TOWN of WESTON, CONNECTICUT

Incorporated 1787

Conservation Commission

Bisceglie-Scribner Park
154 Newtown Turnpike, Weston, CT
Triton Ecological Assessment April 2002 Report

Pickleball Courts and Drainage System Feb. 15, 2024 Application
before
Weston Conservation Commission

Note: The current proposed activity represents the addition of a recreational amenity in an already developed public park with access, parking, ball fields, playground, swimming, trails and associated facilities. No direct impacts to nearby wetlands are proposed and a drainage system with in ground infiltration is planned to control storm water runoff quality and quantity and thus mitigate impacts to the nearby wetlands and water course. The activities are within approximately 14,000 sq. ft, or about one-third of an acre, close to parking and a service road accessing the playground and swimming area. The area lies principally within the upland regulated area of Wetlands 2 and 3. The applicant has elected to use the Triton report in lieu of current wetlands delineation and soil report from a soil scientist. The Triton report includes a soil scientist delineation of wetlands as well as a full ecological assessment required in 2002 application for a large site development project of the park that included significant activities and direct wetland impacts.

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ECOLOGICAL ASSESSMENT REPORT

BISCEGLIE-SCRIBNER PARK
Newtown Turnpike
Weston, Connecticut

Incorporated 1787

APRIL 2002

Prepared For:

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EXECUTIVE SUMMARY

On behalf of the Weston Parks and Recreation, Triton Environmental, Inc. (Triton), completed an ecological assessment of existing conditions for the 53.6 acre Bisceglie-Scribner Park located on Newtown Turnpike in Weston, Connecticut (Figure 1).

Approximately 7.5 acres of the total 53.6 acre park is proposed to be improved under the current project design. Triton has identified a 17.8 acre project study area (Figure 2) that includes the proposed 7.5 acre site improvement area as well as onsite wetlands and watercourse systems. This study area was defined by the interrelated ecosystem components (habitat, corridors, connectivity, etc.) of the onsite wetlands and watercourses. The study area is primarily a closed-canopy mixed coniferous-deciduous second growth forest (upland and wetland) including maintained areas for passive recreation (trails, pool, children's play station). Wetland areas consist of forested floodplain, riverine, slope and depression communities.

The primary objective of the proposed site improvement is to construct: three (3) baseball fields; a subsurface septic leaching field system; a parking area; an accessory pavilion structure; and stormwater management practices and extensive wetland buffer plantings. The planned stormwater management features include water quality basins and vegetated filter strips that are proposed to assist in the filtering and polishing of stormwater runoff from parking and landscaped areas. These and related improvements are identified on the plans prepared by Milone & MacBroom titled, "Bisceglie-Scribner Park Field Improvements, Weston, Connecticut (April 8, 2002, revised 4-17-02).

The proposed design improvements for the park have been planned in a manner that minimizes and mitigates long-term impacts to wetland and watercourse resources. Only 900 square feet of onsite wetlands are proposed to be disturbed. The current high quality of the wetland ecological communities is expected to be maintained post-development. No impacts are expected to any federally or state listed species, due to the lack of their anticipated occurrence on the site.

1.0 INTRODUCTION

This Ecological Assessment Report was prepared for use in obtaining a wetlands permit to conduct the proposed athletic field improvements project on the Bisceglie-Scribner Park in Weston, Connecticut. The report includes inventories and assessments of existing ecological conditions, a description of regulated activities and proposed impacts and mitigation.

The proposed site improvements include the construction of: three (3) baseball fields; a subsurface septic leaching field system; parking area; an accessory pavilion structure; stormwater management practices; and extensive wetland buffer plantings to mitigate runoff quantity and quality and provide wildlife habitat.

The upland area on the subject site is framed by several wetland communities, including slope, depression and riverine wetlands that all drain to the high quality West Branch Saugatuck River system.

The ecological assessment was prepared to inventory and assess ecological conditions, assess impacts associated with the proposed site improvements, analyze and evaluate improvement alternatives, and suggest alternatives and mitigation measures to avoid and offset potential short and long-term impacts. Field investigations for this report were conducted in April 2002. Triton Environmental staff principally responsible for the completion of the assessment work and the preparation of this report was Jeffrey Shamas and William Kenny. Qualifications for these individuals are provided in Appendix A.

2.0 ECOLOGICAL INVENTORY AND ASSESSMENT

2.1 Geology, Landform and Drainage

The Bisceglie-Scribner Park property is located in the Proto-North American Geologic Terrane of the Western Uplands region of Connecticut. This terrane includes intrusive rocks such as the Ordovician granitic schist that underlies the project site (*Bedrock Geology Map of Connecticut*, U.S. Geological Survey, 1985). The greatest influence of the bedrock at the site occurs in the central upland areas where the bedrock controls the topography and affects soil pH and fertility. The pH of soils formed from granite gneiss generally is slightly acidic and a common condition throughout the region. Soil pH affects the types and pattern of vegetation found in the different soils, as well as the ability of the soil type to perform soil chemistry processes.

Surficial materials at the site consists of glacial till in the upland areas, alluvial deposits within the floodplain along the West Branch Saugatuck River, and outwash (sand and gravel) deposits between the high points of the uplands and the low lying areas of the River (*Surficial Materials Map of Connecticut*, Stone, et al, 1992).

According to the *Natural Drainage Basins Map* of Connecticut (981), the project site lies within the central portion of the West Branch Saugatuck River watershed. This watershed is a 12-square-mile watershed located in the southwestern portion of Connecticut, north of Long Island Sound. The watershed extends to portions of the towns of Redding and Wilton.

Surface water flows within the onsite forested wetlands generally travel in a westerly direction toward the West Branch Saugatuck River. The river receives overland flows from onsite as well as offsite stormwater runoff from Newtown Turnpike.

2.2 Ecological Communities

The site is located within the Western Coastal ecoregion of the Coastal Hardwoods Zone (Dowhan and Craig 1976). An ecoregion is an area characterized by distinctive landscape patterns and regional climate as expressed by the composition of the vegetation and pattern and the presence or absence of certain indicator species or species groups. The Western Hardwoods ecoregion is a narrow corridor about 10 miles to more than 25 miles north of Long Island Sound. The geological bedrock parent material dominated by the granitic gneiss characterizes this ecoregion.

The project area investigated (property east of the West Branch Saugatuck River) include a total of six (6) ecological communities that were identified through onsite investigations. Of the six communities, one is the dominant upland community and other five are wetland or watercourse communities. The locations of the communities are shown on Figure 2.

2.2.1 Uplands

Upland areas within the project limit occur primarily in the central locations and are framed by wetlands.

Upland 1 (U1) – Mixed Coniferous-Deciduous Forest

This community, approximately 14.4 acres, dominates much of the upland study area and is framed by wetlands. It is characterized as a mature, mixed coniferous-deciduous, second-growth forest. This forest includes large second-growth mature broad-leaved deciduous and evergreen trees ($20\text{-}30^{+}$ inch dbh).

The dominant tree canopy species consists of cedars, oaks, hickories, maple with ash, birch, elm and beech trees scattered throughout. The early successional cedar trees are being shaded (many dead or dying) from the climax community of oaks, maples and hickories. The canopy height is approximately 60 to 80 feet in most locations. Sapling species of the dominant tree strata dominate the understory as well as shrubs such as native dogwood, ironwood, tartarian honeysuckle and privet, and non-native invasives such as euonymous, and Japanese barberry. Due to time of year restrictions, an inventory of herbaceous plants was limited. However, poison ivy, greenbriar, bittersweet, rose, Christmas fern, garlic mustard and bramble represent the visible herb and liana (vine) layers.

The dominant soils within this community are well-drained Charlton-Hollis fine sandy loam (previously delineated by another consultant), which are typical soils found in glacial till deposits with shallow to bedrock soils and include areas of steep slopes and exposed bedrock ledges.

