

Wetland Impact Assessment

Lot 3 South Meriden Road | Cheshire, Connecticut

March 2, 2021

SLR #141.15346.00001.0060

At the request of the applicant for the subject parcel, SLR International Corporation (SLR) has prepared this wetland impact assessment to support the inland wetland and watercourse permit application that is pending before the Cheshire Inland Wetlands Commission for a single-family residence located on Assessor's Map 59, Lot 3 on South Meriden Road. The commission had several comments related to the proximity of delineated wetlands to the proposed single-family residence, and this assessment has been developed to address those comments.

Wetland Historical Context

SLR reviewed historical aerials to assess the changes and alterations that have occurred within the existing wetlands on this site. Historically, anthropogenic activities have shaped and molded much of our current landscape, which has included alterations of existing wetlands and watercourses. Based on our review of historical aerials for this site, the following can be surmised of the historical wetland impacts and the change in cover type. The earliest available aerials are dated from 1934 (Fairchild Aerial). The 1934 aerial shows that this parcel was undeveloped and was used for agriculture, primarily pasture/meadow. From the anecdotal information of former and current property owners, this parcel was mostly used as pasture/grazing land. The site remained in a pasture/meadow condition up until the mid 1960s, where aerial photos show a change from meadow to meadow/scrub shrub wetland and upland cover types. By the 1970s, most of the parcel's cover type is transitioning into a scrub-shrub habitat. Aerials from the 1980s, 1990s, and 2000s show a transition of habitat type from scrub shrub to early successional forested uplands and wetlands. As was documented within our soil report, the wetlands on this site vary in habitat cover type and quality. The eastern parts of the wetland consist primarily of scrub shrub intermixed with some pole-sized to moderately sized trees. As the wetland transitions west, the cover type changes from scrub shrub to a typical forested (red maple) wetland. Nonnative invasives become much less prevalent within the wetland moving from east to west. From a qualitative perspective, the western wetlands have a greater biodiversity and promote higher quality functions and values than the eastern portion of this wetland. The eastern portion of this wetland with its invasive plant species colonization and other disturbance serves as a buffer to protect the forested wetlands to the west.

Wetland Impacts

Wetland impacts can be typically categorized as either direct and/or indirect impacts. For the subject single-family residence, there are no proposed direct (i.e., clearing, filling, or alteration) wetland impacts. The commission has established a townwide 50-foot upland review area (URA) along officially delineated wetland/watercourse boundaries within town. The URA for this property extends over much of the developable upland located along the eastern portion of the site. There is no opportunity to develop the site without significant encroachments within the URA. That being said, the applicant and project team have prepared a site plan that balances the protection of the URA while allowing for site development. The clearing of vegetation within the site's URA, much of which includes nonnative species such as multiflora rose, Asiatic bittersweet vines, common mugwort, and Japanese barberry, is required to facilitate the construction of the single-family house, two-car detached garage, driveway, and subsurface septic system.

Indirect impacts are those activities that do not have a direct impact on a wetland/watercourse but can result in an adverse impact on the wetland/watercourse from adjacent upland activities. Such indirect impact activities can include changes in groundwater and surface water drainage/discharge patterns to wetlands/watercourses, invasive plant species colonization within adjacent uplands/wetlands from soil disturbance and increased sunlight penetration, removal of wetland-dependent upland wildlife habitat (i.e., obligate vernal species), and increased nutrient/sediment loading from stormwater runoff into wetlands and/or watercourses. For this proposed single-family residence, our team of engineers has developed a plan to protect the wetland resources on site from indirect impacts. The following best management practices (BMPs) have been proposed for this site:

- A robust sediment and erosion control plan has been prepared and will be implemented prior to land clearing to help protect the water quality within the wetlands located downgradient.
- Site grading has been developed that maintains existing subsurface and surface water drainage patterns to existing wetlands.
- The house has been minimized to a three-bedroom house to reduce the house and septic system footprint and URA clearing requirements.
- The detached garage has been relocated closer to the house to reduce clearing and impervious cover within the URA.
- The house has been shifted east away from the wetlands and as close to the front yard setback as allowed by local zoning requirements.
- Vegetated maintained lawn is proposed to prevent colonization of cleared URA by invasive plant species.
- A planted rain garden will be installed downgradient from the house to collect and treat roof stormwater runoff via nutrient filtration (plant uptake) and infiltration (soils) of stormwater.
- A split rail wood fence will be installed along the clearing boundary to help demarcate the no-clear limit within the URA.
- Conservation markers have been added to the plans to help denote the URA protection area.

The BMPs as described above will help protect the wetland from indirect impacts. There will be no significant alteration of the drainage patterns to the wetlands. There will be no clearing of wetland-dependent upland wildlife habitat. The eastern portion of the wetland is already colonized by invasive plant species, so further colonization caused by upland vegetation clearing is not anticipated. Most importantly, the eastern wetland will continue to serve as a buffer to the western portions of the wetland on site. Lastly, the water quality within the wetlands is being protected through sediment and erosion control protection during construction and a planted rain garden.

Overall, the plan has balanced the protection of the wetlands on this site while allowing for development of a single-family lot. In conclusion, based on the quality of the wetlands adjacent to the proposed development and the BMPs that will be implemented, it is my professional opinion that this single-family residence will not have a significant adverse impact on the onsite wetlands.

Sincerely,

SLR International Corporation



Matthew J. Sanford, MS, PWS, RSS
US Manager of Ecology

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