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September 29, 2020

Mr. David R. Consigli
Milford Zoning Board of Appeals
52 Main St
Milford, MA 01757

Re: The Residences at Stone Ridge, Milford, MA
Review of Comprehensive Permit Application (40B)

Dear Members of the Milford Zoning Board of Appeals:

As requested by the Milford Zoning Board of Appeals (ZBA), Comprehensive Environmental Inc. (CEI) has provided a technical review of the Residences at Stone Ridge Comprehensive Permit (MGL Ch. 40B) application.

Please note that this peer review focuses on environmental, drainage, and traffic aspects of the project. The traffic component of our review was conducted under sub-contract to BSC Group and is included as an appendix to this review letter.

CEI has based the review on the following information provided by the Applicant:

1. "Residences at Stone Ridge – Phase II: Conformance Set" plans, dated 09/14/2020 by The Gutierrez Company and Symmes Maini & McKee Associates (SMMA).
2. Stormwater Management Report, dated 09/14/2020 by The Gutierrez Company and SMMA.
3. Comprehensive Permit Application, dated 06/05/2020, by The Gutierrez Company.
4. Consolidated Order of Conditions, MassDEP #223-0987
5. MEPA Notice of Project Change, dated 04/15/2019
6. Notice of Project Change Certificate (EEA #14127), dated 05/24/2020
7. Response to Request for Permit Modification, Department of the Army, July 3, 2019

CEI offers the following comments based on our review of the materials listed above.

I. Compliance with Good Engineering Practice and Stormwater Management Standards

Based on our review, CEI believes the project design addresses the Massachusetts Stormwater Standards and good engineering practice as follows:

Standard 1: No New Untreated Stormwater Discharges

Subsurface detention basins accumulate runoff and discharge and/or overflow to surrounding wetlands. It appears that Standard 1 is met.

Standard 2: Peak Rate Control

Based on review of the submitted calculations it appears that proposed peak rates do not exceed existing peak rates. However, due to the scale of the sub-catchment delineations on the proposed Drainage Map, CEI is unable to confirm that sub-catchment areas identified drain to the areas provided. CEI recommends that the Applicant submit a drainage map with closer scale for visible sub-catchment boundaries within the limit of work for the proposed activities of Phase II covered in this submittal.

Standard 3: Groundwater Recharge

It appears that the Applicant has provided groundwater recharge calculations that represent the entire subdivided parcel including previously permitted areas (Phase I) and areas of future proposed work that have not been presented in plan submittals (Phase III). This asserts that there will be volumes provided that have not been planned and/or constructed and will have bearing on groundwater recharge requirements.

For the Phase II work proposed in this submittal, basin 5B provides 3,525 cubic feet of groundwater recharge. The total impervious area for the proposed work in this submittal is approximately 325,390 square feet or 7.45 acres. The dominant soil type within the limit of work is HSG B (422). Calculated required recharge for Phase II would be:

$$7.45 \text{ acres} \times 0.35 \text{ inches} \times \frac{1 \text{ foot}}{12 \text{ inches}} = 0.217 \text{ acre} - \text{feet} \times 43560 \frac{\text{square feet}}{\text{acre} - \text{feet}} \\ = 9,465 \text{ cubic feet}$$

The required recharge volume for the work proposed in Phase II is 9,465 cubic feet. As indicated in the table found on page 17 of the Stormwater Report, Phase III proposes an infiltration basin that provides 11,100 cubic feet of storage, while the impervious area for this phase only requires 6,189 cubic feet of volume. It appears that compliance of the proposed Phase II development with Stormwater Standard 3 is dependent on Phase III stormwater controls being designed, approved, and constructed as proposed.

Standard 4: Water Quality

a. Water Quality Volume Calculations

The water quality volume (WQV) calculation was not provided. The 1-inch rule applies to this site and the required water quality volume is 27,115 cubic feet.

$$325,390 \text{ square feet (7.45 acres)} \times \frac{1 \text{ foot}}{12 \text{ inches}} = 27,115 \text{ cubic feet}$$

The Contech separator worksheets provided account for 4.47 acres of impervious area and do not provide treatment for the entire WQV. This standard is not met as a stand-alone for Phase II.

b. TSS Removal

The project site is located within a Zone B Surface Water Supply Protection Zone for a Class A Water Source, as defined per 310 CMR 22.00. However, discharge points DP-1, DP-2, and DP-3 are within the Zone A protection area for the Charles River and Wildcat Pond. As such, any discharge to these points is designated as discharge to an Outstanding Resource Water (ORW). Proprietary separators may only be used as pre-treatment in an ORW. The Applicant cites the use of various swales and a sediment forebay in the narrative, but these were not observed on the plans or in the TSS calculations worksheets. Additionally, infiltration or discharge of runoff from metal roofs is not permitted without pretreatment.

