July 14, 2025

Mr. Ryan McEvoy, PE
Principal Civil Engineer
SLR International Corporation
99 Realty Drive
Cheshire, CT 06410

RE: Peer Review – Site Plan & Stormwater Management Applications
51 Daniels Avenue
Waterford, Connecticut
Langan Project No.: 140310301

Enclosed please find our responses to your letter dated June 25, 2025. Below please find each comment followed by our response in **bold.**

Review Comments

1. The applicant's engineer should confirm the amount of cover over the proposed underground Retain-It® systems. Specifically for System P1A near CCB-112, there is potential for less than 1 foot of cover over the system. For System P2B, the top of the concrete chambers is close to proposed finished grade at the southern end of the system.

   COMMENT RESPONSE: The systems have been designed to meet the minimum cover requirements allowed for a Retain-It chamber. Per Retain-It manufacturer guidance, the precast concrete systems allow for a minimum cover of 6". The systems will be reviewed and approved by the Retain-It manufacturer prior to construction. At the lowest point of finished grade, Systems P1A and P2B have approximately 9" of cover.

2. Based on a site visit by SLR, there is an existing catch basin in a low point in the northwest corner of the property near Daniels Avenue that captures a majority of the runoff from Existing Watershed 2. This existing catch basin on site drains to the existing catch basin (TF=96.36) in Daniels Avenue. We recommend the location of the existing catch basin on site is added to the site plans along with the inverts for this catch basin and existing catch basin within Daniels Avenue. Coordination with Waterford Public Works might be needed to remove inserts from the catch basin within Daniels Avenue to obtain pipe inverts and sizes accurately.

   COMMENT RESPONSE: A callout has been added to sheet CG101 noting the location of this existing catch basin. Prior to construction the contractor will be required report the location and invert information to Langan. The structure will be maintained and protected during construction.

3. In order to mimic existing site hydrology, consideration should be given to directing the discharge from Stormwater Basin P2A to the existing swale/depression noted in Comment #2. Presently, Existing Watershed-2 (EXWS-2) ultimately discharges to the depression and inlet structure, connecting to CCB (TF=96.36). The proposed condition stormwater design connects to existing storm drainage upgradient of the CCB noted above.

***COMMENT RESPONSE**: This option was considered; however, the existing structure is located outside of the proposed property limits. The design intent is to avoid the installation of any stormwater structures, pipes and grading disturbance on the portion of the existing property that is to be retained by the Town.*

4. The hydrology analysis in the Stormwater Management Report has included the entirety of the school roof area with Proposed Watershed 2A and directed to Stormwater Detention Basin P2A. Please note that Sheets CG101 and CG102 contain a note that states, "Connect all roof leaders to nearest storm structure or nearest drainage pipe at minimum 0.5%." Absent are any specifically routed pipes on the east of the building that connect to Basin P2A, and roof leaders could be directed to storm drainage routed to underground system Basin P2B. We recommend that either 1) storm drainage is provided along the east side of the building, directed to Basin P2A, or 2) modify the hydrology model to direct a portion of the east side of the building to Basin P2B.

***COMMENT RESPONSE**: The note on sheets CG101 and CG102 will be removed and was an error. The entirety of the roof area runoff will be collected and conveyed through the four roof drains located on the western side of the building. The stormwater model reflects this routing, and the routing has been confirmed with the project MEP.*

5. For Existing Watershed 1, the stormwater runoff from this watershed is dispersed over a large area with no apparent concentration to a single swale, watercourse, storm structure etc. Under proposed conditions, peak runoff rates are being decreased compared to existing conditions, but a concentration of runoff is being proposed via the proposed level spreader/scour hole. For example, for the 100-year storm under existing conditions there is a peak runoff rate of 35.44 cubic feet per second (cfs) for Watershed 1. Under proposed conditions there is a peak runoff rate of 28.67 cfs with 17.40 cfs being discharged by the proposed level spreader/scour hole. There is potential for properties downgradient of the level spreader/scour hole to receive an increase in peak runoff rates under proposed conditions compared to existing conditions due to the proposed concentration of stormwater discharge. The applicant's engineer should consider increasing the length of the level spreader and/or disperse the discharge in more than one area to attempt to better mimic existing runoff conditions.

***COMMENT RESPONSE**: The outfall location has been selected during the Wetland Commission review and approval, in consultation with the commission, to reduce the potential for downgradient properties to receive stormwater runoff by ensuring discharge from HW-100 will reach the existing off-site wetland to the west. The discharge from system P1A will be routed through a drop manhole structure, scour*

hole and 50-foot level spreader to unconcentrated flows and provide additional energy dissipation. The flow rate over the level spreader for the 100-year storm is approximately 1.57 fps (see Appendix B).

6. Computations for the Level Spreader/Scour Hole at HW-100 should be provided to demonstrate non-erosive velocities over the curb.

COMMENT RESPONSE: Flow over the 50-foot level spreader for the 100-year storm is approximately 1.57 fps (see Appendix B), which is below the allowable velocity threshold of 2.5 fps for sandy soils per the 2024 Connecticut Guidelines for Soil Erosion & Sediment Control Manual. Additionally, the Manual states the general rule of thumb for level spreaders is to provide 4 feet of length for every 1 cfs for the 10-year storm. The P1A 10-year peak flow rate = 7.26 cfs which requires a minimum level spreader length of 29 feet. As noted above and in Appendix B, the velocity exiting the level spreader is below the guideline level.

7. We recommend that the invert elevation of HW-100 is lowered to be lower than the top of curb elevation of the level spreader.

COMMENT RESPONSE: Noted – the invert elevation for HW-100 has been lowered below the top of curb elevation. See revised HW-100 invert on sheet CG101.