The community primarily includes habitat for edge species (e.g., wildlife adapted to life in close proximity to disturbances). The composition of deciduous and coniferous woodlands allows for some diversity of avian species to use the site for food, nesting, perching and cover. The property does not appear to support interior species (area sensitive species requiring relatively large contiguous forest tracts), as research suggests that interior species require over 110 meters from edges. Based on the limited area (e.g., gaps) of contiguous forest on and surrounding the site and proximity to habitations (houses, roads, etc.) there does not appear to be suitable habitat area for interior species. Typical wildlife species using this predominately closed-canopy habitat may include deer, gray squirrel, raccoon, and woodchuck, chipmunk, fox, coyote, skunk, opossum and smaller mammals such as voles, moles and mice. Avian species expected to use the site include migratory songbirds and resident species. These include red-tailed hawk, chickadee, swallow, owl, junco, pine warbler, house finch, phoebe, gray catbird, northern cardinal, common crow, American robin, and northern mockingbird, American goldfinch, red-bellied woodpecker, eastern bluebird, blue jay, and a variety of warblers and turkey.

2.2.2 Wetlands and Watercourses

The approximate 17.8 acre project study area includes a total of approximately 3.4 acres of wetlands or 19.3 percent of the project area consists of wetlands, which surrounds the upland to the north west and south. The wetlands have been separated into five (5) ecological communities based on their Hydrogeomorphic (HGM) characteristics and vegetation composition. These include Wetland 1 (W1) a Palustrine Slope Wetland, Wetland 2 (W2) a Palustrine Depression Wetland, Wetland 3 (W3) a Riverine / Floodplain wetland, and Wetland 4 (W4) and Wetland 5 (5) Palustrine Depression Wetlands. The wetland locations are presented in the Ecological Communities Map (Figure 2).

Wetland 1 (W1)- Palustrine Riverine Wetland

This community consists of a small 0.05 acre (2,260 square foot) oblong wetland system with an intermittent channel with poorly drained Leicester wetland soils occurs on a gently slope having a western aspect. This wetland appears to receive surface and subsurface runoff from two areas: 1) Newtown Road storm drain system, and 2) from a wetland system on the eastern side of Newtown Road.

The wetland is a relatively closed-canopy habitat with red maple as the dominate tree canopy species. The sapling and shrub layer is sparse and includes red maple and ironwood with native spicebush and non-native invasive species (e.g., privet, Japanese barberri and tartarian honeysuckle) comprising the shrub layer. Skunk cabbage, wild onion and garlic mustard comprise the herbaceous layer.

Based on the size, hydrologic regime (intermittently inundated) and landscape position (western slope aspect), typical wildlife species using this wetland are similar to that of U1, however, some of the more wetland dependant species such as, salamanders, frogs and other small amphibians and reptiles may occur within this community, though not in abundance.

Wetland 2 (W2)- Palustrine Depression Wetland

W2, which is located west of W1 and east of the River, is a 0.05 acre (2,325 square foot) depression wetland community that straddles southern the property line. A rock wall defines its northern boundary on the property, the wetland extends, and drains to the south (off site). A hedgerow of cedar trees comprise the western upland wetland interface. This wetland is in an area of glacial outwash (sand and gravel) consisting of poorly drained Raypol soils.

This wetland exhibits ephemeral qualities, whereby a small pooling area was observed on the day of inspection located partly on and off the property. It is considered a sensitive and important habitat area that may support wetland dependent amphibian species that use these areas primarily for reproducing and early development. Wildlife habitat values are considered high for this community, based on the diversity and type of habitat present. The same wildlife that uses W1 is expected to use W2.

The wetland is a closed canopy system with red maple and shagbark hickory as the dominant trees. Saplings and shrubs include ironwood, red maple, spicebush, and tartarian honeysuckle. The herbaceous layer consists of trout lily and swamp rose.

Wetland 3 (W3)- Riverine / Floodplain Wetland (West Branch Saugatuck River)

W3 comprises approximately 3 acres, and includes a Class A (according to the *Water Quality Classifications Map* of Connecticut (1987) watercourse system (West Branch Saugatuck River). The River traverses the central portion of the site from the north and flowing to the south. This community is one of the highest quality wetland systems onsite with respect to its diversity of micro-communities (areas of floodplain and depression wetlands, ephemeral basin and soil types). The poorly drained soils are a combination of alluvial (Rippowam) and glaciofluvial (Raypol), which occur along the floodplain of the wetland. This wetland receives surface and subsurface flows from Wetlands W4 and a tributary brook from Newtown Turnpike as well as offsite sources to the north and west of the project site.

An area of the floodplain, located near the upland-wetland interface near wetland flags 216-223, includes a sensitive habitat area that exhibits ephemeral qualities similar to W2. In addition to its many functions, this area has a relatively high probability of contributing to the habitat requirements of breeding amphibians.

Green ash, red maple, hickory, birch and tuliptree dominate the tree canopy of W3. The understory consists primarily of tree saplings plus ironwood as well as a shrub layer of sweet pepperbush, euonymous, and winterberry. Trout lily, marsh marigold, false hellebore, skunk cabbage and ferns comprise the forested floodplain floor.

Further north along the floodplain, the curvilinear wetland boundary turns and extends easterly at the mouth of a tributary brook that joins the River. As W3 primarily contains alluvial and glaciofluvial (stratified outwash soils), the upper portions of the wetland community (nearest Newtown Turnpike) consists of poorly drained Ridgebury soils associated with glacial till materials.

The vegetation occurring within the Ridgebury soils is similar to the composition and structure of W4, however, this wetland does include a tributary brook of the West Branch Saugatuck River. This high quality and diverse wetland directs overland and subsurface (groundwater) runoff to the River. The existing ability of this wetland to provide stormwater quantity and quality management is important, because of its juxtaposition to Newtown Road and its direct link to the River.

In addition to the wildlife expected to use the other onsite wetlands, waterfowl and finfish species are expected to use the high quality habitat of the River.

Wetland 4 (W4)- Palustrine Depression Wetland

This small 0.22 acre (9,950 square foot) community is connected to the riverine system of W3. However, the HGM separation of this community is based on the lack of riverine characteristics and the distinct difference in soils. As W3 primarily contains alluvial and glaciofluvial (stratified outwash soils), W4 consists entirely of poorly drained Ridgebury soils associated with glacial till materials. The dominant HGM characteristic in this community is the depressional nature of the wetland and the apparent high groundwater table. This relatively high quality wetland receives overland drainage from uplands as well as subsurface (groundwater) discharges seasonally. The slight drainage pattern in this wetland directs water toward the lower gradient W3 community.

Skunk cabbage carpets the forest floor with co-dominant false hellebore. The understory consists of spicebush, sweet pepperbush, and ironwood, birch, maple and ash saplings. The tree canopy layer includes maple, ash, birch, tuliptree and hickory.

Wildlife species expected to use this wetland are similar to those occurring in the uplands and previously identified wetland areas.

Wetland 5 (W5)- Palustrine Isolated Depression Wetland

This 0.1 acre (4,500± square foot) community is an isolated wetland pocket that appears dryer than the other poorly drained Raypol soils. The underlying stratified sands and gravel (glacial outwash) allow for a high potential for recharge capabilities and groundwater discharge modification on a seasonal basis. Though these functions are limited based on the small size of this community.

Dominant vegetation occurring within this wetland includes maple, hickory, birch and beech. The understory consists of ironwood, spicebush and a colony of winterberry in an isolated pocket. Forbes and grasses comprise the herb layer.

2.3 Wetland/Watercourse Functional Evaluation

The biophysical elements (e.g. landscape position, geology, hydrology, substrate, and vegetation) of wetlands determine their functions and to what capacity they are performed. The functions they provide and the capacity of those functions vary from wetland to wetland. To better understand these differences as they relate to the onsite wetlands, a functional evaluation was completed for the wetlands identified. Each onsite wetland was assessed to determine its capacity to provide eight wetland functions:

The seven hydrogeomorphic (HGM) classes that were originally agreed upon by Scientists in 1991, were re-evaluated at a subsequent workshop held in 1992, at which the following eight primary wetland functions were developed for use by evaluators:

1. Modification of groundwater discharge
2. Modification of groundwater recharge
3. Storm and floodwater storage
4. Modification of stream flow
5. Modification of water quality
6. Export of detritus
7. Contribution to abundance and diversity of wetland vegetation
8. Contribution to abundance and diversity of wetland fauna

The completed evaluation was based on *The Rapid Assessment Procedure for Assessing* Wetlands *Functional Capacity* (Hollens and Magee 1998). This method assesses the relative importance of the wetlands for performing functions and provides a logical framework for observations, a structure for standardizing results, and a basis for achieving repeatable results among users. The initial step of the Assessment Procedure is to choose a Wetland Assessment Area (WAA). The WAAS at the project site are W1 through W5, inclusive. These communities were chosen based on their HGM class and vegetative covertype. However, other factors such as proximity and connectivity (juxtaposition) to other wetlands and slope were also considered. Each WAA and designated functional indicators (hydrologic, landscape, soil, and vegetation variables) of the Assessment Procedure were characterized for a range of conditions based on field investigations and reviews of topographic surveys and aerial photographs.

