

### Step 3. Lay out streets, driveways, parking areas and trails

The lay out of streets, driveways, and parking areas should be designed after the site analysis. These features should be laid out in a way that minimizes their overall length and width and cutting and filling to conform to natural contours. Shared parking and driveways need to be considered. Streets and driveways should conform to natural land formations in order to reduce impact on the natural resources where possible.

### Step 4. Draw in the lot lines

Once the above steps have been completed, the lot lines (if any) can be drawn based on the location of buildings, driveways, septic systems, and wells. Due to the clustering of development, developers may be able to take advantage of an Open Space Subdivision or a Planned Residential Development.

## **EROSION AND SEDIMENT CONTROL**

Erosion and storm water drainage plans should utilize natural topography wherever possible. To reduce erosion of exposed soils and prevent sedimentation of wetlands, water bodies and other sensitive areas, land disturbance should be minimized to the area necessary for construction. Proposed development projects on a previously undeveloped site should minimize clearing and grading, especially in areas of steep slopes, erosion-prone soils and sensitive vegetation. For redevelopment projects, the site plan should concentrate development on previously disturbed areas to the extent possible. Vegetation outside immediate construction areas should remain undisturbed. Any disturbed areas should be replanted or heavily mulched. Erosion and sedimentation control plans shall be constructed in accordance with The Town of Guilford Subdivision and Zoning Codes using principles outlined in the Connecticut Guidelines for Soil Erosion Sediment Control (2002), as the same maybe revised.

## **STORMWATER MANAGEMENT**

Guilford's stormwater management regulations are designed to protect local and regional wetlands and water bodies, Long Island Sound and its tributaries from non-point sources of pollution and to maximize groundwater recharge on site. The goal of LID stormwater management is to mimic pre-development hydrologic conditions by utilizing natural topography and soils to detain, retain, percolate and evaporate source and use natural treatment systems instead of a centralized collection point. Non-structural stormwater management systems should be used, in part or in whole, only if the applicant can demonstrate that other systems are not feasible due to site conditions.

## **LANDSCAPE DESIGN**

Demand for irrigation should be minimized and groundwater recharge from landscaped areas should be maximized to the extent possible. To reduce proliferation of invasive species, native plants should be used wherever possible. All disturbed areas should be replanted or mulched in accordance to the Erosion and Sedimentation Control plan. Plants on the 2004 Connecticut DEP Invasive Plant List (as the same maybe revised) should not be used.

The existing vegetation outside the immediate construction area should remain undisturbed. Significant existing trees within the proposed development area should be preserved where possible as per the following caliper size thresholds related to species:

- 4-6" for small trees such as dogwood and redbud

- 8-10” for medium species such as sassafras, cherry and water beech
- 12-14” for slow growing hardwoods (oak, maple, ash)
- 15-18” for fast growers such as tulip poplar, sycamore and conifers<sup>5</sup>

As a result of these practices, forests, wetlands, and wildlife habitat would be preserved.

**Definitions:**

**Permanent Erosion & Sedimentation Control Measures-** Long term devices placed, constructed on or applied to the landscape that prevents or curb the detachment of soil, the movement of water and or the deposition of sediment. Examples include detention basins, grass swales, level spreaders, and vegetation.

**Steep slopes-** A steep slope has a grade of more than 25% and an area of 1,000 square feet or more. The grade is measured along a line perpendicular to the lot contours established at intervals not exceeding two feet.

**View Shed-** Scenic views into and from the site and any other features that contribute to the landscape character of the property. Examples include meadows, notable trees ridgelines, rock outcrops, stonewalls, beaches and dunes, Long Island Sound and its tributaries.

**Stormwater Detention-** Control measures that temporarily holds and gradually releases a volume of stormwater runoff to attenuate and delay stormwater runoff peaks.

**Stormwater Best Management Practices-** practices designed to mitigate the effects of stormwater runoff to attenuate flooding, reduce erosion, and reduce pollution.

