APPENDIX D
STORMWATER MANAGEMENT REPORT
AND POLLUTANT LOADING CALCULATIONS

STORMWATER MANAGEMENT REPORT
FOR 1000 TAYLORS LANE SUBDIVISION
VILLAGE OF MAMARONECK, NEW YORK
Rev. Date: November 4, 2010

Report Contents:

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1) Existing Site Conditions:

The 1000 Taylors Lane Subdivision property is 225,144 square feet (5.169 acres) in size and is located on the west side of Taylors Lane near Barrymore Lane. The property is adjacent to the Otter Creek Preserve, which lies to the west of the site. There is an existing house located near the center of the property. Access to the house from Taylor's Lane is obtained by a semi-circular driveway. The existing single family house features a typical residential landscape of lawn and ornamental shrubs in the front and rear yards. Much of the existing property is wooded.

Watercourses and Wetlands - New York State Freshwater Wetland J-2 lies to the west, and a fringe of the wetland extends into the property along the western property line, and in the extreme southern portion of the site.

The Village of Mamaroneck regulates wetlands that are greater than 2,500 square feet based on the presence of hydric soils, wetland hydrology and hydrophytic vegetation as defined in Chapter 192, "Freshwater Wetlands" in the Village Code. In addition to regulating the wetland, the Village also regulates a wetland adjacent area of 100 feet. The wetland and adjacent area comprise the "controlled area" that is regulated by the Village. The wetlands on the site encompass 41,225 square feet of the property. Thus, the wetlands on the property are regulated by the Village. The United States Army Corps of Engineers (ACOE) regulates wetlands that are associated with hydrologic features that are connected to interstate waters. The on-site wetland drains to the Long Island Sound and is therefore regulated by the ACOE. The ACOE does not regulate wetland buffers. The New York State Department of Environmental Conservation (DEC) regulates wetlands that are 12.4 acres

or greater, primarily based on the presence of hydrophytic vegetation, that are shown on, or are vegetatively connected to wetlands shown on, the New York State Freshwater Wetlands Maps. The on-site wetland is part of DEC Freshwater Wetland J-2 and is therefore regulated by the DEC. In addition to the wetland itself, the DEC also regulates a 100 foot adjacent area. The NYSDEC also regulates the tidal wetland associated with Otter Creek, as well as a tidal wetland buffer which extends to an elevation of 10 feet (North American Vertical Datum, 1988). At the time the subdivision would be developed, all of the disturbance would be located outside of the freshwater wetland buffer and tidal wetland buffer. No disturbance is proposed in the freshwater wetland or tidal wetland.

Soils - According to the Soils Survey of Putnam and Westchester Counties, the soils over the majority of the site consists of Charlton-Chatfield complex, rolling, very rocky soils. The on-site soils observed during the wetland delineation observed that the wetland soils consist mainly of very poorly drained Fluvaquents, frequently flooded. The soils in the uplands consist of well drained Charlton gravelly fine sandy loam. There are also some areas of road bank fill (Udorthents, smoothed) along Taylor's Lane. The upland soils are in hydrologic group B, which means, as described in the NRCS's publication TR-55, that they exhibit moderate infiltration rates when thoroughly wetted and consist chiefly of moderately deep to deep, moderately well to well drained soils with moderately fine to moderately coarse textures. According to the Soils Survey, these soils typically have a moderate rate of water transmission (0.15-0.30 in/hr).

Deep hole testing on Lot 1 showed that bedrock was located approximately 3 feet below grade. On Lot 3, deep holes were dug to 7 feet and did not encounter any bedrock. Percolation testing performed on the site showed percolation rates of approximately 4.33 min/inch on Lot 1 to 1.67 min/inch on Lot 3. To be conservative in the modeling, a rate of 4.33 min/inch was used for exfiltration in the HydroCAD modeling for Lot 1 and 5.0 min/inch for Lot 3.

2) Stormwater Management Design Criteria

To ensure that the project will have minimal impact on surface waters of the State, the stormwater management plan has been designed to capture and treat the Water Quality Volume (WQv) and provide peak rate attenuation for all storms from the 1 through 100 year storm event. The stormwater management plan for the property has been designed to meet the requirements of the Village of Mamaroneck. The Village requires that stormwater meet the DEC's Phase 2 Storm Water Pollution Prevention Plan ("SWPPP") regulations. In addition, treatment of 100% of the Water Quality Volume is required.

The water quality sizing calculations may be referenced in Appendix B of this report. The calculations for the peak rate attenuation may be referenced in Appendix C.