The onsite wetlands' relative abilities to perform each function are addressed in Table 3. The capacity for the onsite wetlands to perform the wetland functions varies from wetland to wetland and from function to function. The differences are due to natural (hydrogeomorphic) and human (e.g. land use activities) conditions. The following is a description of each function and its potential societal value.

Modification of Groundwater Discharge:

Modification of groundwater discharge is the capacity of a wetland to influence the amount of water moving from the ground to the surface. Typically, a perennial inlet and outlet indicates that a wetland is directly linked with the regional water table and has a high capacity to perform this function. This can affect groundwater and surface water supplies and recreational activities.

Modification of Groundwater Recharge:

Modification of groundwater recharge is the capacity of a wetland to influence the amount of surface water moving to groundwater aquifers and thereby affecting public and private groundwater supplies. The subsoil and location of a site play a significant role in ability for wetlands to modify groundwater recharge. With the exception of slope wetlands, all wetlands have some capacity to contribute to this function. Poorly developed or no microrelief is an indication that the water table is below the substrate of a wetland for most of the growing season and that groundwater recharge is occurring. Wetlands with perennial outlets are discharge areas and cannot be recharge areas, even seasonally.

Storm and Floodwaters Storage:

Storm and floodwater storage is the capacity of a wetland to detain or retain stormwater on its surface. This benefits society by preventing storm damage and the loss of life and property. All wetlands, except slope wetlands, have some capacity to contribute to this function. Depressional wetlands have the highest potential for providing this function.

Modification of Stream Flow:

Modification of stream flow is the capacity of a wetland to produce or affect the hydrology of a downgrade stream. This function may affect societal values related to recreation, public water supply, flood control, and prevention of storm damage. Wetlands that have a high capacity to store storm and floodwater and to modify groundwater discharge have a high capacity to modify stream flow. Wetlands that have no outlet are the only type that does not contribute in any manner to the modification of stream flow.

Modification of Water Quality:

Modification of water quality is the removal of suspended and dissolved solids from surface water and dissolved solids from groundwater and conversion into other forms, plant or animal biomass, or gases. This function may contribute to societal values related to public water supply, recreation, and aesthetics. The primary mechanisms for the removal of suspended solids are sedimentation and filtration. Dissolved constituents can be removed or made unavailable for downstream plant use via adsorption and absorption by soil particles, uptake by vegetation, loss to the atmosphere by microbiological processes, or combination of the three. Flow characteristics and residence time are the primary wetland characteristics affecting the ability of a wetland to perform this function. Generally, depressional, lacustrine fringe and flat wetlands have the highest potential for performing this function because typically the residence time of water is maximized. Conversely, slope wetlands have the least potential.

Export of Detritus:

Export of detritus refers to the ability of the wetland to produce and export dissolved and particulate organic particles to downstream aquatic ecosystems to serve as an energy source, to support their food chain, or both. Society may value this function as it relates to food web support and ultimately nature research and education, recreation (e.g. hunting and fishing), and the type and density of fauna supported by the wetland. The structure and composition of the wetland's vegetation affects the production of detritus and the degree of the wetland's surface water connection with a stream, river or lake affects the transport of detritus. An increase in the productivity and diversity of an ecological community generally equates to a greater capacity to perform this function. Based on hydrogeomorphic conditions, riverine wetlands have the greatest potential for export of detritus due to an unrestricted outlet. Depressional and flat wetlands have the least potential because of their greater potential to retain suspended sediments.

Contribution to Abundance and Diversity of Wetland Vegetation:

Contribution to abundance and diversity of wetland vegetation is related to the number and type of hydrophytic plants that a wetland can produce and support. Society may value this function as it relates to environmental research and education, recreation, the type and density of fauna supported by the wetland, and production of harvestable goods. Because wetlands support plant species that occur in wetter and dryer (upland) habitats and species that grow only in wetland habitats (poorly drained and very poorly drained soils), most wetlands have a high capacity to contribute to the abundance and diversity of a landscape's vegetation. The primary variables affecting a wetland's capacity to perform this function are its plant species diversity, its vegetation density and dominance, its water regime diversity, and its juxtaposition to other wetlands.

Contribution to Abundance and Diversity of Wetland Fauna:

Contribution to abundance and diversity of wetland fauna is the capacity of a wetland to support large and/or diverse populations of animal species that spend part or all of their life cycle in wetlands; either an individual wetland or a system or network of wetlands. Society may value this function as it relates to environmental research and education, recreation, aesthetics, and providing a source of food. A wetland's water regime is the primary factor affecting this function, as it largely controls the dominant vegetation type present and influences the animal movement to and within the wetland to food, cover, and breeding areas. Other factors affecting the capacity of a wetland to contribute to the abundance and diversity of wetland fauna are the structure and composition of the vegetation community and the juxtaposition of the wetland to other habitat types (e.g., another wetland, upland forest, farm field, surface waterbody, etc.).

Assessment Summary of Table 3

Based on the reasons described in Table 3, the overall average rating for the onsite wetland's capacity to contribute to the above eight functions are moderate to high.

2.4 Endangered and Threatened Species

Activities affecting endangered and threatened species are regulated by the Connecticut General Statutes (CGS Section 26-303 through 26-315) and Federal Endangered Species Act of 1973 (Public Law 93-20). Connecticut State and Federal Regulations provide certain provisions for species that are listed as endangered or threatened. For private landowners, the Connecticut General Statutes (Section 26-311) prohibits the taking of endangered or threatened species without the landowners permission and for sale or commercial gain. In addition, the State of Connecticut reserves the right to prohibit the taking of special concern species that exhibit excessive reductions in population. Under permitting conditions, the CTDEP may provide recommendations to avoid endangered and threatened species, and minimize impacts to species of special concern.

An investigation was conducted by Triton Environmental, Inc. to determine the presence or absence of state or federal species listed as endangered, threatened, or special concern. The investigation included onsite surveys and reviews of remotely sensed data (CTDEP Environmental and Geographic Information Center Natural Diversity Data Base (NDDB) map and files). No federally or state listed endangered or threatened species were observed on the site or on the NDDB resource maps.

3.0 REGULATED ACTIVITIES & PROPOSED IMPROVEMENTS

In accordance with Section 2.1 bb and Section 6 of the Weston Inland Wetlands and Watercourse Regulations, activities within 100 feet of a wetland or watercourse boundary are considered a regulated activity requiring a permit authorized by the Town IWW.

The Town of Weston proposes to improve approximately 7.5 acres of the 53.6 -acre property through the construction of a three athletic ball fields, parking area, and related site facilities. To minimize and avoid impacts to wetlands and watercourses, the improvements are clustered and confined to the central portion of the project site. Approximately 900 square feet of onsite wetlands are proposed to be disturbed to complete the project. Presented below are regulated activities proposed for the Bisceglie-Scribner Park project, as presented on the Grading and Regulated Activities Plan prepared by Milone & MacBroom, Inc., dated April 8, 2002, rev. 4-17-02:

1. Clearing of vegetation and grubbing of soils;
2. Topographic contour alterations (cuts and fills) associated with athletic fields 1, 2 and 3;
3. Construction of gravel parking lot and associated vegetative buffer strips;
4. Installation of irrigation system, utilities, fencing and guide rails;
5. Installation of subsurface septic system;
6. Reconstruction of a portion of the fitness trail;
7. Stormwater quality basins; and

8. Mitigation plantings.

4.0 IMPACT ASSESSMENT AND PROPOSED MITIGATION

The most appropriate approach to minimizing environmental impacts is to employ the CTDEP method of avoidance, minimization, and compensation, whenever possible. This strategy has been implemented during the planning stages of the Bisceglie-Scribner Park project.

Endangered and Threatened Species

Based on the lack of listed species or essential habitat occurring on the project site, no expected impacts are anticipated, therefore mitigation is not warranted or proposed for these species.