8. The applicant's engineer should consider isolator rows for the proposed underground systems P1A and P2B.

COMMENT RESPONSE: Isolator rows were considered; however, due to the configuration of system P1A, ease of maintenance, and the use of prefabricated concrete chambers rather than plastic arch chambers, it was determined that water quality units are a more effective pretreatment device. Water quality units are provided at all inlet locations for systems P1A and P2B.

9. Specifications for the Bioretention Soil for Stormwater Detention Basin P2A should be provided.

COMMENT RESPONSE: Refer to bioretention soil specifications provided under detail 3 on sheet CG503. This specification calls for a mixture of 60% sand and 40% horticultural soil. This blend will promote infiltration, support plant growth and stabilization within the basin.

10. The planting schedule or seed mixes for Stormwater Detention Basin P2A should be provided.

COMMENT RESPONSE: Refer to sheet L04.03 for the location of Basin P2A seeding information. The Turf and Grasses specification calls for New England Erosion Control/Restoration Mix. This mix is appropriate for detention basins not holding standing water, and the mix is formulated for ecologically sensitive restorations that will do well in recently disturbed sites to stabilize the soil surface.

11. According to Section 25.6.5.8 Conveyance Criteria of the Stormwater Management and Low Impact Development Standards in the Town of Waterford Zoning Regulations, "Emergency outlets must safely pass the post-development peak runoff from the 100-year storm event in a controlled manner without erosion of the outlet works or downstream drainage system and provide a freeboard of at least one (1) foot.". Less than 1 foot of freeboard is provided for Stormwater Basin P2A for the 10-year storm through 100-year storm.

***COMMENT RESPONSE*: The proposed infiltration basin berm elevation has been raised to elevation 105. The peak elevation in Basin P2A during the 100-year storm is approximately ±103.56. As a result, the revised plans provide about 1.44 feet of freeboard.**

12. The top of frame elevation specified for Trench Drain 114 does not appear to match with nearby proposed grading.

***COMMENT RESPONSE*: The previously called out TD-114 frame elevation was an error. The revised frame elevation has been revised (see sheet CG101).**

13. Based on the Test Pit Log for TP-01, there is potential for groundwater to be within a foot or two of the bottom of System P1A. The applicant's engineer should consider a dewatering underdrain set within the stone below the Retain-It chambers to ensure the system drains out in between rain events.

***COMMENT RESPONSE*: TP-01 indicates groundwater approximately 9 feet below existing grade. This relative groundwater elevation was assumed to be consistent at the proposed location of System P1A (i.e., assumed GW elevation 97.5 feet). The bottom of chamber elevation for system P1A was set at elevation 101.33 feet to provide the minimum 3-foot clearance to groundwater. If groundwater is encountered above the anticipated elevation during excavation, modifications – such as a shallower infiltration system or alternative improvements – will be incorporated if requested by the Commission.**

14. Chapter 10 - General Design Guidance for Stormwater Infiltration Systems: General Design Guidance - Vertical Separation to Groundwater and Bedrock of the 2024 Connecticut Stormwater Quality Manual states, "The 3-foot vertical separation distance from the bottom of the infiltration system to the SHGT and bedrock may be reduced to 2 feet in the following situations: ...For Stormwater Retrofits where the minimum 3-foot separation cannot be met due to existing site constraints and there is little risk to groundwater quality from the infiltrated stormwater". System P1A should be modeled without infiltration due to the presence of groundwater less than 2 feet below the bottom of the system.

***COMMENT RESPONSE*: As noted in comment response 13, based on the Test Pit Log data, the 3-foot clearance has been provided. If groundwater is encountered above the anticipated elevation during excavation, modifications – such as a**

shallower infiltration system or alternative improvements – will be incorporated if requested by the Commission.

15. The applicant's engineer should consider using high strength, high-density polyethylene (HDPE) pipe or Class V reinforced concrete pipe (RCP) for the proposed piping upgradient of CLCB 401 and in between MH 400 and CLCB 401.

COMMENT RESPONSE: The pipe between MH-400 and CLCB-401 has been changed to Class V RCP. The pipe upgradient of CLCB-401 is ADS N-12 HDPE. This pipe is rated for a minimum of 12" of cover and will have no vehicular loading.

16. Due to the addition of a berm for the vegetated drainage swale, the time of concentration flow path for Proposed Watershed 2C is no longer valid. We recommend the applicant's engineer update the HydroCAD model to account for the likely revised time of concentration path.

COMMENT RESPONSE: The time of concentration and watershed boundary for PRWS-2C has been revised to reflect the accurate time of concentration. The HydroCAD model has been updated accordingly (see Appendix B).

17. The existing condition hydrology analysis uses a 'fair' condition for grassed areas (50 to 75% coverage), while under proposed conditions, much of the grassed areas classified as 'good' condition (>75% coverage) or meadow. 'Good' grass and meadow areas have a lower curve number, which helps to reduce the flow rates under proposed conditions. Therefore, we would ask the applicant's engineer to provide the justification for the use of the 'fair' grass under existing conditions, as opposed to 'good' grass or meadow under proposed conditions.

COMMENT RESPONSE: All existing grass in the existing HydroCAD model has been changed from 'fair' to 'good' as requested (see Appendix B).

18. The applicant's engineer should clarify if the proposed stormwater detention basin will be utilized as a sediment trap during construction. If yes, notes on the conversion of the basin from sediment trap to bioretention basin should be provided.

COMMENT RESPONSE: The location of the proposed stormwater basin P2A will not be utilized as a sediment trap. Clear instructions have been included on the plan sheets to keep this area clear of material stockpiles, heavy machinery, and any compaction of existing soils (see notes on sheets CS003 and CE102).

Sincerely,

Langan CT, Inc.

Bill Willsey, PE
Senior Staff Engineer