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ENVIRONMENTAL CONSULTING, LLC

Environmental Planning & Site Analysis  
Wetland Mitigation & Restoration Plans  
Wetland Delineation & Assessment  
Natural Resource Management  
Pond & Lake Management  
Wildlife & Plant Surveys  
Breeding Bird Surveys  
Landscape Design

May 4, 2009

Mr. Thomas Heaslip, Chairman  
Harrison Planning Board  
One Heineman Place  
Harrison, New York 10528

**Re: Pepsico Property, 700 Anderson Hill Road, Town of Harrison –**

**Wetland/Watercourse Investigation and Delineation, Evaluation and Functional Assessment, Recommended Mitigation Measures for Disturbance within regulated wetland and wetland buffer areas**

Dear Chairman Heaslip and Members of the Planning Board:

I have completed a wetland/watercourse investigation of the subject property located at 700 Anderson Hill Road, Town of Harrison, New York. The environmental review included investigation and determination of all wetland and watercourse resources present on the property, completion of a wetland functional assessment, evaluation of proposed wetland and buffer impacts as part of the proposed "Project Renew", and recommendations regarding mitigation measures for disturbances proposed within regulated wetland and wetland buffer areas.

**Wetland Delineation**

An assessment of the existing wetlands and watercourses present on the subject parcel was completed between 02-08-08 and 02-25-08. The property is approximately 150 acres located east of Lincoln Ave., south of Anderson Hill Rd., west of Blind Brook, and north of Lincoln Lane.

The wetland area was flagged in accordance with Chapter 149 "Freshwater Wetlands" of the Code of the Town of Harrison, and supplemented by the technical criteria for routine determinations as outlined in the 1987 Army Corps of Engineers Wetland Delineation Manual. Vegetation, soils and hydrological parameters were used to determine the outer wetland boundary limits.

Vegetation was sampled along each of the wetland areas. Dominant vegetation was noted at each point, and hydrophytic (wetland) vegetation was considered to be present when 50 % or more of the vegetation throughout the strata of each plant community was classified as either facultative, facultative wet, or obligate. Hydrophytic vegetation was also positively identified based on the presence of secondary characteristics

including morphological adaptations for occurrence in wetlands. Soils were then sampled where facultative or facultative wet vegetation was dominant. Soils samples were taken with a dutch auger to a depth of 16 inches of the soil profile where possible. Hydric soil indicators noted include: presence of a seasonal high water table, inundation, presence of hydrogen sulfide odor, soil chroma of 1 (without mottles) or 2 (with mottles) as per the Munsell Soil Color Chart, gleying, iron and manganese concretions, and oxidized rhizospheres. Hydric soils were determined to be present when any one of these indicators was observed.

Each area along the wetland/upland interface was also examined to determine if wetland hydrology was present at some time during the growing season. Indicators of wetland hydrology noted within the wetland areas included soil saturation within the test hole or at the soil surface, inundation, positive drainage patterns, and watermarks on the tree trunks or water-stained leaves on the ground.

When an observation point along the wetland/upland interface contained all three wetland parameters: dominant hydrophytic vegetation, hydric soils, and evidence of hydrology, the point was determined to be wetland. The area surrounding the observation point was then investigated to determine the upland boundary via the same methodology. The delineation was then confirmed by placing sequentially numbered orange surveyors flagging labeled "Wetland Boundary" along the respective boundary. Yellow pin flags were used to delineate the wetland/upland boundary where vegetation was sparse.

The wetlands and watercourses present on the property are subject to local regulation by the Town of Harrison. Blind Brook is classified as a Class "C" waterbody by New York State Department of Environmental Conservation under the NYSDEC's Protection of Waters Program Regulations (Environmental Conservation Law Article 15). Class "C" streams are not subject to regulation under ECL Article 15. The existing ponds due to their size are federally regulated by the ACOE. The ACOE does not regulate any buffer.

Please refer to the "Survey of Property" for PepsiCo, Inc., as prepared by John Meyer Consulting, PC., that depicts the locations of wetland and watercourse features and respective regulated buffer areas. Areas identified as watercourses usually do not meet all three parameters. The boundary of each respective wetland and watercourse area identified on the property has been field reviewed by Beth Evans, the Town's wetlands consultant.