Stormwater Management

Stormwater Flow (Quantity)

The development design proposes increases to impervious areas on the property. Based on hydrological analysis completed by an engineer, peak flows post-development will slightly increase compared to existing conditions. The engineers do not expect the slight increases to have a negative effect on downstream areas. The proposed water quality basin, vegetative filter strips, and processed aggregate parking area surfaces will assist in reducing peak flows and improving water quality. Detention basins or other structures have not been proposed under current plans (dated 4-8-02, revised 4-17-02).

Stormwater Quality

The proposed project has the potential to cause impacts to stormwater quality in the short and long-term. Therefore, the review and discussion of potential impacts and proposed mitigation have been grouped according to the time and duration of their occurrence.

Short-term Potential Impacts and Mitigation

Short-term impacts are considered temporary and brief impacts associated with project construction phases. Erosion of soil and subsequent deposition of sediment are the primary impacts to stormwater quality that can occur in the short-term (during construction). To avoid these impacts, a comprehensive erosion and sediment control plan has been developed for on-site implementation.

The construction site can become susceptible to erosion due to the removal of the protective layer of overlying vegetation. Erosion, the removal of soil by water, wind, or gravity, is caused by raindrops striking the bare surface of the soil and dislodging soil particles which are then transported by surface runoff. Scouring of the exposed soil by concentrated runoff causes rivulets and then gullies to be opened on the land surface if runoff is allowed to continue down slope without the implementation of adequate erosion and sediment controls.

The erosion potential or susceptibility of a site to erosion is determined by five inter-related factors: Soil Erodibility, Vegetation Cover, Topography, Climate, and Season. To minimize the potential for environmental impact due to uncontrolled erosion and sedimentation, each of these factors has been carefully considered during the planning phase of the Bisceglie-Scribner Park project. The result of this process is the project's Sediment and Erosion Control Plan that has been prepared by Milone & MacBroom in accordance with the *Connecticut Guidelines for Soil Erosion and Sediment Control* (1985). A construction sequence narrative for the site and typical details for the installation of sediment and erosion controls is included on the plan. To minimize short-term environmental impacts, erosion and sediment control must be an integral part of construction management. To ensure the plan is successful and is implemented and maintained as intended, a qualified individual will be retained to regularly monitor the installed erosion and sediment control measures and provide recommendations for maintenance or improvement.

Long-term Potential Impacts and Mitigation

The type and concentration of pollutants to be potentially generated by the proposed project are not equal for each of its developed areas (e.g., drive, building roof, and fields). Generally, vehicular activities, road and parking areas are the single most important source area for stormwater pollutants. Not only do these areas generally produce higher concentrations of pollutants but they also generate a disportionate amount of the total runoff volume if paved. Landscape areas are generally not a significant source of stormwater pollutants, as they generate very little runoff. Although, roofs typically produce larger volumes of runoff than landscape areas, their runoff is relatively clean, as there is not a significant source for pollutant build-up on and subsequent transport from their surface.

The proposed project involves the installation of a subsurface septic system that is to receive treated wastewater effluent from the Weston Schools Campus site on School Road. Sewage from the schools will discharge to a state of the art sewage treatment structure on campus that will filter and purify the wastewater, using charcoal filtration and ultra-violet technology. The treated wastewater will be directed from the schools campus to Bisceglie-Scribner Park where additional filtering and renovating of the treated wastewater will occur. The system is designed to effectively renovate 15,000 gallons of wastewater per day. The treated effluent will enter a gallery system under Baseball Fields #2 and #3, then flow from the galleries to a constructed fill envelope (sand filter) that will further renovate the wastewater. The constructed fill interface with natural soils is spread over approximately 170 feet. The effluent is expected to significantly contribute to groundwater recharge. A portion of this system is proposed within 100 feet of W2 (approximately 90 feet from the wetland boundary). In addition to contributing to groundwater recharge, the treated water is expected to contribute to the hydrology of wetland W2. The treated water that reaches W2 is anticipated to have no significant effect, in quantity or quality, based on information from the design engineer, Angus MacDonald and Gary Sharpe Associates, Inc. The 170 foot level distance of the constructed fill will act as a level spreader that will discharge the water in a rather controlled manner.

Maintenance of turf grasses has the potential to impact water quality through applications of pesticides and fertilizers. To mitigate this potential, Dr. William Dest is preparing an Integrated Pest Management plan that will address and describes intended uses/applications of fertilizers, pesticides and herbicides on the site.

To minimize potential impacts, a portion of the entrance drive and all proposed parking areas will be pervious (processed aggregate). Runoff that does not infiltrate into the ground will be treated prior to reaching a wetland or watercourse. Vegetated filter strips are proposed within and adjacent to the processed aggregate parking lot. Essentially, stormwater runoff from the eastern half of the gravel parking lot will enter a planted filter strip/swale to slow velocities and provide some infiltration/pollution renovation capabilities. Stormwater that passes to the western half of the parking lot, including the western half of the lot, will enter a second vegetated filter strip adjacent to W5 (depressional wetland).

A vegetated water quality basin is proposed northeast of the parking lot to treat stormwater from parking and drive surfaces and landscape areas. This basin will include a naturalized field stone wall with plantings to provide stormwater quality enhancements through pollution filtration, sediment attenuation and runoff infiltration. In addition, the area will be densely vegetated with wetland shrub and tree species to further reduce velocities and settling and to provide surfaces for adsorption of suspended material by filtration of the water through the plant material.

An extensive planting plan has been designed for the entire site by Milone & MacBroom (Site Plan-Landscaping) that will provide habitat to wildlife as well as providing water quality measures, and mitigation for regulated area alterations.

Alternatives to Long-Term Impacts

Early planning stages of the park included a four baseball fields, which may have involved extensive regulated area and direct wetland disturbances. The three field design is a feasible and prudent alternative to the original four field concept that incorporates sensitivity to the environmental resources. In addition to the scaled down three field design, there are several alternatives that could be implemented into the design plan that may reduce overall potential impacts.

The depressed parking lot islands that are proposed to be grassed and planted do not currently incorporate techniques to eliminate potential long-term ponding in these areas. A stoned trench (crushed stone wrapped in a geo-textile blanket), approximately 2 feet deep and 2 feet wide, could be installed along the center of the island with planted grassed strips on either side. This would allow for water quality treatment and infiltration of stormwater runoff resulting in the ability to manage stormwater quantity and quality.

It is recommended that the proposed vegetated filter strip located adjacent to W6 should be re-evaluated. Specifically, it is recommended that the 3 foot section of grassed slope area between the stone trench (guide rail) and the depressed grassed swale be eliminated. This would allow enough area to incorporate mitigation plantings and infiltration of runoff along the length of the parking lot. Likewise, this would allow for water quality treatment and infiltration of stormwater runoff resulting in the ability to manage stormwater quantity and quality prior to reaching the wetland.

Lastly, it is recommended that the proposed storm drainage outlet leading to a proposed fieldstone slope/berm within the northeastern portion W3 should be redesigned to avoid direct wetland impacts. Relocating the fieldstone berm along the wetland-upland interface boundary would eliminate filling of this wetland and allow stormwater management treatment to occur in the uplands prior to reaching the wetland. The stormwater drainage outlet could be designed to discharge further from the wetland and into a water quality basin that would be planted with native grasses and sedges. Shrubs and trees should be planted along the wetland limit on the upland side of the fieldstone wall.

Wetlands and Watercourses

The proposed Bisceglie-Scribner Park project has been designed to avoid and minimize impacts to inland wetlands and watercourses to the greatest extent practicable. Alternative designs have been considered and design refinements have been made to make this possible. The three field design, as submitted by Milone & MacBroom, Inc. is an alternative to the original four field concept desired by the Town's Park and Recreation Department. Abandonment of the additional field has proven to be both feasible and prudent in light of the sensitivity to environmental concerns.

Encroachment into a wetland area (W3) is unavoidable in order to provide an acceptable slope from upland areas. This intrusion has the potential to cause short-term and long-term impacts. Short-term impacts primarily consist of potential soil erosion and sedimentation during construction. These have been addressed through the design of an appropriate sediment and erosion control plan, as previously mentioned. The placement of an appropriately designed hydrologic equalizer blanket (stone wrapped in geo-fabric along the wetland surface prior to filling, is expected to allow certain wetland functions to continue post-construction. In doing so, the hydrology of the wetland should be maintained, as the area proposed to be altered is minimal (approximately 900 square feet).

