



To: Portsmouth MS4 Stormwater Committee

Date: May 11, 2022

Project #: 52542.07

From: Bill Arcieri

Re: Review of Portsmouth Site Plan and Zoning Regs to Address MS4 Permit Requirements for Encouraging Use of LID Measures

Consistent with the 2017 NH MS4 Permit MCM #5 Permit requirements, VHB has reviewed the City's Site Plan Review and Land Use Zoning Regulations to identify provisions in the current regulations that already encourage the use of Low Impact Development (LID) measures and opportunities to suggest modifications to promote the use of LID measures for new and redevelopment projects and limit additional stormwater runoff generation.

This memo and table below summarize the current provisions included in the Site Plan Review Regulations (updated Nov. 2020) and Land Use Zoning Regulations (updated January 2021) that encourage the use of LID practices, including permeable materials, vegetation plantings to disconnect large, paved areas and to provide shading, as well as allow the use of green roofs and to reduce energy consumption. In this regard, this memo can serve as a guide to remind Planning Board and Technical Review Committee members of the current City requirements that already promote and encourage the use of LID measures as part of site development, where feasible.

The **bold text** included in the table below represent suggestions or recommendations to add to or modify certain sections of the regulations to further encourage LID measures and/or provide greater consistency with respect to other stormwater treatment and volume reduction requirements in the City regulations. We also highlighted in underlined text existing water use efficiency or reuse requirements for irrigation purposes as part of the Site Plan Regulation landscaping requirements. Perhaps these same water efficiency /reuse requirements should be included in Chapter 16: Utilities; Article 1: Water Ordinance such that they could be applied to existing commercial sites via the building permit approval process for facility upgrades / renovations.

Page	Section	Topic	Specific Regulations/ Requirements Pertaining to Use of LID Measures
Site Plan Regulations – updated November 2020			
29	4.3	Off Street Parking Design Layout	Item 1: Every effort shall be made to use pervious parking and pathway surfaces as an alternative to impervious asphalt or concrete for overflow parking areas, except in cases where it is determined that a traditional impervious parking lot with engineered stormwater systems renders greater protection of surface and groundwater resources than pervious pavement.
35	6.3	General Landscaping	Item 13: Requests applicants to incorporate LID measures, wherever practical, in all aspects of site landscaping.
37	6.6	Landscaped Areas	Item 2: Within parking areas, landscaped islands shall be provided between adjacent rows of parking and between groups of parking spaces with the goal of breaking up large contiguously paved areas. (Perhaps this requirement should be moved into Section 4 above that addresses parking lot design instead of landscaped areas). Item 9: Pedestrian pathways made of permeable materials are encouraged where the size and shape of landscaped areas are designed to accommodate pedestrian passage. Item 10: Low Impact Development techniques such as rain gardens, bioretention areas, and tree boxes and other stormwater management landscaping techniques may be incorporated into landscaped areas and may replace required landscaping components as approved by the Planning Board



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39	6.8	Perimeter Landscaping	Item 3: A minimum nine (9) foot-wide landscaped buffer, including shade trees, between the street or accessway pavement and sidewalk or pedestrian pathway shall be provided where adequate public right of way exists.
40	6.11	Landscaped Areas: Irrigation	Item 1: Irrigation should be minimized to the extent possible through use of native drought tolerant species and the use of landscaping that does not require permanent irrigation systems. Item 2: When irrigation is necessary to support the establishment and/or maintenance of landscaped areas smart controllers shall be used that limit irrigation during the day and during rain events. Item 3: Where appropriate, additional water conservation features including trickle and drip lines, rain barrels, cisterns or other water harvesting elements shall be incorporated into the site design to help maintain plantings. Item 4: Applicants are encouraged to use recycled water for irrigation provided the harvesting and circulation systems and water quality meet the requirements of the City's Utility Ordinance and state standards.
41	6.12	Innovative Landscaping Practices	Green Roofs: Applicants are encouraged to use roofing materials that have a Solar Reflective Index (SRI) of at least 29 (greater for roofs with a slope of 2:12 or more) and to install vegetated roofs to minimize the runoff volume generated by the roof. Solar Orientation: Applicants are encouraged to incorporate landscaping techniques that help reduce energy consumption for heating and cooling of buildings on the site. Trees should be planted to provide shade on buildings and parking lots in the warm seasons and to allow solar heat during the cool seasons.
42	7.1	Stormwater Management General LID Requirement	LID site planning and design measures shall be included in proposed development projects to the maximum extent practical. LID practices may include site design techniques (e.g., maintenance of vegetated buffers, minimizing the disturbance footprint) and structural measures to promote infiltration such as porous pavement, rain gardens or the capture / reuse of stormwater to reduce the stormwater volume discharged from the site. If LID practices are not proposed, the applicant shall fully demonstrate in writing why these practices are not feasible.
44	7.4	SW Mgt & Erosion Control Plan	Item 3: A description of proposed LID measures for proposed projects is required (Item 3) as part of the Stormwater Management and Erosion Control Plan (SMECP)
50	7.6	Enhanced SW Treatment for Redevelopment	Item 2: Use of LID measures are also suggested to provide stormwater treatment and minimize stormwater volume generation for redevelopment projects.
Subdivision Rules and Regulations (last updated Nov. 2020)			
18	VI	General Requirements: Item 6: Drainage Improvements	This section specifying requirement for additional stormwater treatment and detention is inconsistent with the recent changes to Section 7 of the Site Plan Regulations. We recommend this section be updated to specify that the project meet the Stormwater Treatment/ Peak Flow Control requirements included in the Site Plan Regulations Article 7 unless waived by the Planning Board, upon recommendation by DPW. Use of LID measures to minimize storm water volumes should also be encouraged.
27	VII	Design Standards: Item 2: Storm Water Sewers	This section appears to be out of date and not consistent with the stormwater design standards included in the recently updated Site Plan Regulations. We recommend updating this section to ensure the stormwater design standards are consistent with City Site Plan regs, MS4 Permit and NH Stormwater Manual. Design storm frequency for minor brook culverts is set at 15-year event, this should be consistent with the Site Plan and updated to at least the 25-year storm event. Use of LID measures to minimize storm water volumes should also be encouraged.