### Existing Conditions

Most of the property is developed with large office buildings, accessory structures, paved roads and parking areas for PepsiCo employees. Much of the area around this development is landscaped and manicured grass areas with walking paths. Botanical plantings and maintained gardens are located on several areas throughout the property. Native forested areas are located at the eastern edge of the property near Blind Brook,

at the southwestern end and southern end of the property. The native forest is moderately-aged mixed deciduous woodland and dominated with species such as red oak, red maple, sugar maple, American beech, black oak, ash, elm, eastern hemlock, and black locust. The understory is sparse with some clearing of the vegetation and coarse woody debris beneath the forest. Understory species include spicebush, red-osier dogwood, sensitive fern, and witch hazel. In some areas, the native vegetation has been planted. Topographically, the entire property contains few steep slopes and drains south either directly into the Blind Brook on the eastern side or to watercourse systems on the western and southern side, which drains south off the property into the Blind Brook. The Blind Brook drains south, through the City of Rye and into the Long Island Sound. Several man-made ponds are located on the property.

### Wetland Features

The wetland system on the western side of the property is primarily a watercourse system flowing south from Anderson Hill Road to the north. The watercourse system has been considerably altered with two ponds which act as detention basins at the northwest corner. The area is quite manicured with grass to the edge of each pond. Several ornamental trees have been planted in the surrounding upland including weeping willows, pines, blue spruce, and European beech. The ponds are non-vegetated with some submerged aquatics. Mallards and bullfrogs were observed in the pond. The ponds drain south via a watercourse channel through a forested garden. The upland areas consisted of red oak, black oak, ash, elm, white oak, gray dogwood, witch hazel, and black locust. Along the watercourse channel and in wetter areas, red maple, red osier dogwood, sensitive fern, were common hydrophytes. The watercourse was flowing south with rocky, sandy and muddy bottom with little to no vegetation. South of the garden the watercourse becomes more ditched and altered. The soils were hydric with 10YR 2/2 with mottles within 6 inches. Water stained leaves were also observed. This section of the watercourse was flagged with flag #'s A-01 to A-59. A-01 to A-30 delineated the eastern boundary while A-31 to A-59 delineated the western boundary. The watercourse continues to flow south from A-30/A-31 underground for approximately 500 feet. The watercourse then emerges through a culvert and continues south near flag # B-13.

A watercourse/drainage ditch from the western side of Lincoln Avenue, off the site, flows south and crosses Lincoln Ave. through a culvert and connects with the watercourse channel on the western side of the PepsiCo property and is indicated on the map at B-01. Another flowage area draining from Lincoln Ave. at D-01 also connects to the main watercourse and continues south. The southwest area where the main watercourse is flowing through is more of a native, sloping woodland area with some seep flows draining east. Some are ditched swales. This gently sloping forested hillside is a moderately aged forest with some young trees and little understory which shows signs of being managed. Sugar maple, red maple, elm and red oak are dominant trees. Several culverts east of the main stream carry water flows from adjacent developed residential areas. The east side of the watercourse was flagged with #'s B-01 to B-50. The western boundary was flagged with D-01 to D-22 and C-01

to C-27. Wetter areas are dominated by red maple and skunk cabbage and primarily confined to the watercourse edges. Wetland soils in this area were 10YR 3/2 with mottles within 6 inches. Other indicators included water stained leaves, positive water flow, saturated soils, and buttressed trees. A drainage ditch/watercourse is located between the office buildings and the western parking lots and flows south through a garden then underground and west to the main watercourse. The eastern edge was flagged with L-01 to L-13 and the western edge was flagged with #'s M-01 to M-21. There was positive flow and this area appears to collect surface water run-off from manicured areas to the north. Little vegetation was observed within this area and the majority is maintained as a landscaped garden. Some Phragmites grass stems appeared to be cut in this area. The soils exhibited a histic epipedon in the wetter areas where the ditch flattened out. An Eastern bluebird was observed foraging in the forest just south of this ditch. The main watercourse continues south off the property, through residential properties and then flows into the Blind Brook.