Long-term impacts are considered permanent alterations of wetlands and watercourses (i.e., filling, excavation, obstruction, etc.). The potential for long-term (post-construction) wetland impacts is related to the covertype and land use associated with each regulated act. Potential long-term impacts are proposed to be mitigated with the implementation of the extensive planting plan (enhancing wildlife habitat) and stormwater quality Best Management Practices (BMP's).

The proposed site improvements have been primarily confined within the upland areas of the site. This design approach has allowed for the preservation of significant areas of wetland, watercourse, and upland communities.

Wetland Activities, Impacts, and Alternatives

Although most of the project activities will not disturb onsite wetlands, one activity will disturb a small amount of wetlands (900 square feet) to complete the project. This activity is the disturbance of Wetland 3 (W3) to construct the edge of slope adjacent to Baseball Field #1 and act as a stormwater management feature within the wetland.

Proposed Improvements: A small area is proposed to be altered for the creation of a slope adjacent to Baseball field #1 and a fieldstone slope/berm with plantings. The area will involve the placement of clean fill, landscape grasses, shrubs and trees on the slope and within the wetland area.

Potential Impacts: To construct the slope, approximately 900 square feet of wetland will be disturbed. The slope construction will reduce the capacity of this specific wetland area to perform certain wetland functions: trees and shrubs will be removed thereby eliminating some wildlife habitat; and a portion of wetland will be filled reducing stormwater quality renovation and storage. Affects of disturbance are minimized because the disturbance area is very narrow and located along the existing edge of the wetland.

Mitigation: Mitigation proposed for the unavoidable impacts include an extensive planting plan and water quality enhancements (water quality basin). This will contribute to providing wildlife habitat and improving stormwater runoff quality.

Alternatives: Feasible and prudent alternatives have been considered that would eliminate the need for filling of this wetland. As previously mentioned, the proposed storm drainage outlet leading to a proposed fieldstone slope/berm within the northeastern portion W3 could be redesigned to avoid direct wetland impacts. Relocating the fieldstone berm along the wetland-upland interface boundary would eliminate filling of this wetland and allow stormwater treatment to occur in the uplands prior to reaching the wetland. The stormwater drainage outlet could be designed to discharge further from the wetland and into a water quality basin that would be planted with native grasses and sedges. Shrubs and trees should be planted along the wetland limit on the upland side of the fieldstone wall.

5.0 CONCLUSIONS

The Town of Weston proposes to construct three athletic fields, a parking lot, an accessory pavilion building and related site improvements. The project and alternatives have been designed to avoid, to the greatest extent practicable, significant adverse impacts to critical habitats and natural resources (e.g., wetlands, watercourses, and floodplains). Alternatives have been suggested to further avoid wetland impact on the project site.

Most of the proposed improvements have been confined to upland areas in the central portion of the site. Stormwater management measures have been designed and will be installed in the short and long-term to ensure that surface water quality is protected to the greatest extent practicable and that significant degradation does not occur. Furthermore, the project does not encroach or reduce the ability of the West Branch Saugatuck River floodplain to continue to store and convey peak floodwater flows.

Including the alternatives presented herein, the proposed project has been designed in a manner that balances the needs of development with the need for environmental protection and preservation.

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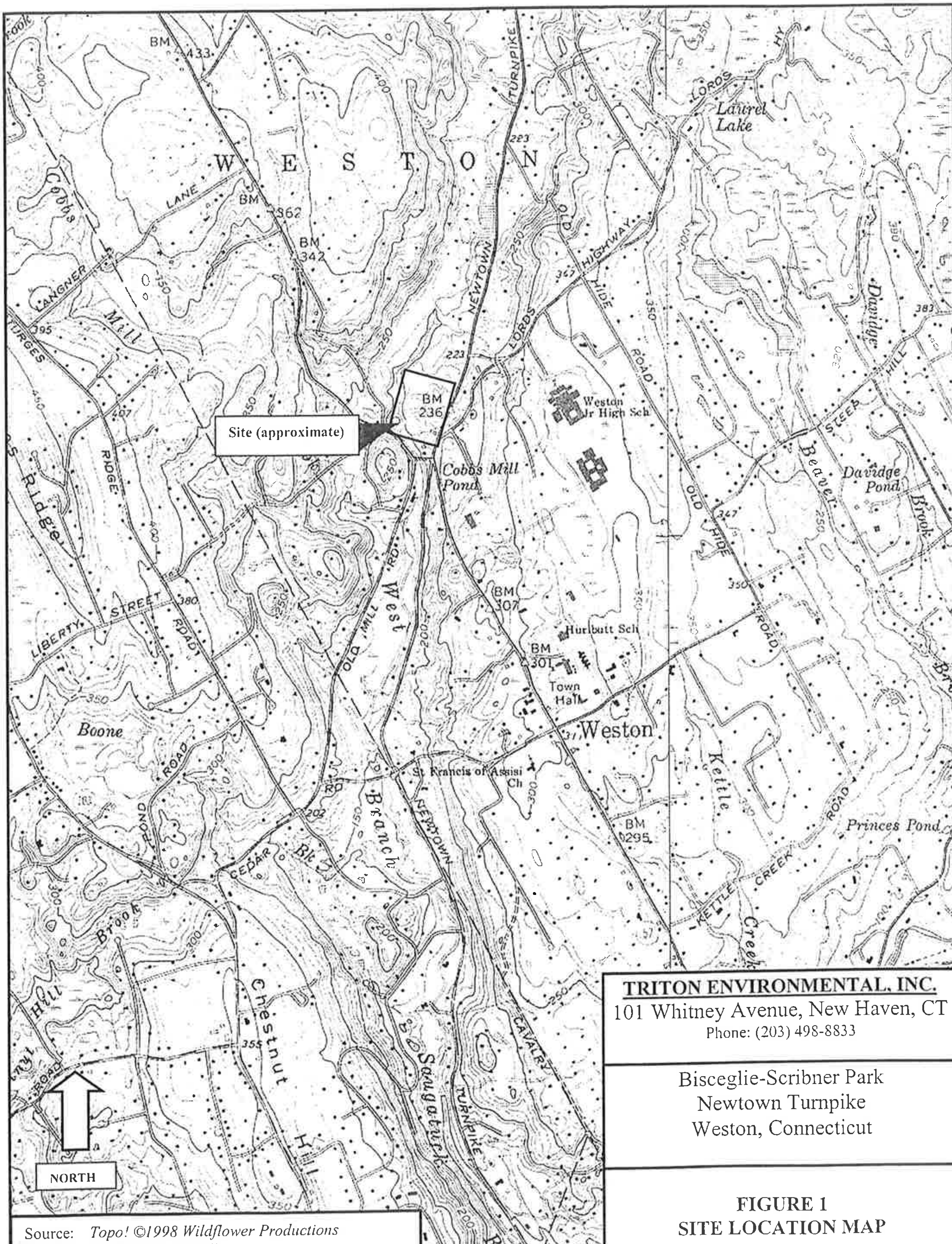


TRITON ENVIRONMENTAL, INC.
101 Whitney Avenue, New Haven, CT
Phone: (203) 498-8833

Bisceglie-Scribner Park
Newtown Turnpike
Weston, Connecticut

FIGURE 1
SITE LOCATION MAP

Source: *Topo! ©1998 Wildflower Productions*
Scale: 1:24000 (1"=2000')