Standard 5: Land Uses with Higher Potential Pollutant Loads (LUHPPL)

Due to the proposed parking lot and garage areas providing 559 parking spaces and the combined traffic data from Phase I, CEI recommends that Phase II also be designated as a LUHPPL. The threshold for which is 1,000 vehicle trips per day. MA Stormwater Handbook guidance prioritizes infiltration for the end-treatment of runoff from a LUHPPL.

Standard 6: Critical Areas

The project is within a critical area, see Standard 4.b. for explanation of direct discharges to an ORW. Discharges to surface waters are treated via proprietary separator before being stored in subsurface detention basins that eventually drain to surrounding wetlands. MA Stormwater Handbook guidance prioritizes infiltration for the end-treatment of runoff into critical areas, in this case an ORW.

Standard 7: Redevelopment

Standard 7 is not applicable.

Standard 8: Construction Phase Erosion and Sediment Controls

Soil stockpile locations were not indicated on the plan set. CEI recommends that the Applicant indicate where temporary soil stockpiles will be kept and proposed erosion control measures, to ensure adequate protection for on-site resource areas. Soil stockpiles may not be stored within wetland resource area buffer zones.

Standard 9: Operation and Maintenance

The Operations and Maintenance (O&M) Plan meets Standard 9. CEI notes that a Stormwater Pollution Prevention Plan (SWPPP) will be required for this site.

Standard 10: Prohibition of Illicit Discharges

The Applicant did not provide methods for detecting illicit discharges with a signed prohibition of illicit discharges statement, nor did they list allowable discharges. Standard 10 is not met.

II. Stormwater Management Design

1. The provided Contech worksheets indicate 3.00 acres of impervious surface that are not accounted for (see Standard 4. a.). Excess flow to a unit may result in failure to adequately treat the volume of runoff being routed through it. CEI recommends that the Applicant review the following table, with acreage calculated via percent impervious area per sub-catchment for the work proposed in this submittal. The sizing of the proposed water quality units should directly correlate to the total impervious area being treated and the required water quality volume calculated for Standard 4.

Sub-catchment area	Total acreage	% Impervious	Impervious Acreage
2.3	0.99	50.93	0.50
2.4	1.92	51.95	0.99
2.5	5.1	40.37	2.04
3.3A	3	78.04	2.34
3.3B	2.49	66.27	1.60
TOTAL			7.47 acres

2. It appears that all three subsurface detention basins overflow or discharge in a 2-year storm. CEI recommends that the Applicant increase infiltration on-site, as opposed to temporary subsurface storage and discharge, as this may have negative impacts on water quality. Additionally, the MA Stormwater Handbook specifies that a new development shall convey up to the 25-year storm. Based on regulatory guidance and the climate trend of increasing rainfall/storm intensity, CEI recommends that the Applicant provide greater volume subsurface structures that infiltrate, to ensure compliance with Standards 1, 3, and 4.
3. Because the provided Drainage Map did not clearly indicate sub-catchment boundaries, CEI was unable to confirm that the placement of catch basins did not exceed one basin per $\frac{1}{4}$ acre of impervious area. Based on the values provided in the HydroCAD model, CEI has determined that the following sub-catchments should have a minimum number of catch basins:

Sub-catchment area	Minimum number of catch basins (per $\frac{1}{4}$ acre)
2.3	2
2.4	4
2.5	8
3.3A	9
3.3B	6
TOTAL	29

Note: This does not include catch basins within the proposed roadway, as CEI could not confirm which sub-catchment conveyed them based on the information provided.

4. It appears that the catch basins within the proposed roadway are not conveyed and treated within the limit of work shown on the provided plans. CEI recommends that the Applicant indicate in more detail which sub-catchments and treatment trains the roadway catch basins interconnect with, between Phase I and Phase II.
5. The proposed infiltration basin would require the removal of 10 (ten) feet of existing soil. No test pit data was provided to ensure proper distance from the groundwater table (see comment III.1).