A large pond is located just south of the main PepsiCo office buildings. This large man-made pond with no apparent inflow was flagged with E-01 to E-58. Manicured lawn and several ornamental trees dominate the upland surrounding. Only submergent aquatic vegetation was observed within the pond. Mallards and a large number of carp inhabited the pond.

South of the pond the property slopes steeply to the south. A drainage area was flagged with #'s F-01 to F-21. No inlet appears to be present and may be groundwater fed. This area was semi-forested with red oak, white oak, black oak, dying red cedar and some planted spruce trees. The wetland area was dominated by spicebush, sensitive fern, and skunk cabbage. Soils were quite organic in spots with an organic layer a few inches deep and exhibiting histic soil features. Soils were 2.5YR 2.5/1 with oxidized root channels, positive drainage patterns, saturation to the surface, and water stained leaves.

The remaining flagged areas consist of the Blind Brook and various watercourse systems on the property that flow directly into it. At the southeast end of the property, the outflow of the pond is located near G-01/I-01. This culvert drains from the pond, under the road and empties into a watercourse and small pool area, which flows east downhill into the Blind Brook. The southwest boundary of the watercourse, pool and Blind Brook is flagged with #'s G-01 to G-17. A small upland "island" area was flagged with #'s H-01 to H-20. The outlet flows to a relatively flat wooded area where the water pools into a shallow depression, which then drains southeast to the brook. This upland area is a mature mixed-deciduous forest with some understory dominated by American beech, red oak, black oak, and black birch. The wetland area is dominated by red maple, sensitive fern, spicebush, and phragmites grass. The pool is shallow and ephemeral. The soils were 10YR 3/1 with mottles. Water stained leaves and positive drainage patterns were other hydrological indicators present.

The northern boundary of the above outflow and the western boundary of the Blind Brook were flagged with #'s I-01 to I-124. This also includes watercourse systems that

flow into the Blind Brook located in the northeastern section described below. The area near Blind Brook is a mature forested area with little understory vegetation. Blind Brook is a large brook with steep slopes at the southern end and distinct edges with little to no floodplain areas. The floodplain areas present were relatively rocky in nature. Two dams were located. One near flag #I-12 which creates a large ponded area and another at the northern end near flag #K-30 which forms a smaller pond. The forest was dominated by American beech, red oak with some white oak represented and eastern hemlock. Understory species included Japanese barberry, spicebush, and multiflora rose. A small swale area is present which forms from a culvert under the northeastern parking lot but did not exhibit sufficient characteristics to be considered a wetland. Several watercourse channels flow into a wetland area located just south of the nursery. Here phragmites grass has been cut in an open area and closer to the parking lot; a shallow ephemeral depression wet area has formed near flag #99. Soils here were 10YR 3/2 with mottles and other indicators including buttressed trees, positive drainage patterns and surface flows. Red maple was the dominant tree species present. This area drains east to Blind Brook. One of the channels flows southeast from I-102 and another channel flows south from I-124. The eastern and northern boundary of this watercourse is marked with flag #'s J-01 to J-20. A third channel flows directly into Blind Brook from J-20. This last watercourse channel flows from a small wet meadow area then down slope to merge with another watercourse channel and then into Blind Brook. Flags J-20 and K-01 connect making this one continuous line with K-33 being the last flag on that line. The wet meadow area was open with woolgrass, sensitive fern, and tussock sedges. The soils exhibited histic epipedon features. The water pooled in some areas and multiflora rose was abundant in the uplands. This area in the northeast section is quite disturbed with extensive stock piles of soils from the former nursery operation and including straightening of the watercourse channels, and cutting of vegetation. Several invasive plant species have become established. The majority of these watercourse channels, like many of the others on the property, have been ditched and are essentially swales approaching the Blind Brook where they represent more natural conditions and typical watercourse features.