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	Attachments:	Street Width Typical Sketches	The attachments to the Subdivision Regs include sketches of minimum street design/ construction standards for Industrial, Commercial and Residential streets, which specify a minimum travel lane width of 16-feet and street width of 32-feet of pavement. We recommend deleting these attachments and refer to the 2017 Complete Streets Plan that includes narrower street widths of 22 to 28 feet (maximum) and 10-foot travel lanes for City Core, Neighborhood Connector Roads, and Industry/Business Park roads.
Chapter 10 - Zoning and Land Use Regulations: (street layout and construction)			
Article 5 Dimensional and Intensity Standards			
5	10.520 & 10.530	Table of Dimensional Standards	Sets minimum lot size, frontage, open space, and yard dimensions as well as maximum building coverages for various zoning districts to regulate the amount of development on each lot- Zones R and SRA still have a 5- and 1-acre minimum lot sizes, respectively - are these minimum lot sizes still appropriate for the remaining areas in these zones?
Article 5A Character- Based Zoning			
5A	10.5A44.40	Parking Lot Landscaping	Character-based Zoning; Parking Lot Landscaping; Parking lots with 10 or more spaces shall conform to the following: <ul style="list-style-type: none"> • Provide one landscaped island for every 10 spaces of minimum size of 325 sq. ft. • Shall contain one tree for every 7 parking spaces within 75 feet of the lot”
5A	10.5A46	Incentive Overlay Districts	This section provides development incentives for adding community spaces with access to natural vegetation or waterfront and/or workforce housing. The City might consider offering similar building footprint lot coverage incentives for adding Stormwater BMPs or Green Roofs to reduce existing stormwater volumes and pollutant loads.
Article 5B Gateway Neighborhood Mixed Use Development			
5B	10.5B24	Roof Types & Design	For Flat Roofs: Consider allowing use of Green Roofs as part of the Roof Type and Design Standards especially flat roofs.
5B	10.5B34	Building Type Standards	This section sets minimum open space standards ranging from 10% to 20% of lot area for various propose building types.
Article 10 Environmental Protection Standards			
10	10.1017	Wetlands Protection Conditional Uses	The Planning Board is authorized to grant a Conditional Use Permit for any use not specifically permitted in Section 10.1016.10, subject to the procedures and findings set forth herein. Conditional Use Permit is required of any the proposed project will involve the temporary or permanent alteration of more than 250 sq. ft. or impervious area within wetland and/or wetland buffer (10.1017.22).
10	10.1017.23	Conditional Use Wetland Buffer; Impervious Area	If the proposed alteration includes adding impervious surfaces, the applicant shall remove existing impervious surfaces equal in area to at least the area of proposed impervious surface. The intent of this provision is that the project will not result in a net loss of pervious surface within a jurisdictional wetland buffer. If it is not feasible to remove impervious surfaces from the wetland buffer equal to at least the area of new impervious area impact, the applicant shall include a wetland enhancement plan to describe how the project will enhance wetland values and functions.
10	10.1017.83	Wetlands Protection Plan Standards	No new impervious surface shall be added within 25 feet of a wetland boundary, and any additional IC area outside the 25 ft limit and in wetland buffer shall be compensated by a 1:1 conversion of removing existing IC area or adding protective measures such as rain gardens and plantings at ratios that are specified in 10.1017.32
10	10.1018.30	Stormwater Mgt Performance Standards	Porous Pavement in Wetland Buffer “All new pavement installed in a wetland buffer shall be porous pavement. The Planning Board may allow exceptions to this requirement where it can be demonstrated that the height of ground water, condition of soil, or other factors as described in the application are not appropriate for porous pavement.”

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Article 11 Site Development Standards			
11-1	10.1112.14	Off-Street Parking Requirements	Off-Street Parking Facilities: The current regulations allow the Planning Board to approve fewer than the estimated maximum number of parking spaces needed through a Conditional Use Permit for developments that include shared parking provisions, amenities that promote public transit, telecommuting and other forms of commuting (i.e., bicycles)– reducing the need for vehicles
11-11	10.1114.24	Design of Off-Street Parking Facilities	Specifies parking surface type and allows for pervious surfaces provided it meets the anticipated load bearing needs for the project at maximum occupancy and equivalent protection of surface and groundwater resources.
11-17	10.1131	Landscaping and Screening; General	All multifamily and non-residential development of land shall provide landscaping and screening as required by the Site Plan Review regulations: Consider adding language to minimize area of managed turf and efficient use and/or stormwater capture for irrigation water.

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