**Reference:**

1. Reducing Stormwater Costs through Low Impact Development (LID), Strategies and Practices, EPA Publication number 841-F07-006, December 2007
2. The Economic Value of Open Space: A review and Synthesis, CJ Fausold and RJ Lilieholm, Environmental Management Volume 23 (3):307-320,1999
3. The Practice of Low Impact Development by the U.S. Department of Housing and Urban Development, July.
4. 2004 Connecticut Stormwater Quality Manual prepared by the Connecticut Department of Environmental Protection.
5. Conservation Subdivision Design: A Brief Overview by Randall Arendt, FRTPI, ASLS (Hon.)

Table 1  
LID/BMP Resource Requirements and Resources

Natural Resource Regulatory Requirements			Natural Resource Reference Sources	
Natural Resource Elements	PZC Site Plan map reqt.	Inland Wetlands app	Natural Resource Inventory	Other References
Contours and slopes >25%	Already required	#5		Site survey already required
Watercourse boundaries @100'	Already required	#6		Site survey already required
Soil mapping		#16.D	Map A-4 Prime soils	USDA map/ wetland soils

Wetlands and watercourses		IWC jurisdiction	Map J-2	IWC regulations –Appx A
Stone walls	Already required			Site survey already required
Ledge and rock outcroppings	Often already included			Site survey required
Logging roads and trails	Often already included			Site survey required
Flood hazard areas			Map C-2	FEMA maps
Aquifers and watersheds			Map C-1 for watersheds	Zoning map for aquifers
Natural drainage areas-swales		#9A (for regulated area only)		Inferred from contours
Impervious surface % whole site	Commercial and Industrial Zones VLB & proposed CAM regs		Map of 10% VLBs at build out	Storm water regs
Rare and endangered species			Map J-3 and THS wall map	CT DEP NDDDB maps
Significant forests & Grasslands			Map J-1	Property survey already reqd
Significant Natural Resource Areas (SNRAs)			Map J-6	
Wildlife movement corridors			Map J-4	CT DEP NDDDB maps
Viewsheds	Cam Regulations Only		Section G, Map G Appx G1&2	Site survey required
Significant trees (in proposed development area only)				See definitions in BMP text Site survey required
Contiguity of site with protected open space, unbuilt land, wetlands & ridgelines				USGS, NRI Map H-3, GIS plus aerial photos

**A CHECK LIST TO GUIDE LOW IMPACT DEVELOPMENT – BEST MANAGEMENT PRACTICES**

Date: August 7, 2020

Assessor Map No. 21 \_\_\_\_\_ Lot No. 26A-2 \_\_\_\_\_

Location of Property: 114 Leetes Island Rd., Guilford \_\_\_\_\_

Applicant: Beth & Jack Mariotti \_\_\_\_\_

Items listed below should be considered by developers in the creation of site plans. Due to individual site constraints not all items will apply to each individual property. CHECK ALL ITEMS THAT HAVE BEEN ADDRESSED IN THE SITE PLAN APPLICATION. Applicants should indicate by writing Yes, No, or N/A (not applicable). Additional comments are to be attached on a separate sheet of paper with project name and address.

**A. SITE PLAN CONSIDERATIONS**

<b>1. Site Assessment of Natural Resources</b>	<b>Applicant</b>	<b>Staff Comments</b>
a. Natural Resources and constraints have been indicated and are identified on the plans (wetlands, rivers, streams, flood hazard zones, meadows, agricultural land, tree lines, slopes [2 foot contours], soil types, exposed ledge & stone walls).	X	
b. Is the property shown on the latest copy of CT DEP State and Federal Listed Species and Significant Natural Communities Map as property listed in the Natural Diversity Data Base (NDDB)? If yes, provide a copy of the CT-DEP NDDB request form and CT-DEP reply letter.		N/A
c. Development is designed to avoid critical coastal resources, water courses, wetlands and steep slopes.	X	
d. Soils Suitable for septic & stormwater infiltration have been identified	x	
e. Natural existing drainage patterns have been delineated on the plan and are proposed to be preserved or impacts minimized.		N/A
f. Significant trees/ tree clusters in proposed development areas have been identified. Removal avoided and or protection in conservation easement suggested. (See guidance document).		N/A
g. View sheds have been recognized/ maximized		N/A
h. A copy of the latest USGS Quad map along with an aerial photograph showing the site and adjacent properties is attached.		N/A