### **Wetland Functional Assessment**

A wetland functional assessment was performed on April 11, 2009 of the wetland and watercourse features present on the subject property. The wetland and watercourse features present would be considered a sloped riverine wetland with some depression areas where the topography flattens out and existing manmade ponds. The analysis was completed for all of the existing watercourses and wetland areas including Blind Brook. The data was summarized and an average score developed based upon evaluation of these particular wetland resources and are referred in the model as "wetland". The functional assessment was based on "A Rapid Procedure for Assessing Wetland Functional Capacity" by Magee and Hollands, 1998. This particular method is based on the Hydrogeomorphic Classification system (HGM) as developed by the Army Corps of Engineers. This model examines the functions and values of freshwater wetlands based upon biological characteristics, landscape position, geology, hydrology and vegetation present. The majority of the wetland system occurs on slopes

ranging from 1% to 3%. The various watercourse and wetland areas drain into Blind Brook. Several key attributes of this particular wetland/watercourse complex were evaluated according to this model and relate to specific wetland values and functions, including:

- o Modification of groundwater discharge
- o Modification of groundwater recharge
- o Storm and flood-water storage
- o Modification of stream flow
- o Modification of water quality
- o Export of detritus
- o Contribution to abundance and diversity of wetland vegetation
- o Contribution to abundance and diversity of wetland fauna

The above functions are evaluated based upon the existing site conditions that are present within the subject property. The data collected is used to evaluate the functional capacity of the existing wetland (rated from 0 to 1), and allows the investigator to make preliminary planning decisions on wetland functions and values as it related to future conditions and proposed changes. Functions are rated low to high with low levels 0 to 0.33, moderate levels from 0.34 to 0.66, and high levels from 0.67 to 1.0. Because this wetland system is classified as a riverine system, it possesses all of the functions with the exception of groundwater recharge and as a result, this function is not included in the assessment. Riverine wetlands typically do not provide groundwater recharge functions.

Each of the functions performed by the subject wetland is briefly described below. This discussion is based on the wetland assessment model scores achieved from collecting site-specific data on the wetland system. The wetland functional model scores have been summarized in the Table below.

- Modification of Groundwater Discharge

Riverine Wetlands typically possess a moderate potential for discharging groundwater (water intersecting the land surface). The subject wetland possesses discharge characteristics such as seasonal hillside seeps and springs where the groundwater emerges at the surface and is transmitted as surface flow to the perennial outlet (Blind Brook). The wetland model scores for this function are considered moderate to high.

- Modification of Groundwater Recharge

Consistent with the HGM model, this function is excluded from the analysis.

- Storm and Flood Water Storage

The majority of the wetland possesses moderate flood storage potential due to the perennial stream and the ability to move surface water flows rather quickly through this wetland system. Where the stream merges with the forested wetland area, the ability for storm and flood water storage increases slightly. The existing ponds also serve as storage areas for storm and flood water. The wetland model scores for this function are shown to be at moderate levels.

- Modification of Stream Flow

The perennial stream is well defined and discharges surface flows rather quickly through the system. The relatively steep banks of Blind Brook do not encourage retention of water within the property. The adjoining wetland areas discharge flows more gradually as a reflection of the relatively flat topography present and the combination of the existing ponds. This wetland system appears to have a moderate capacity to slow down the rate of stream flows from leaving the site. The wetland model scores were moderate for this function.

- Modification of Water Quality

Because the wetland has a well-defined inlet and outlet via the perennial stream (Blind Brook – where all of the other watercourse systems eventually drain into), and is a Riverine type wetland, it possesses a moderate potential for modifying water quality. By consistently releasing water from the system, the wetland does not retain high amount of sediments and other particulates that other HGM types (i.e., depressional wetlands, lacustrine fringe wetlands, flats) have the capability of retaining. However, the combination of a few fringe wetland areas allows water movement to move slowly and provides some settling of particulates and encourages contact between soil and vegetation. The existing ponds contribute to the storage of excess nutrients and detritus in the form of leaf matter. As a result, the wetland model scores were moderate for this function.

- Export of Detritus

The subject wetland system is classified as a riverine system that has a well-established and stable perennial stream corridor as part of the wetland. As a result, the system does have the capacity to export detritus materials through the system, but is moderated by the level topography when the stream merges with the forested riparian wetland and the existing ponds. The ability of this wetland to provide a source of energy for other off-site aquatic environments is moderate. The wetland model scores for this wetland function were moderate.