III. Civil Site Design

1. It appears that the test pit data provided was gathered in 2008. The map submitted shows that the Applicant's design has changed since the test pits were done, placing them in areas where no subsurface structures are proposed. Additionally, the test pits data sheets provided only indicated when groundwater was encountered, not the elevation at which redoximorphic features in the soil indicate high seasonal groundwater (EHSGW). The placement of some subsurface structures or infiltration basin must be a confirmed distance from ESHGW without triggering the need for a mounding analysis and future potential groundwater impacts. CEI recommends that new test pits be conducted in areas where subsurface structures are proposed.
2. While it was mentioned in the O&M, snow storage should occur away from resource area waters. A site-wide BMP map will be required for the SWPPP and designated snow storage areas should be indicated on it, to ensure distance from critical areas.
3. Soil stockpile locations were not indicated on the plans.

IV. Construction Phase Pollution Controls

1. The drainage report and site plans should specify the final destination of any stockpiled material. If the stockpiled material will not be used onsite, the applicant should remove the material according to regulations. Additionally, the plan should specify any proposed practices to stabilize temporary soil stockpiles. If the practices do not provide for routine covering of soils stockpiles with tarps, we recommend a condition of approval that, in the event the specified practices do not adequately control wind and water-borne erosion of the stockpiles, the Town may require the applicant to cover stockpiles at the end of each working day with properly anchored tarps which should remain in place when the stockpiles are not being actively used.

V. Related Environmental Permitting Required for the Project

In addition to the Comprehensive Permit 40B, the Applicant will be required to obtain the following state and federal permits:

1. In compliance with the Massachusetts Environmental Policy Act (MEPA), the Applicant received a Final Environmental Impact Report (FEIR) Certificate in 2008 for a previous development plan for the site, which at the time was proposed as a business park with four buildings. The applicant will be required to submit a Notice of Project Change (NPC) to the MEPA Office for review of design changes associated with the proposed

Phase II residential development. CEI notes that an NPC was submitted to MEPA in April 2019 for Phase 1 of the Residences at Stone Ridge and received a MEPA Certificate requiring no Supplemental EIR for this in May 2019.

2. The proposed project includes permanent impacts to Isolated Land Subject to Flooding as defined under the Massachusetts Wetlands Protection Act (WPA) and will therefore require WPA permitting under jurisdiction of the Milford Conservation Commission (*see additional comments below under VI. Wetland Resource Areas*).
3. A National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) is required from USEPA for construction activities that disturb over one acre of land.

VI. Wetland Resource Areas

Isolated Land Subject to Flooding (ILSF): The proposed project will involve construction of a roadway that will cross Wetland 6, located near the center of the site. This roadway crossing and construction of the roadway retaining wall will result in permanent impacts to ILSF, as defined under the Massachusetts Wetland Protection Act (WPA) Regulations (310 CMR 10.00).

As stated in 310 CMR 10.57(3), when a project involves removing, filling, dredging or altering of ILSF, the issuing authority shall presume that the area is significant to interests specified in 310 CMR 10.57(1)(b). This presumption is rebuttable and may be overcome only upon a clear showing that said land does not play a role in the protection of said interests.

The information provided by the Applicant to date includes no specific discussion related to impacts to ILSF or a rebuttable of presumed significance to the specified WPA interests. CEI's review included the Consolidated Order of Conditions (OOC) dated 1/24/2019 for 80, 100, 200, 300, and 400 Deer Street, which included no documentation of direct impacts to ILSF as proposed for Phase II. CEI notes that it appears possible to avoid or minimize direct impacts to ILSF by realigning a portion of the access road and shifting the location of infiltration basin B-5B slightly to the east. Any proposed wetland impacts not previously reviewed and approved under the OOC will require WPA permitting under jurisdiction of the Milford Conservation Commission

Planting Plan: The Planting Plan presented on Sheet C-151 of the Site Plans includes woody plantings along the margins of Wetland 6. As such plantings would have an ecological support function as adjacent habitat to Wetland 6, CEI notes the following with regard to the species listed in the Plant Schedule on Sheet C-151:

- a. Six (6) bald cypress (*Taxodium distichum*) are intended for planting in the uplands adjacent to Wetland 6. This tree is an obligate wetland species, meaning that it almost always occurs within wetlands under natural conditions (estimated probability > 99%). CEI also notes that Massachusetts is outside of the native range for this species. To improve the likelihood of successful establishment, CEI recommends that this species be replaced with a regionally native tree species with a facultative (FAC) indicator status.
- b. Similar to the comment above, the planting list includes two (2) swamp white oak (*Quercus bicolor*) for the uplands adjacent to Wetland 6. This tree is a facultative wetland (FACW) species, meaning that it usually occurs in wetlands (estimated probability 67% - 99%), but is occasionally found in non-wetlands. To improve the likelihood of successful establishment, CEI recommends that this species be replaced with a regionally native tree species with a facultative (FAC) indicator status.

VII. Traffic and Transportation Impacts

CEI's subcontractor, BSC Group (BSC), has provided a technical peer review of the traffic and transportation impacts associated with the proposed project. The transportation peer review letter (dated July 8, 2020) is attached as an appendix to this letter.

If you have any questions or comments regarding this report, please contact Robert Hartzel at 508-281-5201 or Matthew Lundsted at 508-281-5160.

Sincerely,

Comprehensive Environmental, Inc.



Robert Hartzel, CLM
Principal



Matthew Lundsted., P.E.
Principal

APPENDIX:

Transportation Peer Review
Residences at Stone Ridge Phase II
BSC Group, July 8, 2020

July 8, 2020

Mr. David R. Consigli
Zoning Board of Appeals
Town of Milford
Town Hall
52 Main Street
Milford, MA 01757

RE: Transportation Peer Review

Dear Mr. Consigli:

BSC Group has been retained as a sub-contractor to Comprehensive Environmental Inc., to provide peer review services regarding traffic and transportation impacts for the proposed residential development entitled “Residences at Stone Ridge – Phase II”. The Proponent proposes to construct 296 residential apartment units on the project site, located at 300-400 Deer Street in Milford, Massachusetts. The apartment units will be constructed as part of Phase II of the project and will replace previously approved office space in the overall development program.

BSC Group has performed the peer review based on the following information:

- Stone Ridge Development, Milford, Massachusetts – Change in Use – Apartment Units Memorandum, by TEC, Inc. (TEC) March 16, 2020
- Comprehensive Permit Plans by SMMA dated March 13, 2020
- The Residences at Stone Ridge – Phase II Comprehensive Permit Application dated June 5, 2020, by The Gutierrez Company
- Field visit performed in July 2020

Phase I of the project was recently permitted and includes a 63,000 sf Restaurant Depot and a 242-unit residential development. The Restaurant Depot is currently in operation and the residential development has yet to be constructed. Deer Street serves as the primary driveway into the site and intersects the west side of Cedar Street, approximately 900 feet north of the Interstate 495 interchange.

BSC offers the following comments on TEC’s March 16, 2020 memorandum (the Traffic Memo):

Trip Generation

The Traffic Memo provided a comparison between the approved Phase I trip generation thresholds approved in the Section 61 Finding from the Massachusetts Department of Transportation (MassDOT) issued on March 6, 2009 and an updated estimate for Phase I

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based on counts conducted along Deer Street in September 2019 and based on data provided in the Institute of Transportation Engineers *Trip Generation Manual*. The counts along Deer Street reflect the actual trips generated by the Restaurant Depot. The ITE data was used to estimate the trips expected to be generated by the 242-unit residential development permitted as part of Phase I.

Based on the counts and the estimates, the daily trip generation for Phase I is expected to exceed the previously permitted thresholds by 16 percent. The weekday morning and evening peak hour trip generation for Phase I is expected to be below the previously permitted thresholds by 47 and 30 percent, respectively.

The Proponent has implemented the Phase I traffic improvements, which includes widening of the Cedar Street northbound approach to include an exclusive left-turn lane and widening of the Deer Street eastbound approach to include separate left and right-turn lanes.

1. BSC verified the trip generation for the apartment component of Phase I and concurs with the methodology and estimates. BSC also concurs that the mitigation implemented as part of Phase I will address the traffic impacts of the full build-out of Phase I. No additional mitigation is required as part of Phase I of the project.