3) Stormwater Analysis

All runoff from the property is conveyed to Otter Creek located near the western property line of the site. The design point for the purposes of this analysis is located on Otter Creek just below Lot 1. Areas in the western portion of the property (corresponding to the 100-foot wetland buffer) will not be disturbed. As a result, the hydrologic characteristics of these areas will not change. In addition, the drainage areas that are immediately adjacent to the street, in both the existing and future conditions, XDA-1c and XDA-3b, as well as FDA-1c and FDA-3c were not modeled since they will not change with the eventual development of the properties.

Existing Condition Drainage Areas Modeled on Lot 1:

Existing Condition Drainage Area 1a (XDA-1a) is 14,460 s.f. in size and consists of the portion of the property that discharges to Design Line on Lot 1. Most of this drainage area is presently wooded. Runoff from this drainage area flows west to the design line.

Existing Condition Drainage Area 1b (XDA-1b) is 12,235 s.f. in size and consists of that portion of the property which discharges runoff to Design Point 1B. Most of this drainage area is also wooded. Runoff from this drainage area flows west to the design line.

Existing Condition Drainage Areas Modeled on Lot 3:

Existing Condition Drainage Area 3a (XDA-3a) is 19,495 s.f. in size and consists of that portion of the property which discharges runoff to the design line on Lot 3.

Future Condition Drainage Areas Modeled on Lot 1:

Future Condition Drainage Area 1a.1 (FDA-1a.1) is 19,125 s.f. in size and is to consist of the majority of the lands which would be impacted by new impervious surfaces. This drainage area includes the new house and driveway, as well as most of the front yard. All of the runoff from this drainage area will be treated and peak rate attenuation accomplished in a proposed rain garden in the rear yard of the property.

Future Condition Drainage Area 1a.2 (FDA-1a.2) is 3,405 s.f. in size and is to consist of the portion of the property which will contribute runoff to the design line on Lot 1, but not, due to topography, to the rain garden. This drainage area is mostly lawn, but includes a portion of the retaining wall in the rear yard.

Future Condition Drainage Area 1b (FDA-1b) is 4,255 s.f. in size and consists of lands to the south of the driveway which will contribute runoff to design line to the south of the property. This area will consist of both lawn and woods.

Future Condition Drainage Areas Modeled on Lot 3:

Future Condition Drainage Area 3a (FDA-3a) is 14,345 square feet in size and consists of the proposed house and driveway on Lot 3. Runoff from this drainage area will be conveyed from roof drain leaders and catch basins into subsurface pipes to a proposed infiltration facility to be located in the rear yard.

Future Condition Drainage Area 3b (FDA-3b) is 5,135 square feet in size and consists of the portion of the property which will contribute runoff to Design Point 3, but not, due to topography, to the storm drainage system that would convey runoff to the infiltration facility. This drainage area is mostly lawn, but includes some wooded areas and retaining walls on the site.

4) Stormwater Conveyance Facilities

Runoff from the new houses and driveways will be conveyed in subsurface storm pipes to the stormwater management facilities. The catch basins will be provided with 2-foot deep sumps to remove coarse sediment from the runoff. Storm drainage pipes will consist of 8-inch diameter corrugated polyethylene pipes.

5) Stormwater Quality Treatment Facilities

On Lot 1, a rain garden would be used to capture and treat the water quality volume and provide peak rate attenuation for all storm events, from the 1 through 100 year storms. The rain garden is designed so that the water quality volume will be entirely contained within the facility at a depth of 7 inches. For storm events which result in more runoff than the water quality volume, the runoff will exit the basin via an outlet control structure to consist of a 45-degree V-notch weir and rectangular weir in the retaining wall. The system has been designed so that the bottom of the rain garden is essentially at grade; therefore, it is anticipated based on deep hole testing that there will be about 3 feet of unsaturated soil from the bottom of the rain garden to the restrictive layer, which in this case is bedrock.

An infiltration facility would be used to capture and treat runoff and provide peak rate attenuation on Lot 3. It will consist of 18 Cultec 330XLHD chambers arranged in 3 rows of 6 chambers placed end to end. This recharger facility also has the capacity to capture and treat all of the runoff up to the 1 year storm event (i.e. there will be no runoff from the house and driveway exiting the rechargers during the 1 year storm). Deep hole testing indicated that there was no bedrock at least 7 feet below the existing grade in the location of the proposed rechargers.

