

INLAND WETLANDS COMMISSION
MINUTES
Regular Meeting of June 13, 2018 at 7:30 p.m.
Council Chambers, Newtown Municipal Center
3 Primrose Street, Newtown, CT

These Minutes are subject to Approval by the Inland Wetlands Commission

Present: Sharon Salling, Craig Ferris, Vanessa Villamil, Mike McCabe, Suzanne Guidera

Absent: Kristen Hammar, John Davin

Staff Present: Steve Maguire, Senior Land Use Enforcement Officer, Dawn Fried, Clerk

Ms. Salling opened the meeting at 7:30 p.m.

PENDING APPLICATIONS

Application #18-12 by David Basak-Smith, property located at 71 Lakeview Terrace, for construction of a 5-ft. wide switch-back trail from the house to the lake bordered on both sides by a 1 ½- ft. high stone wall and plantings.

The applicant has requested the application be tabled because he is waiting for revised plans from his engineer.

PUBLIC HEARING

Application #18-14 by Hawleyville Properties, LLC, Matthew D'Amico, property located at 90 Mt. Pleasant Road, 10 Hawleyville Road and 1 Sedor Lane, for the construction of medical office buildings (275,000 sq. ft.) and warehouse (250,000 sq. ft.)

Mr. McCabe read the public notice in to the record. Ms. Salling welcomed the public and stated the public hearing process.

Mr. Michael Sullivan P.E., BL Companies, Meriden, CT, spoke on behalf of the applicant. Mr. Sullivan presented the abutter receipts.

Mr. Sullivan gave an overview of the "Executive summary" – See attached.

Mr. Sullivan gave an overview of the "Soils Identified" – See attached.

Mr. Sullivan stated the proposed site consists of two halves at this time. One half consists of three medical office buildings and the other half a warehouse building. The three office buildings will have a combined total of 275,000 sq. ft. The western most building will have 3 floors which totals 120,000 sq. ft., the center building is 2 floors which totals of 75,000 sq. ft. and the building closest to the road is

also 2 floors which totals 80,000 sq. ft. The other half of the site will have a warehouse building which totals 250,000 sq. ft.

The total number of parking spaces for the entire site will be 1,514. The medical buildings will have 1,382 of which 213 of those spaces will be under building #3 and the remaining 132 parking spaces will be for the warehouse.

Mr. Sullivan reviewed the "Stormwater Management" document. See attached.

Primary stormwater features are:

- 2 stormwater ponds
- 4 rain gardens
- 3 underground detention infiltration systems

Due to the site having greater than 15 acres of disturbance a third party independent review is required by the DEEP for the stormwater design.

Mr. Sullivan stated the following erosion sedimentation controls will be in place: silt fences, hay bales, siltsacks, soil stock piles, anti-tracking pads, erosion control blankets on the slopes, concrete wash pits, temporary sediment traps and diversion swales along proposed roads and access ways.

Landscaping plan has been submitted.

Mr. Sullivan stated the wetland mitigation will be discussed with the town and will depend on the soil conditions and hydrology. Mr. Sullivan also stated they will look to see which mitigation option is the best fit for the project.

Mr. Sullivan stated that there are three wetland areas impacted totaling just under 4,300 sq. ft.

Mr. Sullivan introduced Mr. James Cowen, Wetland Scientist, Davison Environment, Chester, CT. Mr. Cowen gave an overview of the six wetland areas. He described each of the wetland areas and pointed out that Wetland #5 is the largest wetland system on the site.

Mr. Cowen summarized the wetland functions and values from the from the "Wetland Delineation and Functional Evaluation" document. See attached.

Mr. Cowen also gave an overview of the "Summary of Wetland Functions and Values" Chart. See attached.

Mr. Cowen spoke about the dense invasives and the difficulty walking the property. He stated he needs to find the correct hydrology in order to get the correct wetland creation area.

Ms. Salling was concerned that the mitigation plan will not be developed due to the lack of information regarding hydrology and the inability to access the dense wetland area. Ms. Salling asked Mr. Cowen if he was confident about accurately identifying the wetlands without observing them. Mr. Cowen

responded that he took extra time because of the denseness and yes he is confident he got the main systems.

Mr. Ferris asked what is the purpose of the road extension off of the cul de sac. Mr. Sullivan responded that it will be for a possible future road connection.

