

May 14, 2020

Wetlands Evaluation and Impact Assessment Proposed 9-Lot Open Space Residential Subdivision

**128 Bayberry Lane
Westport, Connecticut**

EXISTING CONDITIONS

The project site is located in Westport, CT within the AAA Residential Zone at 128 Bayberry Lane. The Belta family has commercially farmed the property since 1946. The total acreage of the parcel is 23 +/- acres comprised of Parcel A (21.5 ac.) and Parcel B (1.5 ac.) Currently two residential structures, three green houses and miscellaneous accessory uses are located on the property. The land is bounded to the north by the Muddy Brook and an associated wetland system, by other residential properties to the south and east, and by Bayberry Lane to the west.

The site has access to a public water supply system and natural gas. Properties in the area are served by private septic systems. The property is situated on a hilltop that slopes downward to the north, east and west from a high point located near the southern property boundary. The property slopes radially from southeast to northwest at an average grade of 4.9 +/- %. The change in grade is from elevation 184.9' +/- near the center of the property to 158.2' at the northeast corner from the southeast corner to elevation 154' near the Muddy Brook.

There are 3 .45 +/- acres of wetlands on the site. All of the wetlands on the property are associated with Muddy Brook, its tributaries and its riparian border. The site's wetland soils were identified as Ridgebury, Leicester and Whitman soils, Timakwa and Natchaug soils and Rippowam fine sandy loam. The Ridgebury, Leicester and Whitman soils are poorly drained and very poorly drained loamy soils formed in glacial till. The Timakwa and Natchaug soils consists of very deep, very poorly drained soils formed in woody and herbaceous organic materials over loamy and sandy deposits in depressions on lake plains, outwash plains, till plains, moraines, and flood plains. The Rippowam series consists of very deep, poorly drained loamy soils formed in alluvial sediments. They are nearly level soils on flood plains subject to frequent flooding.

Two types of wetland habitat are found on the property that can be broadly classified as freshwater forested/shrub wetland habitat and freshwater emergent wetland habitat.

Existing Wetlands

Muddy Brook flows onto the property from the northeast, flows through the northwest portion of the property, and flows off-site to the southwest through a culvert under Bayberry Lane. Muddy Brook has a relatively flat gradient and is approximate 8-15 feet wide as it flows through the property. It is fairly shallow and has a substrate consisting of sand and silt. The brook is not expected to provide any significant fish habitat due to its size and upstream and downstream restrictions to fish movement (culverts, piped crossings, etc.).

Forested/Shrub Wetlands

The majority of the wetlands on the property are identified as forested/shrub wetland habitat. These forested wetlands contain mature 2nd growth woodland with an understory dominated largely by non-native shrubs and vines. Dominant vegetation consists of red maple, tulip tree, red oak, black oak, American beech, black willow, multiflora rose, Japanese barberry, forsythia, winged euonymus, spicebush, highbush blueberry, oriental bittersweet, skunk cabbage, sensitive fern and pachysandra.

The U.S. Fish and Wildlife Service National Wetlands Inventory classify these forested/shrub wetlands as PFO1e - Palustrine-Broad-Leaved Deciduous freshwater wetlands that are seasonally flooded/saturated.

Emergent Wetlands

Emergent wetlands are located mainly off the property to the north. A small portion of these emergent wetlands extend onto the northeast corner of the property. Dominant vegetation within these wetlands consists of cattail, tussock sedge, soft rush, bulrush and skunk cabbage. .

The U.S. Fish and Wildlife Service National Wetlands Inventory classify these emergent wetlands as PEM1e - Palustrine-Persistent Emergent freshwater wetlands that are seasonally flooded/saturated.

Wetland Dependent Wildlife

Portions of the wetlands contain areas of seasonal shallow ponding that could potentially provide habitat for waterfowl, wading birds, small mammals, reptiles and amphibians. Mallards, herons, red-winged blackbirds and wood ducks may utilize these wetlands for seasonal breeding, feeding or resting. Several wood duck boxes are located in the wetlands.

Mammals such as raccoon, skunk, fox, weasel, mink, moles, voles, shrews and mice are likely found within the wetland areas.

The wetland has the potential to support reptiles such as eastern box turtle, wood turtle, ribbon snake and northern water snake. Potential amphibian species include bull frog, green frog, leopard frog, pickerel frog, wood frog, gray tree frog, spring peeper, marbled salamander, red-backed salamander, northern eft, American toad and Fowler's toad.

