

HIGHLAND SOILS LLC

WETLAND REPORT

FOLSOM CONSTRUCTION

595 NUTMEG ROAD NORTH

SOUTH WINDSOR, CONNECTICUT

**PREPARED FOR
DESIGN PROFESSIONALS**

**BY
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INTRODUCTION

The site is located on the west side of Nutmeg Road North, South Windsor, CT. The site was formerly developed with a building, paved parking areas and a catch basin drainage system. The building was removed in the past and the parking areas and other infrastructure are still in place.

The site is located in the Stoughton Brook Watershed and the Brook flows along the southern limits of the site and then through the rear of the site prior to crossing under the railroad tracks located along the western limits of the site.

The inland wetland boundaries on the property were field delineated on November 8, 2013. The wetlands were field delineated in accordance with the standards of the National Cooperative Soil Survey and the definition of wetlands as found in the Connecticut General Statutes, Chapter 440, Section 22A-38. The prepared plans have been reviewed and the representation of the field delineated wetlands is substantially correct.

EXISTING CONDITIONS

The site was formerly developed and the front portion of the site contains existing pavement areas and an existing drainage system. It appears that during the site's original development, a portion of Stoughton Brook was relocated and piped along the southern property line. In addition to the relocation of the Brook, a small dam was constructed in the wetland system and a storm water management structure was installed at the dam location. The storm water management structure consisted of a larger diameter pipe with a constrictor plate and trash rack.

This area of wetlands is wooded with mainly mixed hardwood species dominated by a variety of Oaks and Beech with Red Elm, Red Maple and Grey Birch also present. Asiatic Bittersweet was also prevalent. Sweet Pepperbush was the dominant shrub species and the ground cover was obscured by snow cover.

Although Stoughton Brook was relocated, the wetland area (Flags #1-#46) still retains its wetland characteristics due to ground water seepage. The former Stoughton Brook channel is no longer visible through this portion of the resource. Some open water was noted near the man-made dam but there is little evidence of persistent surface flow in the wetland.

As stated earlier a portion of Stoughton Brook was relocated. The Brook now flows in a pipe along the southern property line where it discharges into a man-made channel before reconnecting with its natural channel approximately 500 feet west of Nutmeg Road. The man-made channel is stable although the side slopes are very steep. The outlet from the pipe was lacking proper outlet protection.

The remainder of the wetland system is relatively natural in that it has not been altered by recent human activity. Remnants of an older earthen dam were noted in the wetland system near wetland flag #54. Stoughton Brook meanders through its flood plain from this point to its exiting the property along the western property line. Indications of high flow were noted (sand deposits, drift lines) but the channel is stable and no excessive erosion was noted.

The vegetation in this portion of the wetland is more mature with large Oak trees dominating the landscape. Red Maple was also present as were saplings of Birch, Beech and White Pine.

The soils on the property are dominated by sandy outwash deposits. The uplands contain deep sands of the Windsor Series and the soils in the wetlands are from the poorly drained Walpole Series. The rear of the property is undeveloped and contains a mixed hardwood species indicative of drier sandy soils.

WETLAND FUNCTIONS

The functions and values of the wetlands will be described in a qualitative manner modeled after the method used by the US Army Corps of Engineers. The information is from *The Highway Methodology Workbook Supplement*. This publication uses a descriptive approach to assessing functional values, versus the CT D.E.P. approach, which uses a quantitative or numerical approach to ranking wetland functions and values.

Ground Water Recharge/Discharge - This function considers the potential for a wetland to serve as a ground water recharge and/or discharge area. It refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

The wetlands are ground water discharge wetlands as noted by the areas of seepage along its edges. The site is underlain by glaciolacustrine deposits that limit the recharge of deeper ground water. This is a primary function.

Floodflow Alteration - This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of flood waters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas.

The front portion of the wetlands, altered by the relocation of the Brook and the construction of a dam and storm water outlet control structure, has potential for this function but appears to be under-utilized at this time.