TABLE 1
VEGETATION INVENTORY
Bisceglie-Scribner Park – Weston, CT

SCIENTIFIC NAME	COMMON NAME	HABITAT
TREE		
Acer rubrum	Red Maple	W1-W5, Uplands
Acer saccharum	Sugar Maple	Uplands
Betula lenta	Black Birch	Uplands, W3
Carpinus caroliniana	Ironwood	Uplands
Carya ovata.	Shagbark hickory	W2, Uplands
Fagus grandifolia	American Beech	W5, Uplands
Fraxinus pensylvanica	Green Ash	W3-W5, Uplands
Juniperus virginiana	Eastern Redcedar	Uplands
Populus tulipifera	Tuliptree	W3, W5, Uplands
Prunus serotina	Black Cherry	Uplands
Quercus alba	White oak	Uplands
Quercus rubrum	Red Oak	Uplands
Ulmus americanum	American Elm	W3
SAPLING/SHRUB		
Acer rubrum	Red Maple	W1-W5, Uplands
Acer saccharum	Sugar Maple	Uplands
Berberis thunbergii	Japanese Barberri	W2,W3,Uplands
Carpinus caroliniana	Ironwood	W1-W5, Uplands
Clethra alnifolia	Sweet Pepperbush	W3, W4
Euonymous alata	Winged Euonymous	W2, Uplands
Fagus grandifolia	American Beech	W5, Uplands
Fraxinus pensylvanica	Green Ash	W3-W5, Uplands
Ilex verticillata	Winterberry	W3, W5
Lindera benzion	Spicebush	W1-W5,Uplands
Ligustrum vulgare	Privet	W2, W3, Uplands
Lonicera tartarica	Tartarian Honeysuckle	W1-W5, Uplands
Prunus serotina	Black Cherry	Uplands
Rosa palustris	Swamp Rose	W1, W3
Rosa multiflora	Multiflora Rose	W1,W2, W3,Uplands
HERBS*		
Alliaria officinalis	Garlic Mustard	W1, W5 Uplands
Erythronium americanum	Trout-Lily	W1-W5, Uplands
Polystichum acrostichoides	Christmas Fern	Uplands
Symplocarpus foetidus	Skunk cabbage	W3-W4, Uplands
LIANAS*		
Celastrus scandens	American bittersweet	W1, W3, Uplands
Smilax rotundifolia	Common Greenbriar	Uplands, W1, W3
Toxicodendron radicans	Poison Ivy	W1, W2,W3, Uplands

*Incomplete due to time of year constraints.

TABLE 2
WILDLIFE SPECIES LIST OBSERVED AND POTENTIALLY OCCURRING
Bisceglie-Scribner Park – Weston, CT

Scientific Name	Common Name	Occurrence
AMPHIBIANS & REPTILES		
Ambystoma maculatum	Spotted salamander	PU
Bufo americanus	American toad	U
Bufo americanus	Eastern American toad	PU
Coluber constrictor	Northern black racer	PU
Desmognathus fuscus	Northern Dusky salamander	PU
Diodophis punctatus edwardsi	Northern ringneck snake	PU
Eurycea bislineata	Northern Two-lined salamander	PU
Hemidactylium scutatum	Four-toed salamander	PU
Heterodon platirhinos	Eastern hognose snake	PU
*Hyla crucifer**	Spring peeper	U
Lampropeltis t. triangulum	Eastern milk snake	PU
Notophthalmus viridescens	Red-Spotted Newt	PU
Plethodon cinereus	Redback salamander	U
Plethodon glutinosus	Northern Slimy salamander	PU
Rana catesbeiana	Bullfrog	PU
Rana sylvatica	Wood frog	U
Thamnophis s. sirtalis	Eastern garter snake	U
BIRDS		
Aix sponsa	Wood duck	PU
Accipiter striatus	Sharp-shinned hawk	PU
*Anas platyrhynchos**	Mallard	U
Archilochus colubris	Ruby-throated hummingbird	PU; MB
Ardea herodias	Great blue heron	PU
*Branta canadensis**	Canada Goose	U
*Buteo jamaicensis**	Red-tailed hawk	U, R
*Cardinalis cardinalis**	Northern cardinal	U; R
Colaptes auratus	Northern flicker	PU; MB
*Corvus brachyrhnchos**	American crow	U; R
*Cyanocitta cristata**	Blue jay	U; R
Dendroica coronata	Yellow-rumped warbler	PU; M
Dendroica petechia	Yellow warbler	U, MB
*Dumetella carolinensis**	Gray catbird	U; MB
Hylocichla mustelina	Wood thrush	PU; MB
Junco hyemalis	Dark-eyed junco	PU; M
Melanerpes carolinus	Red-bellied woodpecker	PU; R
Meleagris gallopavo	Wild turkey	U, R
*Melospiza melodia**	Song sparrow	U; R
*Mimus polyglottos**	Northern mockingbird	U, R
*Mniotilta varia**	Black and white warbler	U; MB
Myiarchis crinitis	Great crested flycatcher	PU; MB
*Parus atricappillus**	Black-capped chickadee	U; R
Parus bicolor	Tufted titmouse	PU; R
Pheucticus ludovicianus	Rose-breasted grosbeak	PU; MB

APPENDIX A

BIRDS (continued)		
Picoides pubescens	Downy woodpecker	U; R
Pipilo erythrophthalmus	Rufous-sided towhee	PU; MB
Setophaga ruticilla	American redstart	PU; M
Sitta carolinensis	White-breasted nuthatch	PU; R
Strix varia	Barred owl	PU; R
Turdus migratorius	American robin	U; MB
Vermivora pinus	Blue-winged warbler	PU; MB
Vireo olivaceous	Red-eyed vireo	PU; MB
*Zenaida macroura**	Mourning dove	U; R
Zonotrichia albicollis	White-throated sparrow	PU, M
MAMMALS		
Blarina brevicauda	Short-tailed shrew	PU
Canis latrans	Coyote	PU
Didelphus virginiana	Virginia opossum	U
Glaucomys volans	Southern flying squirrel	PU
Marmota monax	Woodchuck	U
Mephitis mephetis	Striped skunk	U
*Odocoileus virginianus**	White-tailed deer	U
Ondatra zibethicus	Muskrat	PU
*Procyon lotor**	Raccoon	U
*Sciurus carolinensis**	Gray squirrel	U
Sylvilagus floridanus	Eastern cottontail	U
*Tamias striata**	Eastern chipmunk	U
Vulpes vulpes	Red fox	U

Occurrence Code:
U = User
R = Resident
MB = Migrant Breeder
M = Migrant
PU = Potential User

Asterisk * Indicates species observed either directly or by sign.

APPENDIX A

TABLE 3
HGM FUNCTIONAL EVALUATION
Bisceglie-Scribner Park – Weston, CT

HGM CLASS	RIVERINE	DEPRESSION	RIVERINE	DEPRESSION	DEPRESSION
CATEGORY	**W1**	**W2**	**W3**	**W4**	**W5**
Modification of Groundwater Discharge	**Low**- The primary source of water is surface water runoff on an intermittent basis.	**Mod**- Due to underlying outwash deposits, this wetland is highly influenced on a seasonal basis (wet season-discharge, dry season-recharge). Combined with its relatively small size, this wetland provides moderate groundwater modifications to this function.	**Mod**- Typically, riverine systems do not contribute at a high capacity to this function based on their flow-through nature. However, a large portion of this wetland appears to be influenced by groundwater discharges (nearest Newtown Rd).	**High**- Depression wetlands generally, have a high capacity to contribute to this function. The relatively undisturbed nature of this wetland and underlying till deposits influence its ability to contribute at a high level.	**Mod**- Depression wetlands generally, have a high capacity to contribute to this function. However, this wetland is limited in size and underlain with outwash deposits (higher infiltration rates than till deposits).
Modification of Groundwater Recharge	**Low**- Due to the wetlands intermittent qualities, relatively short length and flow-through characteristics, this wetland does not contribute to recharging the groundwater to any significant degree.	**Mod**- As stated above, the limited size of the onsite wetlands and the underlying outwash deposits affects its capacity to contribute at a higher level.	**Mod**- Typically, riverine systems do not contribute at a high capacity to this function based on its physical flow-through character. However, a large portion of this wetland appears to contribute to recharge capabilities (nearest the road).	**High**- Wetlands that have a high capacity to modify groundwater typically have a high capacity to modify groundwater recharge.	**Mod**- Depression wetland generally, have a high capacity to contribute to this function. However, this wetland is limited in size and is underlain with outwash soils.
Storm and Floodwater Storage	**Low**- Based on the flow-through character, and sloping wetland, little opportunity exists to provide this function.	**Mod-High**- The juxtaposition of this wetland to W1 and W3 (Saugatuck River), allows this wetland to contribute to storm and flood water storage.	**High**- The floodplain areas associated with the River, as well as depression areas associated with the tributary brook allow a high capacity to contribute to this function.	**High**- Based on the depression character, this wetland has a high capacity to contribute to this function. The juxtaposition of this wetland to the tributary brook is an important component to how important this wetland is in the system.	**Mod**- Although this is an isolated wetland, overland runoff and potential extreme flooding from the river may be temporarily stored within this small wetland.