6) Peak Rate Attenuation Analysis

The peak rate of runoff from the property to Otter Creek has been calculated in accordance with the methodology of the United States Department of Agriculture Soil Conservation Service (now Natural Resources Conservation Service) publication Urban Hydrology for Small Watersheds, Technical Release 55 (TR-55), 1986. To calculate the peak rate of runoff conveyed to the design lines from the both Lots 1 and 3, the following information was obtained or determined:

Drainage areas were defined based upon the future condition grading plans and existing topographical mapping of the property. Areas of the property that will not be changed from development (corresponding to the 100-foot wetland buffer) are *not* included in the hydrologic calculations since there will be no change in the volume or peak rate of runoff from these areas.

Curve numbers for each drainage area were determined in accordance with the methodology of TR-55. To determine the curve numbers, the on-site soils were delineated using the Soils Survey of Putnam and Westchester Counties (1996) and the hydrologic soil group was determined for each soil type.

Land cover types were delineated based upon an on-site review of the existing conditions and review of the site plans for the proposed conditions. Land cover types were superimposed over the soils mapping to determine the land area in each hydrologic group for curve number calculation purposes. Land cover types consist of open space and woods, as well as impervious surfaces, such as building rooftops and driveways.

Time of concentration was calculated for each drainage area in accordance with the methods of Chapter 3 of TR-55. A maximum reach length of 100 feet was used for sheet flow in accordance with TR-55 practice. A two-year 24 hour precipitation amount of 3.5" was used in the equation for sheet flow calculations. Travel time for shallow concentrated flow was computed using Figure 3-1 and Table 3-1 of TR-55. The flow paths that were utilized for the time of concentration calculations may be referenced on the drawings "Existing Condition Drainage Area Map" and "Future Condition Drainage Area Map".

The curve number and time of concentration for each of the drainage areas were calculated based on the methodology of TR-55. The worksheets for these calculations may be referenced in the attachments. Hydrographs were developed for the 1, 2, 10, 25 and 100 year storm recurrence intervals. Runoff depths for the 24 hour design storms used in the calculations were as follows: 2.8" for the one year storm, 3.5" for the two year storm, 5.0" for the ten year storm, 6.0" for the 25 year storm and 7.5" for the 100 year storm. A 24 hour rainfall duration was used in calculating the hydrographs. A Type III storm distribution was used in the analysis. Hydrographs and pond routings were created using the computer program HydroCAD (ver. 9.10), by HydroCAD Software Solutions, LLC.

The analysis shows that for all modeled storm events the peak rate of runoff conveyed to the design lines is less than or equal to the existing peak rate of runoff up to and including the 100 year storm.

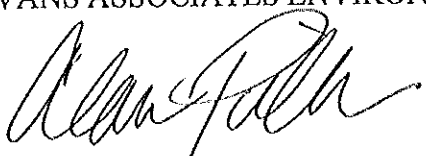
Table 1, Peak Rates of Runoff summarizes the peak rates of flow conveyed by the site in the existing and future conditions to the Design Line on Lot 1 and the Design Line on Lot 3 for the modeled storms.

Table 1. Peak Rates of Runoff to Design Points
(all flows in cubic feet per second)

Drainage Area/Storm Interval	1 year	2 year	10 year	25 year	100 year
Existing Condition Flows to Design Line on Lot 1	0.05	0.18	0.70	1.14	1.88
Future Condition Flows to the Design Line on Lot 1	0.03	0.09	0.33	0.81	1.74
Existing Condition Flows to Design Line on Lot 3	0.02	0.08	0.42	0.72	1.24
Future Condition Flows to the Design Line on Lot 3	0.02	0.06	0.19	0.50	1.12

Respectfully submitted,

EVANS ASSOCIATES ENVIRONMENTAL CONSULTING



Alan L. Pilch, P.E., R.L.A.
Senior Design Associate

Appendix A

Deep Hole and Percolation Test Results

TEST PIT DATA REQUIRED TO BE SUBMITTED WITH APPLICATION

DESCRIPTION OF SOILS ENCOUNTERED IN TEST HOLES

DEPTH	HOLE # 1 Lot 1	HOLE # 2 Lot 1	HOLE # 3 Lot 3	HOLE # 4 Lot 3
G.L.				
0'-6"	6" topsoil	6" topsoil	4" Sandy loam 10YR 4/4	4" Sandy loam 10YR 3/3
1'-0"	Sandy loam	Sandy loam	Sandy loam	Sandy loam
1'-6"	10YR 4/4	10YR 4/6	10YR 4/6	10YR 4/6
2'-0"				
2'-6"	Loamy sand	Loamy sand		
3'-0"	2.5Y 5/3	Refusal at 2'-8"	Boulders at 3 feet	Boulders at 3 feet
3'-6"	Refusal at 3 feet	on rock	to 3'-6"	to 3'-6"
4'-0"	on rock			
4'-6"			Sandy loam	Sandy loam
5'-0"			10YR 3/3	10YR 4/4
5'-6"				
6'-0"				
6'-6"				
7'-0"				

