant aware of the NPDES and SWPPP requirements.**
2. Long term O&M plan 4.0 should include:
   Catch basin – inspect and clean grate and sump 4 times per year as required by MSH. This requirement seems excessive.
   Wetland sediment forebay should be cleaned once a year.
   Constructed Pocket Wetland should be inspected twice a year during both the growing and non-growing seasons for the first three years of construction, record observation per MSH Vol. 2, Ch. 2 Pg. 46. Cleaning out sediment in basin/wetland system once every 10 year.
   Remove rain garden O&M, no longer applicable.
   Inspect roof drain inlet (roof gutter system) at least twice a year, remove any debris that might clog the system.
   Include mosquito controls, as necessary. (subsurface chambers meeting 72 hours draw down time and pocket wetland with properly maintained vegetation should not have mosquito breeding issues.)
   Infiltration basin should be inspected twice per year per MSH Vol.2, Ch.2, Pg. 92, At least twice a year, mow the buffer area, side slopes, and basin bottom. Remove grass clippings and accumulated organic matter to prevent an impervious organic mat from forming. **Resolved.**

Summary:

The applicant has requested a waiver for the infiltration basin to wetland setback. The rest of the proposed drainage design meets the intend of the treatments and mitigation requirements. There is potential of roof drain chamber systems draw down time exceeded the 72 hours limit. However, applicant has agreed to perform additional soil testing during construction and there are rooms to expand the systems' bottom surface area as needed.

If you have any questions regarding this matter, please contact our office.

Respectfully Submitted,
GCG Associates

Michael J. Carter

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Project Manager