HGM CLASS	RIVERINE	DEPRESSION	RIVERINE	DEPRESSION	DEPRESSION
CATEGORY	W1	W2	W3	W4	W5
Modification of Stream Flow	**Mod**- Wetlands with perennial outlets allow the highest contribution to this function. The intermittent nature of this wetland limits its overall ability.	**Low-Mod**- Generally, wetlands without an outlet do not contribute to any significant degree to this function. No outlet defined outlet was observed onsite.	**High**- Perennial outlets allow the highest capacity to contribute to this function. Therefore, this system allows a high capacity to perform this function.	**Low**- Generally, wetlands without an outlet do not contribute to any significant degree to this function. Surface water does appear to flow toward W3 but not to any significant degree that would increase its functional capacity.	**Low**- Generally, wetlands without an outlet do not contribute to any significant degree to this function, as this wetland is a confined basin.
Modification of Water Quality	**Mod**- Generally, riverine systems do not have the ability to contribute to any significant degree to this function. However, because this wetland is downgradient from the road, it allows minor pretreatment prior to reaching other wetlands and the River. Therefore, it is an important component on site. It's sloping nature and narrow linear morphology, diminishes its ability to contribute to a high degree.	**High**- Depression wetlands with no outlets, have the highest capacity to perform this function. The juxtaposition of this wetland to the River is an important feature in its ability to modify water quality prior to reaching the River system.	**Mod-High**- Generally, riverine systems do not have the ability to contribute to any significant degree to this function. However, the floodplain and other wetland areas of this system maintain the opportunity to perform critical water quality modification (renovation).	**Mod-High**- Depression wetlands with no outlets, have the highest capacity to perform this function Surface water within this wetland appears to flow to the tributary brook in W3. However, it is an important link in the system, and does have depression areas to temporarily store water for renovation purposes.	**High**- The depression nature of this wetland (with no outlet) allows a longer residence time for water, settling suspended particles, infiltration of the water and filtering pollutants.

HGM CLASS	RIVERINE	DEPRESSION	RIVERINE	DEPRESSION	DEPRESSION
CATEGORY	W1	W2	W3	W4	W5
Export of Detritus	**Mod**- This wetland does contribute to the production and release of organic material necessary for food chain support. However, it is a limited area and sparsely vegetated.	**Mod**- This wetland does produce organic materials for food chain support, but mostly locally and not to downstream areas. However, should an outlet exist or frequent flooding to the River, this function could be higher.	**High**- This wetland has the ability to produce and transport a large volume of organic material from offsite upstream and onsite sources to downstream areas for food chain support.	**Mod-High**- This wetland does produce organic materials for food chain support. During storm events downstream areas receive this material from overland runoff.	**Low**- The ability of this wetland to transport detritus material is limited (no outlet). It primarily provides a limited food source locally.
Contribution to Abundance and Diversity of Wetland Vegetation	**Low-Mod**- This wetland is sparsely vegetated, and contains non-native invasive species, predominately facultative wetland species.	**High**- This wetland is primarily a closed-canopy forested swamp and maintains a relatively dense understory bordering a mixed coniferous-deciduous forested upland community.	**High**- There is a high degree of vegetation diversity within this system ranging from floodplain to depression swamp habitats and ranges from a well defined stratified forest (tree/sapling/shrub/herb layer) to an abrupt tree to herb layer transition.	**Mod**- The relatively small size offers limited diversity of vegetation. However, quality representative species provide essential habitat to facultative and obligate wetland species.	**Low**- This is a relatively poor quality wetland with little diversity of wetland flora. Upland species appear as one of the dominants in the tree layer.
Contribution to Abundance and Diversity of Wetland Fauna	**Low-Mod**- Typically this function is directly related to the abundance and diversity of wetland flora. Based on this fact, the diversity of wetland fauna is expected to be low-mod. This wetland intermittently receives runoff from the road (sands, elevated water temperatures), which may is not expected to provide favorable habitat conditions.	**High**- An area of this wetland appears to have ephemeral qualities that can provide critical habitat for wetland-dependant species.	**High**- In addition to its high wetland flora functions, an area of this wetland appears to have ephemeral qualities that can provide critical habitat for wetland-dependant species.	**Mod**- This function is directly related to the abundance and diversity of wetland flora. Habitat exists for a diversity of species (migratory and resident populations).	**Low**- As stated above, the low wetland flora diversity corresponds to a low capacity for providing habitat to a diversity of wetland fauna.

WILLIAM L. KENNY, CSS, RLA
SENIOR PROJECT MANAGER

Mr. Kenny is a senior project manager at Triton Environmental, Inc. He has over 15 years of experience in site and environmental planning and construction. Mr. Kenny is a certified soil scientist and licensed landscape architect. Prior to joining Triton Environmental in 1999, Mr. Kenny was project manager at Jay Fain & Associates; Divney Tung Schwalbe, LLP; Towers/Golde, PC; and Winter Ridge Nursery and a self-employed environmental consultant. Mr. Kenny's principal functions at Triton Environmental include business development, project management, and environmental science and planning services.

Education

Yale University, M.E.M., 1992. Masters Degree in Environmental Management. Concentration and thesis work in ecosystem ecology, hydrology, and restoration.

University of Connecticut, B.S., 1987. Bachelor of Science Degree in Landscape Design.

Representative Project Experience

Wetland Delineation, Assessment, and Impact Mitigation

Mr. Kenny has extensive experience with wetland delineation, assessment, and impact mitigation projects and obtaining related regulatory approvals as a project scientist and manager. Project work has included approval and construction documents for residential, commercial, recreational, and institutional developments. Specific tasks Mr. Kenny has completed include: (1) wetland delineations and functional assessments in Connecticut and New York in accordance with federal, state, and local requirements; (2) development planning and design consultation to minimize wetland impacts; (3) impact assessments and wetland construction mitigation designs; and (4) hydrologic evaluations for inland and tidal wetland restoration and creation projects.

Water Resource Management

Mr. Kenny has a wide range of experience with water resource management projects and attaining related development approvals and permits as a project manager and scientist. Project work has included stormwater pollution prevention plan preparation in accordance with New York City, New York State, and Connecticut requirements; stormwater treatment Best Management Practices design; stormwater pollutant loading and BMP effectiveness modeling; groundwater modeling for subsurface sanitary disposal systems, and erosion and sediment control plan preparation for residential, commercial, recreational, and institutional developments. Specific projects include an 18-hole golf course, a commercial building spanning a brook flowing directly to a drinking water reservoir, and numerous residential developments.

Natural Resource Inventories and Impact Assessments

Mr. Kenny has broad experience with preparing natural resource inventories and impact assessments and attaining related development approvals and permits as a project manager and scientist. Project work included Environmental Impact Statement (EIS) preparation to fulfill New York State requirements. Specific management or technical responsibilities included mapping and assessing existing conditions and potential impacts to bedrock and surficial geology, soils, vegetative communities, wetlands, surface and groundwater bodies, and wildlife and their habitat.

Site Planning and Landscape Architecture

Mr. Kenny has more than 15 years experience with site planning and landscape architectural projects either as the primary designer and project manager, a collaborating design professional, or construction contractor. Mr. Kenny has design and management experience with all project phases: from master planning and conceptual design to construction and bid document preparation and construction observation. Selected projects include a town park (with athletic fields, tennis and basketball courts, etc.), urban streetscapes, an urban park, and residential subdivisions.

Professional Training

Pond Management
Wetland Construction
Wetland Functional Assessment Techniques
Urban Stormwater Management Practices
Erosion and Sediment Control
Soil Sciences
Effective Communicating
Computer Aided Drafting

Publications

Kenny, W.L. 1995. The West River salt marsh: past and present. In *Proceedings of the West River Symposium*, ed. By E. McDiarmid, P.K. Barten, and C.J. Genshlea, 33-40. New Haven, CT: Center for Coastal and Watershed Systems, Yale School of Forestry and Environmental Studies.

Barten, P.K. and W.L. Kenny, 1997, The hydrologic structure and function of the West River marsh. In *Bulletin Number 100, Restoration of an Urban Salt Marsh: An Interdisciplinary Approach*, Bulletin Number 100, vol. ed. by D.G. Casagrande and bul. series ed. by J. A. Miller and J. Cappock, 103-122. New Haven, Connecticut: Yale School of Forestry and Environmental Studies.