The Commission asked why the warehouse was so close to the wetland area since there was ample space to the west. Mr. Sullivan responded that the road frontage will be used for potential future development.

The Commission discussed a third party independent review of the application.

The Commission requested the following:

- summarize the history of the flagging and significant changes.
- a statement of the final analysis of the wetlands and whether they are significantly impacted.
- alternative options for the location of the buildings to decrease impacted wetland areas
- clear an access way through the dense wetland area for the Commissioners to walk
- Ms. Salling was concerned about the maintenance of the rain gardens and would like the applicant to submit a rain-garden management plan.
- change "Wallingford" to "Newtown" in Wetland Mitigation Monitoring
- vernal pool confirmations
- PowerPoint format recommended for IWC presentation
- more detailed mitigation plan
- enhancement of the wetland areas by removing invasives such as the barberry and multiflora rose
- consideration of more pervious areas in the parking lot and use of other materials
- planting mitigation plan for the buffer area in the upland review.

PUBLIC PARTICIPATION

Patrick Napolitano, 13 Whippoorwill Hill Road, stated that in 2007 the neighbors fought hard for a zone change from M2 to M2A. Also, Mr. Napolitano wanted to know where Whippoorwill Hill Road is on the site plans and stated the street should have been pointed out. He also had questions regarding wells and water sources but was told they are not an IWC issue.

Kristin Roberts, 6 Whippoorwill Hill Road, questioned if the site will be enhanced with native species. Ms. Roberts asked whether plantings were considered.

Michael Ricardi, 16 Whippoorwill Hill Road, had concerns that added water to the detention ponds and weeping water on the deep slopes of the hill will create flooding.

Bill Hickock, 14 Whippoorwill Hill Road, asked how far the wetlands are from Whippoorwill Road. Mr. Sullivan responded between 900 and 1,000 feet.

It is recommended that the public hearing remain open and be continued to the next regularly scheduled meeting of the Inland Wetland Commission on June 27, 2018 at 7:30 PM in Council Chambers at the Municipal Center located at 3 Primrose Street.

APPROVAL OF MINUTES for May 23, 2018

Under "Pending Applications" change "The development" to "The area", change "case to case" to "case by case", change "him on" to "him of". Mr. McCabe moved to accept the amended minutes from May 23, 2018. Ms. Guidera seconded. All in favor. The minutes from May 23, 2018 were approved.

ACCEPTANCE OF APPLICATIONS

Application #18-15 by Eduard Abukhovich, property located at 82 Huntingtown Road, for pond dredging.

ADJOURNMENT

With no additional business, Mr. Ferris moved to adjourn. Ms. Guidera seconded. All in favor. The meeting of June 13, 2018 was adjourned at 9:04 pm.

Respectfully Submitted, Dawn Fried, Clerk.

Executive Summary

This report has been prepared in support of a Permit Application submission to the Town of Newtown by Claris Construction for the proposed development at Mount Pleasant Road, Hawleyville Road and Sedor Lane. The subject property is approximately 140.2 acres in size and is currently an undeveloped, wooded area with some residences on the southern side abutting Mount Pleasant Road.

The property is bordered to the north by Interstate 84 and its entrance ramps. The property is bordered to the northeast by agricultural open space and to the southeast by residences on Whippoorwill Hill Road. The southern stretch of the property is bordered by Mount Pleasant Road with more residences on Tory Lane and Sawmill Road and Christ the King Lutheran Church on the opposing side of the road. The property is bordered by more woods and Pond Brook to the west along Hawleyville Road. Across Hawleyville Road exists more residences on Hillcrest Drive. The subject property is located within the Town of Newtown Industrial Zone M-2A (M-2A) and Residential R-2 (R-2) Zone with the entirety of the development on the M-2A portion of the property. The abutting properties surrounding the subject parcel are zoned Residential R-1 and Residential R-2 with some non-adjacent parcels across Hawleyville Road and Mount Pleasant Road zoned as Hawleyville Center Design District (HCDD) and General Business Zone (B-2).