The Traffic Memo included an evaluation of trip generation characteristics related to the proposed Phase II development, which consists of the construction of 296 apartment units on the site. The trip generation estimates for Phase II were developed by using data provided by ITE and adding them to the Phase I estimates to provide a cumulative total. When compared to the previously approved trip generation estimates in the Section 61 Findings, the daily trips exceed the threshold by 9 percent and the weekday morning and evening peak hour trips are 53 and 35 percent below the approve thresholds, respectively.

2. BSC verified the trip generation for Phase II and concurs with the methodology and estimates. However, peak hour trip generation for office developments and residential uses have different directional characteristics. The current Phase II development program is estimated to generate 162 exiting trips during the weekday morning peak hour and 168 entering trips during the weekday evening peak hour. The directional peak hour trips exceed the Phase II threshold estimates by 102 exiting trips during the weekday morning peak hour and by 90 entering trips during the weekday evening peak hour. Based on these variations in peak hour directional flow, BSC recommends further evaluation of the impacts of the Phase II development. Our specific recommendations are presented in the following section.

Phase II Improvements and Recommendations

The Proponent has committed to specific improvements as part of Phase II of the project, which are described in the Section 61 Findings and restated in the Traffic Memo. The Proponent recommended that an evaluation of current and future operations be conducted to determine if any further modifications are necessary at the intersections that comprise the Cedar Street/I-495 Interchange. The Proponent also recommends that post-occupancy traffic monitoring be conducted at the intersections of Cedar Street/Fortune Boulevard/Dilla Street, Cedar Street/East Main Street, and Dilla Street/Purchase Street to determine if traffic signal modifications are necessary with the full occupancy of the Phase II residential development. BSC agrees with the Proponents recommendations to conduct further evaluation and post-



occupancy traffic monitoring. BSC offers the following comments related to mitigation and further evaluation of the transportation network:

3. The nature of the Phase I and Phase II land uses have significantly changed since the issuance of the Section 61 findings. Although the total peak hour trip generation estimates are expected to be reduced under the current proposal when compared to the 2009 approved program, the directional peak hour trip generation estimates exhibit major differences that may have a material impact on traffic operations along the site driveway, at the intersection with Cedar Street, and at the I-495/Cedar Street interchange.

The mitigation measures defined in the Section 61 Findings should be re-evaluated for their appropriateness. BSC recommends that the Proponent provide an updated traffic operations analysis, in accordance with MassDOT guidelines, based on the updated Phase II traffic volumes at the following intersections:

- Cedar Street/Deer Street
 - Cedar Street/I-495 Northbound Ramps
 - Cedar Street/I-495 Southbound Ramps
4. BSC recommends that the Proponent review the operations analysis and determine if additional or alternative mitigation is necessary at the above locations. The mitigation measures defined in the Section 61 Findings are currently over ten years old. Due to the change of the development program and potential changes in traffic patterns over the past ten years, the overall needs of the surrounding transportation network may have changed.
 5. The intersection of Cedar Street/Dilla Street/Fortune Boulevard is listed as a Highway Safety Improvement Program (HSIP) high crash cluster. BSC recommends that the Proponent conduct a detailed crash analysis at this intersection using available crash records from the Milford Police Department. The crash analysis should identify any correctable safety issues and provide recommendations for improvement.
 6. BSC recommends that the Proponent conduct a traffic monitoring study upon 85 percent occupancy of the Phase I residential units. The monitoring study should include 48-hour automatic traffic recorder (ATR) counts along Deer Street and weekday morning and evening peak hour turning movement counts (TMCs) at the following locations:
 - Cedar Street/Deer Street
 - Cedar Street/I-495 Northbound Ramps
 - Cedar Street/I-495 Southbound Ramps
 - Cedar Street/Dilla Street/Fortune Boulevard
 - Cedar Street/East Main Street
 - Dilla Street/Purchase Street
 7. BSC recommends that the Proponent use the results of the traffic monitoring study to determine the need for traffic signal timing, phasing, or geometric modifications at the signalized intersections and the need for traffic signal installation or other geometric modifications at the unsignalized intersections.



Site Access

8. Access to the project site is via Deer Street off Cedar Street. The provision of a singular access/egress to the proposed residential development is a concern. The Proponent should explore additional access options for emergency purposes.

Please do not hesitate to contact our office with any inquiries you may have.

Sincerely,

BSC Group, Inc.

Michael A. Santos, PE, PTOE
Project Manager

Cc: Sam Offei-Addo, PE, PTOE, BSC Group