The Connecticut Department of Energy and Environmental Protection Natural Diversity Data Base (NDDDB) was reviewed and revealed no reported sightings of listed flora or fauna on or within 0.75 mile of the property.

PROPOSED DEVELOPMENT

The current proposal is to seek approval for an "Open Space Subdivision", creating 9 lots, two of which will serve the Belta Family. The infrastructure will consist of a private 960-foot long road at 22 feet wide with a 40-foot radius cul-de-sac. The lots range in size from 2.0 to 2.6 acres. 4.9 acres of open space is proposed which includes Muddy Brook and 1.8 acres of riparian wetland.

The lots are to be served via underground utilities for water, gas and electrical/telephone/cable. Each lot will have private septic systems. The storm sewer system consists of a network of catch basins with deep sumps and hooded outlets, and manholes to convey storm water from the pavemen to the proposed detention basin. The natural radial topography of the site has been maintained under the proposed grading plan.

Wetland Impacts and Proposed Mitigation Measures

There are no direct impacts to wetlands or watercourses and there are no activities proposed within the WPLO line or within the various regulatory wetland setbacks.

- No residential dwellings, outbuildings or septic systems are proposed with the 50 ft wetland setback.
- No tennis courts, swimming pools or hot tubs are proposed within the 35 ft wetland setback.
- No driveways or roadways are proposed within the 30 ft wetland setback.
- No fences or pool filtration unit are located within the 25 ft wetland setback.
- No limit of fill, cut, grading or other alteration is proposed within the 20 ft wetland setback.

Potential indirect wetland impacts are minimized through the use of an engineered stormwater management system to detain and treat runoff from the proposed development site. A detailed Erosion and Sediment Control Plan including project phasing and a detailed construction sequence is provided to prevent construction related soil erosion and sedimentation impacts during construction activities.

Stormwater management systems are proposed to detain and treat runoff from the proposed roadway and from individual houses. Each lot is designed with systems to capture the roof areas' runoff and convey the volume to an underground plastic chamber storage and exfiltration technology. The proposed systems will vary to match the requirements of capturing and storing the first 1" of storm water for each proposed lot. For design purposes, the systems are sized for pure storage with no credit taken for infiltration.

An at-grade detention basin is proposed to treat and detain the storm water runoff for approximately 6.7 +/- acres of the developed site, including 550 feet of the proposed road. The remainder of the road runoff flows towards Bayberry Lane where it will be captured and conveyed to an underground infiltration chamber, before entering the Bayberry Lane storm sewer infrastructure.

The proposed detention basin shall include a forebay to provide storm water treatment for the private road. The forebay is sized to meet the CTDEEP requirements for the first flush or 1" of storm water volume of the runoff, which is considered by the CTDEEP to be the highest concentration of pollutants. The outlet control structure consists of a multi stage hydraulic control system comprising of a 12" orifice, 12 feet long x 0.5 high combination weir/orifice, and a double catch basin overflow spillway for the significant storm events. The 18 inch discharge pipe connects to a 24 inch "T" manifold diverter that distributes flow to a modified riprap energy dissipater, which then flows into a 190' bio swale and concrete weir level spreader. The level spreader's overflow discharges to a small stone gravel dissipater strip, which is designed to shed the water to natural occurring soils and the riparian buffer at low velocities.

Landscape Plans are provided for the planting of the stormwater management basin and its border with native seed mixes and trees and for the enhancement of the wetland buffer along the northeast borders of Lots 3, 4, 5 and 6. The wetland buffer in this area consists mainly of scrub shrub vegetation at the edge of the agricultural field that contains non-native invasive plants. Removal of the invasive plants and replacement with 71 plants consisting of a variety of native small trees and shrubs are proposed.

CONCLUSION

No direct wetland impacts are associated with the proposed 9 Lot Open Space Residential Subdivision and no activities are proposed within the regulatory WPLO or wetland setback limits. Indirect wetland impacts are mitigated through the use of stormwater management systems to detain and treat stormwater runoff. Construction related impacts are mitigated through a proposed detail erosion and sediment control plan, project phasing and detailed construction sequence. A portion of the wetland buffer currently vegetated with non-native invasive plants will be enhanced through invasive plant removal and replanting with native wetland shrubs and small trees. It is our professional opinion that the proposed subdivision will have no impact on wetlands or watercourses.



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