Generally, the topography slopes to an existing stream in the center of the site that discharges to a low point just south of Interstate 84. Part of the western side of the property discharges to a pond in the southwestern side and the eastern side of the property discharges to the northeastern low point just south of Interstate 84. The low point south of Interstate 84 is conveyed under the highway by existing culverts. In addition to the onsite stormwater, these low points accept some offsite flows from the north and northeast. Elevations of the existing topography within the subject property range from 670 feet to 408 feet.

The proposed stormwater management system is designed to be in compliance with the Town of Newtown regulations as well as the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control and the 2004 Connecticut Stormwater Quality Manual.

A HydroCAD model, utilizing TR-55 methodology, was developed to evaluate the existing and proposed drainage conditions of the property. The results of the analysis demonstrate that there will not be an increase in peak stormwater runoff rates for the 2-, 10-, 25-, and 100-year storm events.

The stormwater regulations require the stormwater runoff from the proposed development for all intensities and durations of rainfall up to the 100-year storm event shall not exceed that of the existing conditions. The proposed stormwater detention has been partitioned into a series of systems which combined will decrease the stormwater discharge from the site for all storm events. The utilization of Rain Gardens throughout the site, the stormwater design takes a Low Impact Development approach whenever possible to treat the stormwater as close as possible to where it is generated. The first rain garden is located to the south of Medical Office Building 1 and has been designed to accept and attenuate peak flows. Additionally, there are three more rain gardens located to the west of Medical Office Buildings 2 and 3 between their parking fields and the proposed road. Proposed subsurface detention systems are located in the parking field for Medical Office Building 1, the parking field for the Medical Office Building 2, and the roof runoff from the warehouse building.

Water Quality Best Management Practices (BMPs) have been incorporated into the project design to provide a minimum required 80% TSS removal. The impervious area stormwater runoff will be captured by curb inlet type hooded catch basins with deep sumps, which will then be conveyed through hydrodynamic separators or sediment forebays, either to a subsurface stormwater detention chamber or a surface stormwater detention pond, and then ultimately outlet to one of the design points. All other landscaped areas will continue to flow to the associated design points as the site currently does today. The Stormwater quality calculations demonstrate the use of a formal street sweeping program, deep sump catch basins with hoods, hydrodynamic separators, rain gardens and stormwater ponds. The combination of these features will provide the minimum required 80% TSS removal as required in the CT Stormwater Quality Manual, calculations can be found in Appendix D for reference.

Existing Site Conditions and Hydrologic Conditions

General Site Information

The existing site consists mainly of wooded area, multiple single-family homes, and minor areas of residential lawn with various plantings.

The site soils identified by the United States Department of Agriculture (USDA) Natural Resources Conservation Services (NRCS) are Ridgebury, Leicester, and Whitman soils (0-8% slopes, extremely stony), Scarborough muck (0-3% slopes), Woodbridge fine sandy loam (0-3% slopes, 3-15% slopes extremely stony, and 8-15% slopes), Canton and Charlton fine sandy loams (3-15% slopes extremely stony), Hollis-Chatfield-Rock outcrop complex (15-45 % slopes), Paxton and Montauk fine sandy loams (3-8% slopes, very stony and 3-15% slopes extremely stony), and Udorthents-Urban land complex. Per the USDA the NRCS Hydrologic Soil Group the soil rating

for within the project area are B, C, and D. A copy of the USDA NRCS Hydrologic Soil Group Map is included in Appendix A for reference.

Per the FEMA Flood Insurance Rate Map Number 09001C0165F for Town of Newtown, Connecticut, map revised date: June 18, 2010, the majority of the site resides in FEMA Flood Hazard Zone X (unshaded) except a small portion of the southwestern corner of the site that resides in Zone AE. A copy of the FEMA Flood insurance rate map is included in Appendix A for reference.

Existing Hydrologic Conditions

The existing site drainage area that was analyzed totals 155.5 acres and has approximately 1.4% impervious ground cover. Due to the topography of the area, there is a significant portion of the adjacent properties to the northeast and to the north are included in this analysis. There is currently no existing stormwater management system onsite. Stormwater from the subject property and portions of the adjacent properties flows untreated to four design points throughout the site: a western low point (Design Point 1, DP-1), an inlet to the north (Design Point 2, DP-2), a low point in the northeastern corner (Design Point 3, DP-3), and a low point in the northwestern corner (Design Point 4, DP-4).

The following is a brief analysis of the existing design points as shown on the enclosed Existing Drainage Plan (ED-1), in Appendix E.