- Contribution to Abundance and Diversity of Wetland Vegetation

Plant species diversity and density are important factors for this function. The riverine, forested wetland possesses a fairly open tree canopy with low to moderate species diversity and a low density/moderate diversity of shrub and herbaceous plants. This is reflective of the relatively highly manicured areas adjacent to the watercourse systems. The wetland system provides this function to a moderate degree.

- Contribution to Abundance and Diversity of Wetland Fauna

The riverine wetland has a good number of plant species that are either Facultative (F) or Facultative Wetland (FACW) which have a wide range of soil moisture condition adaptability. Several landscaped areas have been created within the buffer areas and consist of a combination of native and non-native shrub species. The combination of a fringe riparian forested wetland complex adjacent to the watercourse help supports a moderate percentage of Facultative Wetland (FACW) and Obligate (OBL) wetland plants, which provide a better diversity of faunal habitat. The wetland model scores for this function reflect a moderate to high score.

Summary of Results:

<b>FUNCTIONAL MODEL SCORE SUMMARY TABLE</b>		
<b>WETLAND FUNCTION</b>	<b>RANGE</b>	<b>SITE-SPECIFIC MODEL SCORE</b>
Modification of Groundwater Discharge	2-15	13
Modification of Groundwater Recharge	4-21	N/A
Storm and Flood Water Storage	4-21	11
Modification of Stream Flow	1-9	6
Modification of Water Quality	3-15	11
Export of Detritus	4-15	9
Contribution to Abundance and Diversity of Wetland Vegetation	2-15	9
Contribution to Abundance and Diversity of Wetland Fauna	4-33	24

## Summary

The improvements proposed for this property will result in opportunities to restore and enhance the current functional elements provided by the watercourse systems that are present. Specific mitigation measures will be developed that will restore and enhance degraded watercourse buffers that will improve the ability of these systems to maintain current wetland functions and values. Restoration of buffer areas will provide a greater diversity of plant species and improve the ability of these systems to filter and store excess nutrients from developed areas of the property. In addition, restoration of buffer areas with native plantings, elimination of existing maintenance roads within the buffer to Blind Brook, and implementation of a well designed stormwater management program, will maintain existing hydrology and improve the existing wetland resources ability to moderate storm water flows to Blind Brook.

## References:

D.W.Magee and G.G.Hollands. 1998. A Rapid Procedure for Assessing Wetland Functional Capacity based on Hydrogeomorphic (HGM) Classification. Normandeau Associates and ENSR. 190 pg.

## **Proposed Site Plan Improvements and Potential Wetland/Watercourse Impacts and Mitigation Measures**

The proposed plans for the Pepsi site involve a series of planned improvements that include expansion of the existing corporate campus, parking areas and creation of a new welcome center for visitors. These improvements will be completed in two phases. The planned improvements will require one permanent stream crossing and other minor encroachments and temporary disturbances to regulated watercourse buffer areas on the property. The planned improvements will also provide an opportunity for significant restoration and enhancement of degraded watercourse buffer areas from adjacent former landscape operations and other maintenance activities that were recently acquired by the Pepsi organization.

The proposed disturbance to wetland areas represents 621 square feet, and to wetland buffer areas 58, 868 square feet, for a combined total of 59, 489 square feet of total disturbance to wetland regulated areas. The proposed mitigation for wetland and buffer areas includes a combination of specific enhancement and restoration measures to offset the proposed impacts to existing wetland resources. A total of 28,822 square feet of direct wetland enhancement is proposed, along with 94,880 square feet of wetland buffer restoration/enhancement measures, for a combined total of 123,702 square feet of wetland mitigation. The proposed wetland and buffer impacts will be effectively mitigated at a greater than 2:1 ratio.

## Impact Areas

Four (4) specific wetland regulated areas will be impacted by the proposed project. The first proposed impact will occur to the buffer to an existing wetland/watercourse that is located adjacent to the proposed welcome center, parking areas for the center, and new maintenance areas for the property. The buffer will be impacted slightly by new parking area and the construction of a boardwalk to provide access to the welcome center from the parking lot. This will include removal of an existing section of an existing maintenance road that is currently within the regulated buffer to Blind Brook as a result of moving existing property maintenance activities to areas outside of regulated buffer. The second proposed impact will require disturbance to an existing watercourse to provide access to the Calloway House section of the Pepsi campus. A new bridge crossing is proposed to provide access from the interior road. This will also require additional encroachments to utilize the existing interior road that is already located within the buffer. The third proposed impact will result in an expansion of an existing parking lot that which will require construction of a stormwater basin within the regulated buffer area. The fourth and final impact area will result from the proposed building expansion as part of Phase II. The four proposed impact areas and recommended mitigation measures are further described as follows:

### **Welcome Center/Parking and Maintenance Area** (former landscape debris and fill area, maintenance road)

This area consists of a watercourse with adjacent riparian wetland that extends to the existing parking lot. The buffer to this watercourse/wetland system on the north side has been filled in with significant stockpiles of fill materials. The southern side is relatively intact but shows signs of encroachment by invasive plant species and disturbance at the ground layer. In addition, other invasive plantings consisting of bamboo and phragmites grass, has become well established.

The mitigation strategy for this area is an actual restoration and enhancement of the existing wetland and wetland buffer. Construction of the parking lot and drainage improvements will require 621 square feet of direct wetland disturbance and an additional 28, 408 square feet of buffer disturbance from construction of the parking lot and the boardwalk. Mitigation will include removal of the existing soil stock piles, and re-grading to re-establish existing contours, removal and treatment of invasive plant species, re-shaping of the watercourse buffer area to more natural grades and an aggressive re-planting with native plants. A total of 10, 166 square feet of wetland enhancements are proposed and an additional 56,097 square feet of wetland buffer area will be restored.

The parking areas are designed to include bioremediation structures that will improve water quality and treatment prior to discharge into the existing adjacent wetlands. Pedestrian access in the form of a wooden boardwalk is also proposed as part of the restoration/enhancement efforts. The boardwalk will traverse the wetland and connect the welcome center and parking areas and will become part of the sustainable

educational outreach program by Pepsi. The boardwalk will result in temporary impacts during construction and will be elevated to minimize impacts within the buffer area. The boardwalk will provide opportunities for visitors to appreciate a natural restored wetlands area.

Suggested plantings will include suitable native plants that provide functional as well as aesthetic features to highlight the natural landscape and that is consistent with other areas of the property. The planting plan will create a layered effect consisting of plant zones consisting of emergent ground covers – flowering plants, grasses, sedges, ferns, shrubs and understory trees, and larger canopy trees. Please refer to the proposed Wetland and Wetland Buffer Mitigation Plans for details on the proposed enhancement and restoration measures that include proposed planting plans, plant lists and restoration details.

Restoration efforts will also include elimination of a section of the existing maintenance road currently location within the buffer to Blind Brook. The existing maintenance path will still be accessed from Anderson Hill Road but modified and re-located to provide access to the new proposed maintenance storage yard that is outside of regulated buffer areas. A new path will be created from the maintenance storage yard and re-connect to the existing maintenance path that joins the existing parking lot to the south. The relocation of the maintenance storage yard will eliminate impacts within regulated areas, and allow closing off a section of the existing maintenance path that is within the buffer to Blind Brook. Both ends of the existing path to be eliminated will be permanently blocked off to prevent any future access once the new maintenance path has been completed. The existing watercourse crossing on the southern end will be improved and new culverts added.

The existing path to be eliminated will be re-planted with several trees and shrubs to allow the area to revert back to existing forested condition. Trees to be planted will be spaced approximately 20 feet apart and shrubs will be planted in groups (5-7) and spaced in between the trees. Planting layout will be staggered to mimic the natural forested condition.

The existing drainage from the interior parking lot currently discharges directly into the wetland. The drainage from the parking lot will be retrofitted with a “vortex” type water quality structure to treat storm water and the existing pipe that discharges directly into the wetland will be relocated to a proposed storm water basin for further treatment. These drainage improvements will provide greater treatment of existing stormwater runoff, provide enhanced water quality treatment and serve to further reduce nutrient loading directly within the wetland.

A total of 10, 166 square feet of wetland enhancements will be completed and 56,097 square feet of wetland buffer area will be restored.

Consistency with Chapter 149-9. Standards for permit decisions.