INDICATE LEVEL AT WHICH GROUND WATER IS ENCOUNTERED: **No groundwater encountered in any of the holes.**

INDICATE LEVEL FOR WHICH WATER LEVEL RISES AFTER BEING ENCOUNTERED: **N.A.**

TESTS MADE BY Alan L. Pilch, P.E. DATE 9/02/2009

DESIGN

Soil Rate Used: _____ Min/1" Drop:_____S.D. Usable Area Provided _____

No. of Bedrooms:_____Septic Tank Capacity:_____ Gals. Masonry___ Metal_____

Absorption Area Provided by _____ L.F. x 24" _____

Name _____Signature_____

Address_____ SEAL _____

_____

WESTCHESTER COUNTY DEPARTMENT OF HEALTH
145 Huguenot Street, 7th and 8th Floors
New Rochelle, New York 10801

DESIGN DATA SHEET - SEPARATE SEWER SYSTEM FILE NO. _____

Owner: Richard and Caroline Alter

Address: 1000 Taylors Lane

Located at (Street): Taylors Lane at Barrymore Lane

Section 105 Block 77 Lot 16 & 17

Municipality Village of Mamaroneck Watershed Mamaroneck Harbor/Long Island Sound

SOIL PERCOLATION TEST DATA REQUIRED TO BE SUBMITTED WITH APPLICATION

Lot 1: Presoak done on 12/07/2009 at 9:45 a.m. Percolation test hole 32" deep, 8" diameter. Percolation testing done on 12/08/2009.

Hole #	Clock Time				Percolation			
Hole Number	Run Number	Start	Stop	Elapse Time (min.)	Depth to Water from Ground Surface Start In.'s	Stop In.'s	Drop in Inches	Soil Rate (min/inch)
P-1	1	9:25 am	9:34 am	9	8"	11"	3"	3.00
	2	9:35	9:47	12	8"	11"	3"	4.00
	3	9:48	10:01	13	8"	11"	3"	4.33
	4	10:02	10:15	13	8"	11"	3"	4.33
	5							

Lot 3: Presoak done on 12/07/2009 at 9:05 a.m. Percolation test hole 32" deep, 8" diameter. Percolation testing done on 12/08/2009.

Hole #	Clock Time				Percolation			
Hole Number	Run Number	Start	Stop	Elapse Time (min.)	Depth to Water from Ground Surface Start In.'s	Stop In.'s	Drop in Inches	Soil Rate (min/inch)
P-2	1	8:35 am	8:37 am	2	10"	13"	3"	0.67
	2	8:37	8:41	4	10"	13.5"	3.5"	0.88
	3	8:42	8:45	3	10"	13"	3"	1.00
	4	8:46	8:50	4	11"	14"	3"	1.33
	5							

Lot 3: Additional percolation testing performed on 12/08/2009.

Hole #	Clock Time				Percolation			
Hole Number	Run Number	Start	Stop	Elapse Time (min.)	Depth to Water from Ground Surface Start In.'s Stop In.'s		Drop in Inches	Soil Rate (min/inch)
P-2	1	10:40 am	10:42 am	2	8"	11"	3"	0.67
	2	10:43	10:46	3	8"	11"	3"	1.00
	3	10:47	10:50	3	7"	10"	3"	1.00
	4	10:51	10:56	5	8"	11"	3"	1.67
	5							

Notes:

1. Tests to be repeated at same depth until approximately equal soil rates are obtained at each percolation text hole. All data to be submitted for review.
2. Depth measurements to be made from top of hole.

TESTS MADE BY Alan L. Pilch, P.E.

DATE 12/07/2009 to 12/08/2009

Name Alan L. Pilch, P.E.