Existing Drainage Area 10 (EDA-10): This drainage area is 35.02 acres and is approximately 0.78% impervious, consisting mainly of native wooded vegetation cover and impervious roofs and drives associated with the single-family homes on Sedor Lane. About half of the area is composed of existing wetlands. EDA-10 encompasses the southwestern portion of the proposed site. Stormwater runoff from this drainage area flows directly to the existing low point on the western side of the property, Design Point 1 (DP-1).

Existing Drainage Area 21 (EDA-21): This drainage area is 80.07 acres and is approximately 1.15 % impervious, consisting almost entirely of native wooded vegetation with some impervious roofs and drives associated with the adjacent property single-family homes along Mount Pleasant Road and Whipoorwill Hill Road. EDA-21 is the largest drainage area and includes the center portion of the site with an existing stream located in wetlands. In the EDA-21 drainage area, the stormwater runoff flows into the central wetlands, along the existing central stream, and ultimately to the inlet located just north of the property, Design Point 2 (DP-2).

Developed Site Conditions and Hydrologic Conditions

General Site Information

The proposed site development consists of proposed medical office buildings totaling up to 275,000 s.f. and a 250,000 s.f. warehouse building, associated impervious parking and drives, various subsurface detention systems, several above-ground stormwater ponds and rain gardens, and lawn with various plantings. The exfiltration rate for ponds and rain gardens was assumed to be 0.1 in/hr. per recommendations from the NRCS Soil Survey data that indicated infiltration rates for existing soils range between 0.00-0.14 in/hr.

Proposed Hydrologic Conditions

For the purposes of the drainage analysis and discussion, the design points for the proposed conditions analysis are the same as the existing conditions analysis. The proposed development has been analyzed as sixteen sub-drainage basins as illustrated on the enclosed Proposed Drainage Plan (PD-1) located in Appendix E. The proposed analysis includes a total of 155.5 acres and is approximately 16.6% impervious. The intent of the proposed site drainage is to mimic existing drainage patterns to the maximum extent practical. The site stormwater system will provide stormwater quantity and quality improvements through a formalized street sweeping program for the impervious surfaces, the installation of subsurface detention systems throughout the site, and various detention ponds and rain gardens, before ultimately flowing to the design points. These measures will treat the stormwater quality flow through various means to provide water quality treatment in conformance with the State of Connecticut Water Quality Manual. For the hydrologic analysis, the developed site retains the same Design Points as the existing model. The following drainage areas were developed to model the proposed site improvements.

Proposed Drainage Area 110 (PDA-110): PDA-110 is a 23.09-acre drainage area is approximately 1.19% impervious which consists mainly of native wooded vegetation cover and impervious roofs and drives associated with the single-family homes on Sedor Lane. About half of the area is composed of existing wetlands. PDA-110 encompasses the southwestern portion of the proposed site. Stormwater runoff from this drainage area flows directly to the existing low point on the western side of the property, Design Point 1 (DP-1).

Proposed Drainage Area 111 (PDA-111): PDA-111 is a small 0.46-acre drainage area which consists pervious lawn area and a small portion of impervious proposed road. This area is approximately 70.57% and the runoff flows directly from the proposed road to the existing low point on the western side of the property, Design Point 1 (DP-1).

1.0 INTRODUCTION

Davison Environmental, LLC (DE) was retained to provide wetland delineation and assessment support to BL Companies for a proposed commercial development at northwest corner of the intersection of Mount Pleasant Road (Route 6) and Hawleyville Road (Route 25) in Newtown, CT. Please refer to Figure 1 - Site Location Map and Figure 2 - Aerial Location Map in Attachment A.

Davison Environmental, LLC soils and wetland scientists delineated the limits of the regulated wetlands and watercourses at the site and completed a functions and values assessment. We also identified a potential compensatory wetland mitigation site and provided preliminary recommendations for design, construction, maintenance and monitoring of the mitigation site.

2.0 PROJECT DESCRIPTION

The proposed site development consists of proposed medical office buildings totaling up to 275,000 s.f. and a 250,000 s.f. warehouse building, associated impervious parking and drives, various subsurface detention systems, several above-ground stormwater ponds and rain gardens, and lawn with various plantings.