<b>2. Preservation of Open Space</b>	<b>Applicant</b>	<b>Staff Comments</b>
a. An open space subdivision or planned residential development (PRD) has been considered.	N/A	
b. Open space/ common areas are delineated.	N/A	
c. Open space is retained in a natural condition.	N/A	
d. Proposed open space is located adjacent to open space areas, trail systems, and / or wild life corridors. ( See Town of Guilford Natural Resource Inventory)	N/A	
e. Coastal Public access should be evaluated for properties with non water-dependent uses on waterfront sites.	N/A	
f. Street line setbacks are minimized to reduce impervious surface and to optimize open space.	N/A	

<b>3. Minimization of Land Disturbance</b>	<b>Applicant</b>	<b>Staff Comments</b>
a. The proposed building is located where development can occur with the least environmental impact.	X	
b. Buildings designed for maximum solar gain. (Window exposure, are oriented to the sun for maximum energy efficiency).	N/A	
c. Clustered development has been considered.	N/A	
d. Disturbance areas have been delineated to avoid unnecessary clearing or grading,	X	

e. Sanitary systems should be setback from water bodies to maximum extent possible.	N/A	
f. Native Vegetation outside the immediate construction areas remains undisturbed or will be restored.	X	

4. Street and Driveway Sizes	Applicant	Staff Comments
a. The design provides an efficient layout to minimize the overall length and width of streets.	N/A	
b. Roadways and driveways conform to natural land formations.	N/A	
c. Design features to reduce impervious surfaces such as shared parking & Driveways have been considered.	N/A	
d. Proposed drainage systems utilize existing topography.	N/A	

## B. EROSION AND SEDIMENT CONTROL

EROSION AND SEDIMENT CONTROL	Applicant	Staff Comments
a. Erosion and Sedimentation control plan is designed in accordance to Guilford Subdivision and Zoning Regulations.	X	
b. Permanent erosion control measures are to be utilized.	N/A	
c. Development does not create steep slopes subject to erosion	X	
d. Vegetated buffers are provided for riparian areas, intermittent streams, and wetlands.	X	
e. Cleared areas will be replanted and/ or heavily mulched.	X	

## C. MANAGING STORMWATER

MANAGING STORMWATER	Applicant	Staff Comments
a. Efforts have been made to retain or infiltrate water on site.	X	
b. Outfalls are stabilized and receiving streams are protected from sediment scour potential velocity.	N/A	
c. Level spreaders or dispersed flow methods are used only where natural dispersal is not possible	N/A	
d. Maximum use is made of vegetated ditches/ swales, especially along driveways, parking areas and roads.	N/A	
e. Cul-de-sacs include a landscape island for bio-retention.	N/A	
f. Sheet flow is used to the maximum extent possible to avoid concentrating runoff.	N/A	
g. Rooftop drainage is discharged into bio-retention areas or rain gardens.	X	
h. Innovations like collecting/ reusing rainwater, green roofs, or porous pavement have been considered.	N/A	
i. Grass swales are used beside roads instead of curbs and gutters.	N/A	
j. Parking medians are designed for bio-retention to allow infiltration.	N/A	
k. Infiltration structures have been included –e.g. drywells and infiltration trenches.	X	
l. Best Management Practices to provide water quality treatment to remove existing and expected pollutants generated to be the proposed use.	N/A	
m. Impervious surfaces are disconnected and stormwater is treated locally.	N/A	
n. Proposed construction of the storm water management system is designed in compliance with the Guilford Town Codes and Connecticut Stormwater Manuel.	N/A	
o. Onsite soil infiltration/ permeability has been measured.	N/A	
p. Onsite soils are suitable for stormwater detention/ infiltration.	N/A	
q. Sufficient areas of infiltration (if present) are being utilized to maximize onsite stormwater retention.	X	