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FORESTRY SERVICES ~ WETLAND IMPACT ASSESSMENTS
WETLAND DELINEATIONS AND PERMITTING ~ E&S/SITE MONITORING
WETLAND FUNCTION & VALUE ASSESSMENTS



2/28/2024

Killingly Engineering Associates
P.O. Box 421
Dayville, CT. 06241

Attn: Normand Thibeault P.E.

Re: Wetland function & value and impact assessment report for the proposed development for the property located at 18 Kent Street, Killingly, Connecticut.

Dear Mr. Thibeault,

At your request, I have reviewed the plan entitled: IMPROVEMENT LOCATION SURVEY SHOWING PROPOSED BUILDING ADDITION PREPARED FOR LEWIS H. MERCHANT & TINA M. MERCHANT, 18 KENT STREET, KILLINGLY, CONNECTICUT by Killingly Engineering Associates, dated 12/29/2023.

I have inspected the above referenced property for the purposes of assessing the wetland functions and values and potential impacts to the inland wetlands and watercourses in proximity to the proposed development.

The wetland delineation was conducted on 5/10/2023 and the function and value assessment was conducted on February 23, 2024.

**Existing Conditions**

The property totals .717 acres in size and is located at 18 Kent Street, Killingly, CT. It is situated on the north side of Kent Street.

The majority of the property is comprised of a typical residential/yard areas with a wooded area to the north of the parcel, with nearly level to gradually sloping topography.

**Wetlands**

A small scrub-shrub wetland was delineated in the northwest portion of the property.

This wetland has formed in a depressed portion of the property due to the persistent wetness from the seasonally high water tables and stormwater discharge associated with Kent Street.

This wetland has formed in a depressed portion of the property due to the persistent wetness from the seasonally high water tables and stormwater discharge associated with Kent Street.

This wetland shows signs from historic disturbance and filling such as fill piles along its boundaries and buried dump materials within its confines.

The majority of these scrub-shrub wetlands have been cleared, but were vegetated typical wetland shrub species such as arrowwood, sweet pepperbush, multiflora rose, speckled alder, winterberry and spicebush. Other species included grape vines, greenbrier, and poison ivy.

Herbaceous vegetation included sensitive, lady & cinnamon ferns, sedges, skunk cabbage, jewelweed, various mosses and miscellaneous grasses.

No wildlife tracks/sign were found or directly observed in and adjacent to the wetland, this is most likely due to the proximity of the residential areas and Kent Street. Undoubtedly, it serves as habitat for small mammals and bird species.

## Wetland Functions and Values

The scrub-shrub wetlands, were inspected to determine wetland functions and values utilizing the Army Corps. Of Engineers methodology as outlined in "The Highway Methodology Workbook Supplement". This methodology recognizes eight categories of wetland functions and six categories of wetland values.

The 8 wetland functions include: groundwater recharge/discharge, floodflow alteration/storage, fish/shellfish habitat, sediment/toxicant/pathogen retention, nutrient removal/retention/transformation, production export, sediment/shoreline stabilization and wildlife habitat.

The 6 wetland values include: recreational value, educational/scientific value, uniqueness/heritage value, visual quality/aesthetics, threatened/endangered species habitat and marine fish & shellfish habitat.

### Scrub-shrub wetland functions:

The following is a list of the wetland *functions* exhibited by these wetlands and watercourses and their rationale/qualifiers:

**Sediment/toxicant retention:** Mineral, fine grained and organic soils are present in the wetlands, the wetland edge is broad and intermittently anerobic. (The lack of oxygen allows for the transformation and binding of toxicants), no indicators of erosive forces or high water velocities are present in the wetlands.

**Nutrient removal/retention:** An overall potential for nutrient removal and retention exists in the wetlands, and the wetlands are saturated for most of the season creating anerobic conditions. The slowly drained mineral and organic soils which are present in these anerobic conditions harbor nitrogen fixing bacteria which provide the opportunity for nutrient

and potassium and water moves slowly through the wetlands which increases the available period of time for removal and retention.