3.0 EXISTING ENVIRONMENT

3.1 General

The ±140.2-acre project Site is located in an area of undeveloped land and residential properties in the northwest portion of the Town of Newtown, CT, proximate to Exit 9 off Interstate 84. The site is bounded by Hawleyville Road (Route 25) on the west; Mount Pleasant Road (Route 6) on the south; Interstate 84 on the north; and single family homes along Whippoorwill Hill Road and vacant land on the east. The landform consists of two drumlinoidal hills oriented northwest to southeast, with the highest elevations along Route 6. The land rises moderately eastward from Hawleyville Road, falls off moderately to a central valley and then rises more steeply to the east again. There is a south-draining stream and wetland system along Hawleyville Road, a north-draining stream and wetland system in the central valley, and another north-draining system along the eastern property line.

3.2 *Vegetative Cover Types*

The majority of the site is second growth deciduous forest. There are also scattered areas of more recent late old field succession. Many of the wooded areas have a dense shrub understory. There are narrow bands of forested wetlands along the drainageways noted above.

3.3 *Wetland Delineation*

The wetland delineation was conducted Davison Environmental soils and wetland scientists from November 24 through December 11, 2017. The delineation was conducted according to the requirements of the CT Inland Wetlands and Watercourses Act (P.A. 155). Wetlands are defined as areas of poorly drained, very poorly drained, floodplain, and alluvial soils, as delineated by a soil scientist. Watercourses are defined as bogs, swamps, or marshes, as well as lakes, ponds, rivers, streams, etc., whether natural or man-made, permanent or intermittent. At this site, the wetlands consist primarily of Ridgebury, Leicester and Whitman, extremely stony, fine sandy loams and Scarboro muck. The Ridgebury and Leicester series have a seasonal high water table at or near the surface (0-6") from fall through spring. The Leicester soil has a more friable compact layer or hardpan, while the Ridgebury soils have a dense to very dense compact layer. The Whitman soil has a high water table for much of the year and may frequently be ponded. The Scarboro soil is a very deep, very poorly drained soil on outwash plains, deltas, and terraces. The water table is at or near the surface much of the year and many areas are ponded for short periods. This is a mineral soil, but it has a mucky surface horizon. A wetland delineation report is included in Attachment C.

3.4 *Mapped Wetland Soil Types*

Digitally available soil survey information was obtained from the Natural Resources Conservation Service (NRCS) and generally confirmed during the wetland delineation review. Soil types are depicted on the soil map and described in the Wetland Delineation Report in Attachment C.

3.5 *Wetland Descriptions*

There are several distinct wetland units at the site, as shown on Figure 3. Their general characteristics and common vegetation are described below:

Wetland 1 is located in the western portion of the site, east of Hawleyville Road and northeast of the intersection of Hawleyville and Mount Pleasant Roads. Portions of it appear to have been modified for use as a retention or sediment pond at one point. Much of the wetland is wooded, with Red Maple in the canopy and a dense shrub layer of Spicebush, Japanese Barberry¹, Multi-flora Rose*, honeysuckle* and Arrowood. The northern portion of this wetland is a semi-permanent pond greater than 2 feet deep during May, 2018. A very soft, silty and mucky bottom prevented a detailed survey of the interior of the pond. Aquatic vegetation included Duckweed and Watercress. The ponded area discharges to an intermittent channel that parallels Hawleyville Road. In the southeast portion of this wetland, there is also a moderate-sized patch of very wet meadow. Skunk Cabbage, Tussock and Fox Sedge, Meadowsweet, Giant Goldenrod and rushes are common in this area. The ponded portion of this wetland was investigated as a potential vernal pool (PVP 1), as described in Section 5.0.

Wetland 2 is a large, isolated wetland located to the east and upslope from Wetland 1. It slopes gradually down to the north and west. The southern portion of Wetland 2 is seasonally saturated and wooded with similar vegetation to Wetland 1. The northern-most portion of this wetland is very hummocky with pit and mound topography and evidence of shallow inundation during the early portion of the growing season. The vegetation is more open in this area, dominated by Skunk Cabbage, sedges, Soft Rush, Haircap and Sphagnum Moss, Tall Meadow-rue, and scattered shrubs and trees such as Red Maple, ash, Multi-flora Rose, Japanese Barberry*, and Morrow's Honeysuckle*. This portion of Wetland 2 was investigated as a potential vernal pool (PVP 2), as described in Section 5.0.