Contributing graduate student author to:
Bormann, F.H., D. Balmori, and G.T. Geballe, 1993. *Redesigning the American lawn: a search for environmental harmony.* Yale University Press, New Haven and London.

Professional Affiliations and Registrations

Shellfish Commission, Fairfield, Connecticut (Member 1995 –present, Chairman 1996 – present)
Connecticut Association of Wetland Scientist (Member 1999-present, Secretary 2001)
Society of Soil Scientist of Southern New England (Member 1995-present)
Society of Wetland Scientists (Member 2001-present)
Professional registration, Landscape Architecture, #664, State of Connecticut (1990-present)
American Society of Landscape Architects (Member 2001-present)

JEFFREY R. SHAMAS, PWS, CE
PROJECT MANAGER

Mr. Shamas has over 12 years of diversified environmental experience in planning and management, and development and implementation of environmental laws. Mr. Shamas is a Certified Professional Wetland Scientist, a Certified Ecologist, received a Certificate of Training under the US Army Corps of Engineers for wetland delineation and is an approved Wetland Agent under the Connecticut Department of Environmental Protection requirements. Prior to joining Triton Environmental, Inc., in 2000, Mr. Shamas was a project manager for Jay Fain & Associates, and was the Principal of a self-employed environmental consulting company ("ECO-WET, LLC"). In addition, Mr. Shamas was the Environmental Planner, Inland Wetland Administrator and Deputy Tree Warden in Stratford, Connecticut for over 9 years. Mr. Shamas's principal functions at Triton Environmental, Inc. includes project management, business development, environmental science and natural resource planning, assessment and permitting.

Education

University of Massachusetts, Amherst, MA, 1999-present. Pursuing Master of Science Degree in Plant and Soil Science (including Soil Scientist Certification).

Johnson State College, Johnson, Vermont, 1989. Bachelor of Science Degree in Ecology.

Representative Project Experience

Land Use Planning-Wetland Delineation, Permitting and Mitigation

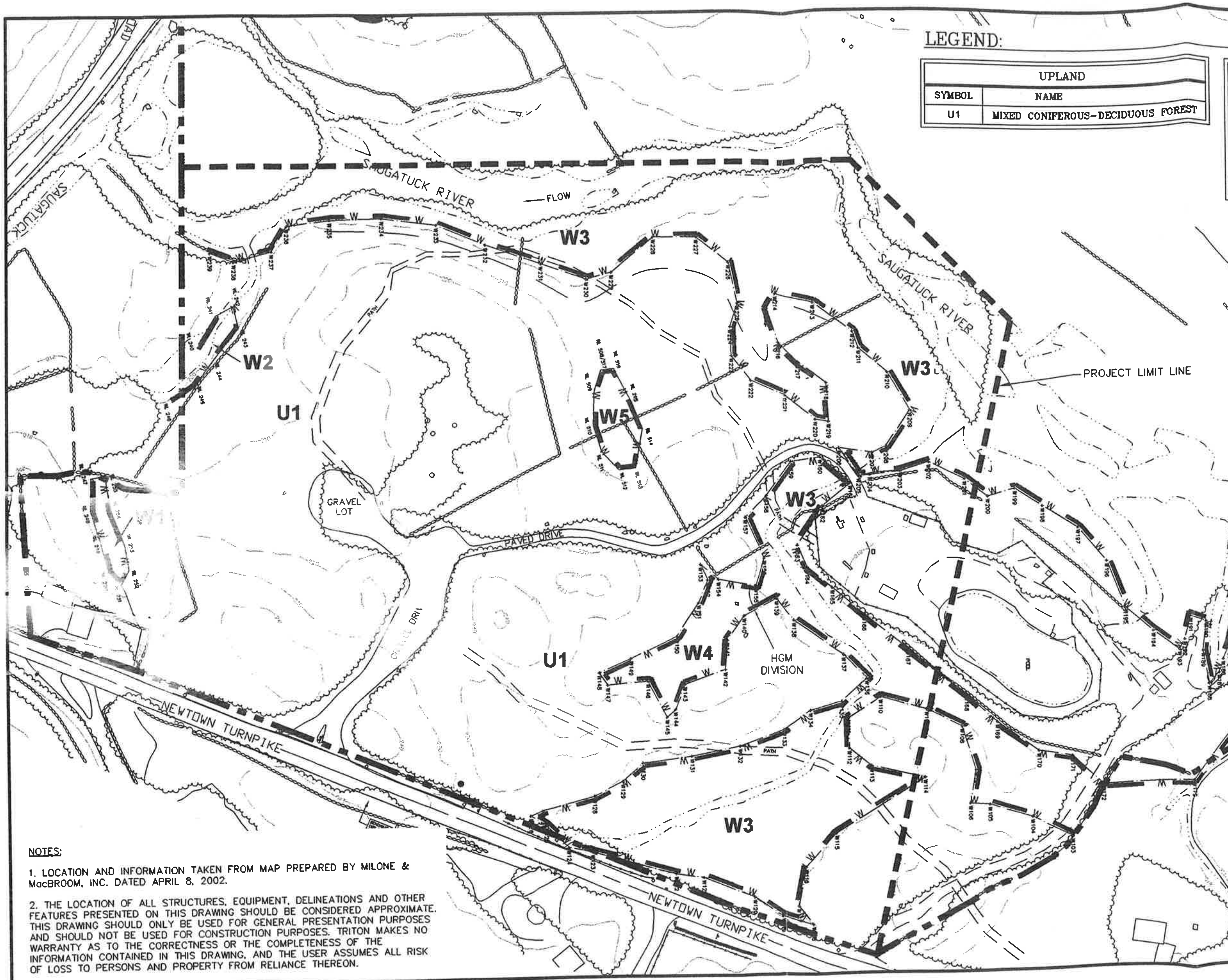
Mr. Shamas has been mapping and assessing wetlands for over 12 years which includes the identification of existing vegetation cover types, wildlife resource areas, classification of wetland systems as well as assessing proposed alterations. Specific duties Mr. Shamas has completed includes: wetland delineation and functional assessments in New York, Connecticut, and Massachusetts under federal, state and local requirements; impact assessments and appropriate mitigation designs for wetland restoration and creation projects; and assessing and planning developments in a way that gains regulatory approvals while achieving development objectives.

Ecological Inventories and Impact Assessments

Mr. Shamas has a diverse ecological background in coastal and inland ecosystems. Mr. Shamas has performed numerous comprehensive ecological inventories and impact assessments for development projects in the Northeast/New England Region including Connecticut and New York State. Project tasks included the preparation of Environmental Impact Statements. These assessments and inventories were critical in attaining permits at local, state and federal levels for residential and commercial developments.

Site Development Planning and Feasibility Studies

Mr. Shamas has been involved with all phases of the site development process for over 12 years. Mr. Shamas has preformed numerous site development feasibility studies for the planning of residential and commercial facilities. Responsibilities included all phases from planning through construction observation/inspection.



LEGEND:

UPLAND	
SYMBOL	NAME
U1	MIXED CONIFEROUS-DECIDUOUS FOREST

WETLAND/WATERCOURSE	
SYMBOL	NAME
W1	RIVERINE WETLAND
W2	DEPRESSION WETLAND
W3	RIVERINE/FLOODPLAIN WETLAND
W4	DEPRESSION WETLAND
W5	DEPRESSION WETLAND

NOTES:

1. LOCATION AND INFORMATION TAKEN FROM MAP PREPARED BY MILONE & MacBROOM, INC. DATED APRIL 8, 2002.

2. THE LOCATION OF ALL STRUCTURES, EQUIPMENT, DELINEATIONS AND OTHER FEATURES PRESENTED ON THIS DRAWING SHOULD BE CONSIDERED APPROXIMATE. THIS DRAWING SHOULD ONLY BE USED FOR GENERAL PRESENTATION PURPOSES AND SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES. TRITON MAKES NO WARRANTY AS TO THE CORRECTNESS OR THE COMPLETENESS OF THE INFORMATION CONTAINED IN THIS DRAWING, AND THE USER ASSUMES ALL RISK OF LOSS TO PERSONS AND PROPERTY FROM RELIANCE THEREON.

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BISCEGLIE-SCRIBNER PARK
NEWTOWN ROAD
WESTON, CONNECTICUT

FIGURE 2
ECOLOGICAL COMMUNITIES MAP