The proposed mitigation measures for the Welcome Center/Parking and Maintenance Areas is consistent with the policy of the Town to preserve, protect and conserve freshwater wetlands and related benefits. Mitigation of proposed impacts to wetland and wetland buffer areas is at a ratio of greater than 2:1. The mitigation of the buffer areas from prior extensive site disturbance as a result of former landscaping operations will result in a significant enhancement and restoration of a degraded wetland system. Relocation of maintenance yard activities and a portion of the maintenance road out of the buffer areas will further eliminate any future degradation to wetland buffer areas. The extensive re-planting plans will restore the natural benefits provided by this wetland system.

The proposed restoration and enhancement measures are consistent with the land use regulations applicable in the Town of Harrison pursuant to Chapter 24-0903 of Article 24 of the State Environmental Conservation Law. The minor encroachment from the proposed parking areas for the welcome center presents a reasonable alternative and an unavoidable impact. The extensive restoration of degraded wetlands and their buffers, offset any unavoidable impacts, and is therefore, compatible with the public health and welfare. The restoration and enhancement measures combined with Pepsi's sustainable educational programs will provide opportunities to foster awareness and appreciation of the Town's freshwater wetlands and their value to the community.

### **Expansion of Interior Parking Lot encroachments within Buffer**

The interior parking lot will be expanded to maximize the number of available parking spaces and will therefore extend to the edge of the regulated buffer. Due to the increased parking spaces a stormwater management facility is proposed that will provide water quantity and water quality treatment of stormwater runoff. The stormwater basin is proposed within the regulated buffer and will require 9,449 square feet of disturbance. The stormwater basin will be planted with a combination of native wetland plants that will provide additional filtration and nutrient uptake. The overflow for the basin will connect to an existing pipe that daylights and enters the adjacent wetland.

The adjacent wetland area will be mitigated to offset the impacts from construction of a stormwater basin within the regulated buffer. Approximately 14,330 square feet of the existing wetland area will be enhanced by selective removal of invasive plant species within the wetland, and re-planting with native herbaceous ground covers and shrubs. In addition, 20,904 square feet of buffer area, representing approximately 50 feet of the surrounding buffer, will be enhanced and restored to provide greater functional value and habitat for the wetland area. This will include selective removal of invasive plant species and re-planting with a combination of native ground covers and shrub species.

The square footage of restoration and enhancement of the adjacent wetland and buffer area represents a greater than 3:1 ratio of the original disturbance created by the stormwater basin.

Consistency with Chapter 149-9. Standards for permit decisions.

The proposed mitigation measures for the Interior Parking Lot improvements is consistent with the policy of the Town to preserve, protect and conserve freshwater wetlands and related benefits. Mitigation of proposed impacts to wetland and wetland buffer areas is at a ratio of greater than 3:1. The enhancement and restoration of the adjacent wetland and buffer area will result in significant improvements to current wetland functions provided by this wetland. This wetland drains into the Blind Brook and the combination of the stormwater basin and wetland mitigation measures will minimize potential nutrients from entering into Blind Brook.

The proposed restoration and enhancement measures are consistent with the land use regulations applicable in the Town of Harrison pursuant to Chapter 24-0903 of Article 24 of the State Environmental Conservation Law. The encroachment from the proposed stormwater basin presents an unavoidable impact and due to the topography no reasonable alternative location is available for the placement of the basin. The disturbance within the buffer will be mitigated and the basin will provide the added benefit of additional water quality treatment from parking areas. Improvements to the existing adjacent wetland and buffer area will improve the value of the existing wetland resource, which is consistent with the public health and welfare and intent of Chapter 149.

#### **Calloway Watercourse Crossing and buffer impacts:**

A bridge is proposed to provide access from the interior road system to the Calloway property, which is an integral component of the Pepsi facility. The bridge will span an existing watercourse channel and merge with the existing road that is located within the 50-foot buffer to the watercourse. The proposed plan is to utilize the existing road that is located within the buffer area in an effort to minimize the amount of new buffer disturbance. The bridge will expand the entire length of the watercourse and create no direct wetland disturbance within the watercourse channel. Concrete footings will be installed on each side of the channel banks to anchor the bridge. The total width of the bridge will be 20 feet to accommodate vehicles and provide for pedestrian access. The width of the road located within the buffer will be expanded to 15 feet and paved. This will require additional disturbance of the existing road width and result in 19,975 square feet of buffer disturbance.