Wetland 3 is a small, isolated wetland in the north-central portion of the site, a short distance south of I-84. Portions of this wetland are exhibit pit and mound topography and are dominated by wet meadow and emergent species. There was some evidence of periodic inundation. This portion of Wetland 2 was investigated as a potential vernal pool (PVP 3), as described in Section 5.0.

Wetland 4 is hydrologically contiguous with Wetland 1. The wetland contains a small pond and perennial outlet stream immediately northeast of the intersection of Hawleyville and Mount Pleasant Roads. It was determined by the survey that much/all of it is just off west of the western site boundary. However, due to the potential presence of vernal pool amphibian breeding habitat, it was included in the characterization of the site resources (PVP 4, as

¹ Species marked with an asterisk (*) are considered invasive.

described in Section 5.0. The outlet stream is predominately confined by stone walls. Red Maple, Multiflora Rose, Duckweed, Watercress, Swamp Goldenrod, Skunk Cabbage and sedges are common.

Wetland 5 is the largest wetland system at the site. This north-south oriented wetland and watercourse system is located in the approximate center of the site and slopes downward from Mount Pleasant Road on the south to I-84 on the north. The northern (upper) portions are narrow wetlands flanking two intermittent watercourses. These two "legs", which are dominated by shrubs such as Multi-flora Rose*, Japanese Barberry, join near the center of the site, where the wetland broadens out into a wooded swamp. Red Maple, Spicebush, Skunk Cabbage, sedges, White Ash, and Japanese Barberry typify this portion of the system. Further north, the wetland again narrows down, flanking what appears at that point to be a perennial stream.

Wetland 6 also extends across the entire site at the eastern property line. It is a north-draining, wooded wetland and stream system. It is remote from any proposed development ($\pm 700'$) and on the other side of a drainage divide and therefore unlikely to be affected in any way by the proposed development. It was not examined in detail for this assessment.

4.0 VERNAL POOL HABITAT

During the wetland delineation in the early winter of 2017, DE identified four areas as potential vernal pools (PVPs), due to their morphology and apparent hydrology. A BL Companies wetland scientist conducted a detailed survey of these areas in the late winter/early spring of 2018. The survey period coincided with reports of amphibian breeding activity throughout the state. PVPs 1 and 4 were inundated during the period. Based on aerial photography, morphology and vegetation, these two areas are likely semi-permanent ponds. PVPs 2 and 3 were not inundated during the survey period. There was no visual or auditory evidence of obligate vernal pool species breeding activity, adults or juveniles in any of the potential vernal pools. The report concluded that "[T]here are no functioning vernal pools present on or immediately adjacent to the site". A copy of the full report is included in attachment D.

5.0 NATURAL DIVERSITY DATA BASE CONSULTATION

The CT Department of Energy and Environmental Protection (DEEP) maintains and publishes the Natural Diversity Data Base (NDDB). The NDDB is a compilation of known locations of state or U.S.-listed species and critical habitats that have been reported to the DEEP. These

locations are represented by polygons on maps published by the NDDB. The maps are updated twice a year. The most recent maps were reviewed on the 6.4.18 via the CT Environmental Conditions Online web site.² No records overlap the site and therefore no additional inquiries to CT DEEP are required.

6.0 WETLAND FUNCTIONS AND VALUES

6.1 Assessment Methodology

The US Army Corps of Engineers/FHWA Highway Methodology was used to assess the wetlands. This method recognizes the following 13 separate wetland functions and values: groundwater recharge/discharge, floodwater storage, fish and shellfish habitat, sediment/toxicant/pathogen retention, nutrient removal/retention/transformation, production export, sediment/shoreline stabilization, wetland wildlife habitat, recreational value, educational/scientific value, uniqueness, visual/aesthetic quality and threatened and endangered species habitat.

The degree to which a wetland provides each of these functions is determined by one or more of the following factors: landscape position, substrate, hydrology, vegetation, history of disturbance, and size. Each wetland may provide one or more of the listed functions at significant levels. The determining factors that affect the level of function provided by a wetland can often be broken into two categories. The effectiveness of a wetland to provide a specified function is generally dependent on factors within the wetland whereas the opportunity to provide a function is often influenced by the wetland's position in the landscape as well as adjacent land uses. For example, a depressed wetland with a restricted outlet may be considered highly effective in trapping sediment due to the long residence time of runoff water passing through the system. If this wetland is located in gently sloping woodland, however, there is no significant source of sediment in the runoff therefore the wetland is considered to have a small opportunity of providing this function.