**Wildlife habitat:** Only a small measure of wildlife habitat existed prior to clearing, this was restricted to habitat for small mammals, birds, reptiles and amphibians.

**Scrub-shrub wetland values:** None exhibited.

**Summary:**

Overall, the wetland function and value assessment indicates that the wetlands exhibit three limited wetland functions: sediment/toxicant retention, nutrient removal/retention and wildlife habitat.

None of the wetland values were exhibited, recreation, educational value, endangered species habitat value, uniqueness/heritage value, visual quality/aesthetics, fish/shellfish habitat (marine). This due to its small size, location and characteristics

## Potential wetland impacts

The project plans and site were reviewed to assess the potential impacts to the wetlands and watercourses from the proposed development.

On this parcel, a new gravel driveway, garage, pool and topsoil stockpile are proposed in proximity to the wetlands. This will require a fill proposing 2,830 square feet of disturbance to the wetland.

**Direct wetland impacts:**

2,830 square feet of wetlands are proposed to accomplish the grading necessary for the design of the project. In this area, all of the existing wetland functions will be negated.

**Potential indirect impacts:**

The potential short-term impacts associated with the initial land clearing, top soil stripping and construction would include potential sediment discharges during significant storm events if the E&S measures breach adjacent to the topsoil stockpile.

Regarding these potential impacts, I have the following recommendations:

1. It is my recommendation that silt fencing backed by staked haybales be shown on the plan between the wetlands and the fill proposed at elevation 278 on the eastern and southern sides of the wetlands

I would also suggest that the E&S measures be inspected daily and after any significant rain events.

2. I would suggest that the topsoil stockpile be moved further to the east.

3. The remaining wetlands that have been stripped of vegetation be replanted with New England Wetmix. As the site is open with no overstory, the existing native shrub and herbaceous vegetation will re-sprout and re-establish.

It is my opinion, provided that the E&S measures are correctly implemented and maintained throughout the project timeframe, the E&S inspections are conducted as proposed and no significant discharges of sediments reach the wetlands, the disturbance associated with the construction adjacent to the wetlands will not significantly impact the remaining wetlands or their existing functions or values due to encroachment, erosion or sedimentation.

Once the disturbed areas are re-vegetated and stabilized, the well- to moderately well-drained soils will allow for good infiltration of storm water runoff both during and after construction.

The quick and permanent establishment of vegetation in the disturbed areas is crucial to the prevention of post-construction erosion.

Wetland Hydrology

I see no direct or indirect impacts to the wetland/watercourse hydrology as a result of the proposed development aside from the filling.

The impervious surface of the roof areas and pervious surface infiltration will be an input to the existing hydrology, through some minor overland flow due to grading, as ground water recharge or as direct discharge during significant storm events. It is my professional opinion that these inputs will augment and improve the existing hydrology of the wetlands. These added inputs will allow for increased seasonal inundation in depressed areas in the wetlands and will provide a better diversity in wildlife habitat as well.

Water Quality:

The only potential direct impact to water quality in the wetlands would be due to the direct untreated discharge of stormwater from Kent Street.

The overall distances of the impervious surfaces and buildings from the wetlands, coupled with the gradual topography, and well-drained upland soils allowing for good infiltration of surface flows will also improve overall water quality by reducing suspended sediments.

Potential nutrient loads from lawn fertilizers will be minor, as the herbaceous vegetation will aid in nutrient uptake, and nitrogen fixing bacteria found in the anerobic wetland soils help bind and fix nitrogen.

I see no significant impacts to the water quality in the wetlands. The limited sheet flow discharges on the gradual slopes will infiltrate in the well- drained soil types and/or travel as sheet flow eventually into the wetlands.

In summary, I see no direct or adverse impacts to the existing wetlands or their functions and values from the proposed project aside from the proposed filling.

This is provided that the recommended erosion and sedimentation control features are implemented, maintained and monitored throughout the construction and post construction timeframe.

If you have any questions concerning the site assessment or this report, please feel free to contact me.

Sincerely,

Joseph R. Theroux

Joseph R. Theroux
Certified Forester and Soil Scientist
Member SSSSNE, SSSA