Mitigation is proposed to offset the disturbance within regulated areas as a result of the bridge construction and road improvements. The existing banks of the watercourse channel show evidence of streambank erosion within the area of the proposed bridge crossing. This section of the watercourse channel will be stabilized with a combination of strategic rock and boulder placement, and re-planting with native ground covers, and the addition of a shrub layer. Please refer to the buffer mitigation plans for further details. A total of 4,326 square feet of streambank stabilization and enhancement is proposed on both sides of the proposed bridge crossing.

Approximately 17, 879 square feet of the regulated buffer area to the watercourse will be mitigated. This will include re-planting of native ground covers, shrubs and trees and drainage improvements. Grass-lined swales will be created to provide pre-treatment of road runoff and will be directed to level spreaders to allow natural infiltration. A stormwater basin will be constructed to provide further containment and treatment from the increased impervious surfaces. The majority of the buffer area will be supplemented with plantings to minimize the impact of the bridge crossing. Additional screening will be added to the stormwater basin to minimize the visual impact from the Calloway property and road system.

Consistency with Chapter 149-9. Standards for permit decisions.

The proposed mitigation measures for the Calloway watercourse crossing represents the most reasonable alternative to minimize wetland impacts. The use of a bridge crossing is consistent with the policy of the Town to preserve, protect and conserve freshwater wetlands and related benefits. No wetland impacts will occur from construction of the bridge crossing. Impacts are restricted to buffer areas only.

Mitigation of proposed impacts to wetland buffer areas is at a ratio of greater than 1:1. The enhancement and restoration of the watercourse channel and associated buffer area will result in long-term improvements to the functions provided by the watercourse.

The proposed wetland crossing is consistent with the land use regulations applicable in the Town of Harrison pursuant to Chapter 24-0903 of Article 24 of the State Environmental Conservation Law. The unavoidable impacts have been minimized to the greatest extent practicable. Improvements to the existing watercourse and buffer area will improve the value of the existing wetland resource and result in no net loss of wetland functions.

### **Main Building Expansion and encroachment within wetland and wetland buffer**

As part of Phase II, a section of the main building expansion will encroach within an existing watercourse area. This will result in 472 square feet of direct disturbance to the watercourse and an additional 1, 036 square feet of regulated buffer disturbance. This watercourse is part of the watershed and watercourse system adjacent to the Calloway property. Due to the proximity of the Calloway improvements and mitigation measures, it is proposed to apply the mitigation of these minor encroachments as part of the Calloway mitigation measures discussed above.

Consistency with Chapter 149-9. Standards for permit decisions.

The proposed building encroachment is consistent with the land use regulations applicable in the Town of Harrison pursuant to Chapter 24-0903 of Article 24 of the State Environmental Conservation Law. The proposed building expansion will result in an unavoidable impact to existing wetland resources. Every effort has been made to minimize the amount of encroachment as a result of the building expansion. No reasonable alternatives are available to avoid impacts. The minor encroachments will

be effectively mitigated as part of the mitigation proposed for the Calloway crossing. Mitigation of proposed impacts to the watercourse and buffer is at a ratio of greater than 1:1. The enhancement and restoration of the watercourse channel and associated buffer area as part of the Calloway crossing will result in a net long-term improvement to the functions provided by the watercourse and offset the disturbance as a result of minor building expansion.

## **Summary**

The proposed plans will result in impacts to existing wetland resources that are present on the Pepsi property. Every effort has been made to examine reasonable alternatives to avoid and minimize impacts. A total of 59,489 square feet of wetland and buffer disturbance will result from the proposed plans. Extensive mitigation measures have been proposed to offset the potential impacts and will result in 123,702 square feet of mitigation to wetland and wetland buffer resources. The specific restoration and enhancement of previous disturbed wetland resources will improve the natural functions of the wetlands located on the Pepsi property and provide important water quality benefits to the adjacent Blind Brook. This completes my initial evaluation and assessment of the wetland resources, proposed project impacts and recommended mitigation measures. Please contact me if you have questions or require additional information.

Sincerely,

Stephen W. Coleman  
SWC/tbh