6.2 Assessment Results

The functions and values of five distinct wetland and watercourse systems at the site were evaluated, based on best professional judgment (as noted above, Wetland 6 was not evaluated due to its location distant from any proposed activity). The results of that assessment are summarized in Table 2 below.

² <http://cteco.uconn.edu/viewer/index.html?viewer=simple>

Table 1: Summary of Wetland Functions and Values

Wetland Functions and Values	Groundwater Recharge/Discharge	Sediment/Shoreline Stabilization	Floodflow Alteration	Fish & Shellfish Habitat	Sediment/Toxicant/Pathogen Retention	Nutrient Removal/Attenuation	Production Export	Wildlife Habitat	Recreation	Educational/Scientific Value	Uniqueness/Heritage	Visual Quality/Aesthetics	Listed Species Habitat
Wetland 1	S	P	P	S	P	P	S	P	U	U	U	U	U
Wetland 2	P	U	U	N/A	P	P	U	S	U	U	U	U	U
Wetland 3	S	U	U	N/A	S	S	U	S	U	U	U	U	U
Wetland 4	S	P	P	S	S	S	P	P	U	S	U	S	U
Wetland 5	P	P	S	U	P	P	P	P	S	S	U	S	U
Wetland 6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Suitability P = principal function S = secondary function U = function unlikely to be provided at a significant level N/A = not applicable													

7.0 COMPENSATORY MITIGATION

The proposed site development will result in the loss of approximately 4,800 sq. ft. of wetlands along the margins of Wetland 5. Based on the assumption of a requirement for compensatory wetlands at the ratio of 2 sq. ft. of mitigation wetlands for each square foot of wetland loss, we have identified two areas contiguous to Wetland 2 which we believe have potential to serve as compensatory mitigation areas. Together, they would provide approximately 10,000 sq. ft. of compensatory wetlands for a mitigation ratio of 2.1:1.

This appears to be an area of moderately well drained soils with a seasonal high-water table within 1.5 feet – 3 feet of the surface. These areas would be excavated by approximately 1-2 feet so that the seasonal high-water table is closer to the surface, thus establishing wetland hydrology and an aquic soil moisture regime. These areas would then be planted with hydrophytic emergent vegetation to establish a wet meadow/marsh wetland habitat.

A Wetland Creation Area Planting Schedule, which follows the Wetland Creation Area Construction Sequence, provides a typical list of species to be planted within the creation area.

Species composition may be amended at the time of construction based upon the location of groundwater as determined by soil test pits and hydrologic monitoring to confirm the feasibility of the proposed mitigation areas.

Wetland Creation Area Construction Sequence

1. The Town of Newtown Inland Wetlands official shall be notified five business days in advance of any phase of the wetland creation area construction.
2. The wetland creation area will be excavated and formed to the limits shown on the Project Plans. Prior to construction, more detailed hydrologic data/monitoring shall be collected. Methods to include evaluation of the soil profile using deep test pits or the monitoring of seasonal high groundwater using shallow groundwater monitoring wells.
3. A Davison Environmental certified professional wetland scientist responsible for this planting design shall be notified 48 hours prior to any phase of the planting to monitor implementation of the construction.
4. Note that initial grading should include a berm to be maintained between the existing wetland boundary and the creation area that allows for hydrologic discontinuity until plantings within the newly created creation area are established. Upon establishment the berm will be removed and a surface water connection between the existing and new wetland area established.
5. The creation area will be cleared of existing trees, shrubs, and other woody vegetation. Roots and stumps will be grubbed out and deposited outside of the creation area. The area will be excavated approximately 12 inches below final grades to allow for the placement of a wetland topsoil layer to achieve final grades.
6. Minor modifications to the grading may be made in the field by the wetland scientist in response to observed subsurface hydraulic conditions in order to achieve the proper hydrology conditions for the created wetland habitat.
7. Wetland topsoil consisting of a 1:1 mixture (or equal volumes) of organic and mineral materials that contains at least 12 percent organic carbon content by weight will be placed over the bottom of the creation area. Clean leaf compost or commercially available compost (well to partially decomposed) is the preferred amendment to achieve this standard, though other materials may be used if approved by the supervising wetland scientist. Materials should be uncontaminated and void of any woodchips. The contractor shall ensure that proper soil compaction levels (loose to friable) are maintained and appropriate corrective measures (e.g., rototilling) may be necessary.
8. The qualified wetland scientist may determine that dewatering is needed during the grading and planting of the creation area. If necessary, excess water will be discharged into a temporary sediment trap. The need for dewatering and any specific method for dewatering is site specific and may be modified by the Contractor to accommodate field conditions. The