The remainder of the wetland is dominated by Stoughton Brook which limits the effectiveness for this function. This is not a primary function of the wetlands.

Fish and Shellfish Habitat - This function considers the effectiveness of seasonal or permanent watercourses associated with wetland in question for fish and shellfish habitat.

Stoughton Brook has the potential for fish habitat although no detailed assessment of the habitat was performed. A large culvert (rail road tracks and Route 5) separates this site from the downstream environment to the west and this may limit fish passage.

Sediment/Toxicant/Pathogen Retention - This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants or pathogens in runoff water from surrounding uplands, or upstream eroding wetland areas.

The front portion of the wetland has potential to perform this function although there are no significant sources of potential pollutants in the water shed at this time.

The rear portion of the system is dominated by Stoughton Brook which acts as a conductor for surface water, thus limiting the potential for the retention functions. This is not a primary function.

Nutrient Removal/Retention/Transformation - This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands, and the ability of the wetlands to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers or estuaries.

As with the previous function, the front portion of the wetlands has some ability to perform this function. However, the types and density of vegetation are not sufficient for utilization of nutrients.

The rear portions of the wetlands are not suitable for this function due to the presence of Stoughton Brook which is a conveyance system that provides little opportunity for transformation of nutrients.

Production Export - This function relates to the effectiveness of the wetland to produce food or usable products for human, or other living organisms.

The wetlands contain few flowering plants and do not export organic matter in significant quantities. This is not a primary function.

Sediment/Shoreline Stabilization - This function evaluates the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

Stoughton Brook is associated with a small flood plain and the flood plain is a buffer against erosion during storm events. This function is associated with the rear of the site but should not be considered a primary function.

Wildlife Habitat - This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and wetland edge. Both resident and/or migrating species are considered.

Although utilization of the site may occur, it is an island of habitat. The sites to the north, south and east are developed and Route 5 lies to the west. Additionally the site does not contain diversity in types of vegetative communities or diversity in cover classes. This is not a primary function.

Recreation – (Consumptive and Non-Consumptive) This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting and other active or passive recreational activities.

The site is limited in size and does not contain recreation opportunities. This is not a primary function.

Educational/Scientific Value - This function considers the suitability of the wetland as an “outdoor classroom” or for scientific research.

The site does not meet the requirement for this value. This is not a primary value.

Uniqueness/Heritage - This value considers the effectiveness of the wetland for special values such as archeological sites, rare and endangered species habitat or uniqueness for its location.

The site is at the head waters of Stoughton Brook and at the beginning of the formation of terrace escarpments. Other than those features it is fairly typical of the surrounding area. An inquiry has been made to the Department of Energy and Conservation (D.E.E.P.) regarding habitat for rare and endangered species.

Visual Qualities/Aesthetics - This value relates to the visual qualities of the wetlands.

The wetlands offer very localized visual qualities. Stoughton Brook in the rear of the site is in a low area and there are localized views into the wetlands. Overall this is not a primary value.

Endangered Species Habitat – This value considers the suitability of the wetland to support threatened or endangered species.

An inquiry has been made to the D.E.E.P. for additional information.

In summary the wetlands are ground water discharge wetlands. The front portion of the wetlands, having been altered, has some potential for flood flow alteration and water quality benefits. The rear portion of the system is more natural and contains Stoughton Brook, a defined conveyance feature that limits the effectiveness for most of the listed functions.

During the wetland delineation work a couple of observations were made regarding the site. The dam that was constructed across the wetlands system is being colonized by tree species. The growth of trees on this type of structure can compromise the integrity of the structure. A small depression was constructed in the top of the dam to serve as an emergency over flow. Although there may be little use for this emergency structure it lacks protection from erosion. Rip rap across this portion of the dam may be warranted. The outlet pipe at the rear property line has accumulated debris and requires some minor maintenance.