Contractor shall provide the means and methods of dewatering consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control.

9. Creation area plantings will take place once the above listed tasks have been completed. The species, size and quantity of the plantings will follow the constructed Wetland Creation Area Planting Schedule shown below. Note that amendments may be made at the time of construction based upon the location of groundwater and a final grading plan.
10. All plantings to be spaced equidistant to provide a dense planting bed.
11. The contractor hired to build the creation area shall be responsible for the careful installation, maintenance (including watering if necessary), and establishment of the plant material in the basin area. All plants shall be guaranteed by the contractor to remain alive and healthy for a full twenty four (24) month period.

Wetland Creation Area Planting Schedule

Botanical Name	Common Name	Size	Spacing
<i>Wetland Basin</i>			
<i>Carex comosa</i>	Bearded sedge	2" plugs	2FT-O.C.
<i>Schoenoplectus (Scirpus) Acutus</i>	Hard-stem Bulrush	2" plugs	2FT-O.C.
<i>Sparganium americanum</i>	Burreed	2" plugs	2FT-O.C.
<i>Carex stricta</i>	Tussock sedge	2" plugs	2FT-O.C.
<i>Juncus effuses</i>	Soft rush	2" plugs	2FT-O.C.
<i>Iris versicolor</i>	Blue flag iris	2" plugs	2FT-O.C.
<i>Scirpus atrovirens</i>	Green bulrush	2" plugs	2FT-O.C.
<i>Scirpus cyperinus</i>	Woolgrass	2" plugs	2FT-O.C.
<i>Pontederia cordata</i>	Pickernelweed	2" plugs	2FT-O.C.
<i>Sagittaria latifolia</i>	Northern arrowhead	2" plugs	2FT-O.C.
<i>Schoenoplectus acutus</i>	Hard-stem bulrush	2" plugs	2FT-O.C.
<i>Schoenoplectus tabernaemontani</i>	Soft-stem bulrush	2" plugs	2FT-O.C.
<i>Tussock sedge</i>	<i>Carex stricta</i>	2" plugs	2FT-O.C.
<i>Wetland Creation Area Side Slopes</i>			
New England Conservation/Wildlife Mix for moist sites (or equivalent) at 1750 sq.ft./lb. or as recommended by manufacturer.			

Wetland Mitigation Monitoring

1. Monitoring of the wetland creation area will be conducted as follows. The area will be monitored for the first five growing seasons following construction. Monitoring reports will be submitted to the Town of Wallingford no later than December 15 of each year. The reports will provide details on the success standards described below with the goal being that these standards are satisfied by year three. Monitoring reports shall include the percent survival of plantings, extent of herbivory and observations of vegetation development. Remedial actions recommended and/or completed will also be provided. The first year of monitoring will be the first year that this area has been through a full growing season after completion of construction and planting. For monitoring purposes, a growing season starts no later than May 31. If the success standards are not met, recommendations for additional monitoring/corrective actions will be required.

2. The wetland creation area will be assessed using the following success standards:
Standard 1: At least 75% of the surface area of the mitigation area shall be established with indigenous species within two growing seasons. Standard 2: The mitigation area is properly stabilized.

8.0 REFERENCES

Connecticut Environmental Conditions Online (CTECO) (<http://www.cteco.uconn.edu/>)

Mitsch, W.J. and Gosselink, J.G. 2007. Wetlands, fourth edition. John Wiley and Sons, Inc.

U.S. Army Corp of Engineers. 1995. The Highway Methodology Workbook – Wetland Functions and Values: A Descriptive Approach.