Signature

Address 205 Amity Road
Bethany, CT 06524

SEAL

Appendix B

Water Quality Volume Calculations

Table B-1
1000 Taylors Lane Subdivision - Future Condition Drainage Areas

Lot 1:

Future Condition **FDA-1a.1 to design line**	Area (sq feet)	Area (acres)	Cover Type Condition	HSG	Curve Number
Impervious area	5,550	0.127	n.a.	n.a.	98
Woods	1,650	0.038	good	B	55
Lawn/Landscape area	11,925	0.274	good	B	61
Total	19,125	0.439		Weighted CN =	71

Lot 3:

Future Condition **FDA-3a to design line**	Area (sq feet)	Area (acres)	Cover Type Condition	HSG	Curve Number
Impervious area	5,745	0.132	n.a.	B	98
Lawn/Landscape area	8,600	0.197	good	B	61
Total	14,345	0.329		Weighted CN =	76

Notes:
HSG = Hydrologic Soils Group

Table B-2
1000 Taylors Lane Subdivision - Water Quality Volume (WQv) Calculation

These calculations quantify the volume of runoff from the existing and developed site for the Water Quality Volume (WQv) (precipitation depth = 1.3 inches). According to the New York State *Stormwater Management Design Manual*, the Water Quality Volume is calculated as follows:

Water Quality Volume, WQv = (P x Rv x A) / 12
WQv = water quality volume, in acre feet
P = 1.3 inches according to Fig. 4.1, New York State Stormwater Management Design Manual
Rv = 0.05 + 0.009 x (I), where I is percent impervious cover
A = site area in acres

Runoff Depth Calculation for Water Quality Volume
Precipitation Depth, P = 1.3 inches

FDA-1a.1

Land Cover Type	Area (sq feet)	Area (acres)
Impervious area	5,550	0.127
Woods	1,650	0.038
Lawn/Landscape area	11,925	0.274
Total	19,125	0.439

WQv Calculation	Parameter	Units	Remarks
% impervious =	29.0	%	as calculated
Rv calculation =	0.311	n.a.	equals 0.05+0.009 x % impervious
WQv =	0.015	acre-feet	as per Design Manual
WQv =	645	cubic feet	convert to cubic feet
Captured in SWMB =	325	cubic feet	bottom of rain garden to V-notch invert
Infiltration storage =	1552	cubic feet	infiltration into rain garden bed over 24 hr

FDA-3a

Land Cover Type	Area (sq feet)	Area (acres)
Impervious area	5,745	0.132
Lawn/Landscape area	8,600	0.197
Total	14,345	0.329

WQv Calculation	Parameter	Units	Remarks
% impervious =	40.0	%	as calculated
Rv calculation =	0.410		equals 0.05+0.009 x % impervious
WQv =	0.015	acre-feet	as per Design Manual
WQv =	638	cubic feet	convert to cubic feet
Captured in SWMB =	914	cubic feet	storage in rechargers to pipe outlet invert
Infiltration storage =	793	cubic feet	infiltration into bed of rechargers over 24 hr

Table B-3
1000 Taylors Lane Subdivision - Rain Garden Storage

RAIN GARDEN ON LOT 1

Elevation *feet*	Area *s.f.*	Incremental Volume *c.f.*	Volume Sum *cu. ft.*	Volume Sum *acre-feet*
15.40	1195	0	0	0
15.50	1290	124	124	0.0029
15.65	1380	200	325	0.0074
16.00	1585	519	843	0.0194
16.50	1890	869	1,712	0.0393

Table B-4 - 1000 Taylors Lane Subdivision
Calculation of Soil Infiltration Rate on Lot 1

Soil percolation test consists of digging a cylindrical hole with a diameter of approximately 8 inches, about 30 inches deep and observing the time it takes for water poured into the hole to drop a distance of 3 inches. When this is done, it is possible to calculate the soil percolation rate in cubic feet per square feet per minute.

Percolation hole diameter =	8	inches
Depth of percolation hole =	30	inches
Side Surface area =	5.236	square feet
Bottom surface area =	0.349	square feet
Area of percolation =	5.585	square feet

Use a soil percolation rate of:

4.33 minutes per inch based on actual percolation testing

For a one inch drop in the water level, the volume that percolates into the soil is:

0.0291 cubic feet

The Soil Percolation Rate (Sr) is the volume that percolates into the soil, divided by the surface area to which the water percolates, divided by the time in minutes.

Volume of percolation =	0.0291	cubic feet
Surface area of percolation =	5.585	square feet
Time =	4.33	minutes
Sr =	0.00120	cu feet / sq feet / minute

Less 25% for soil clogging factor

Soil Percolation Rate, Sr = 0.00090 cu feet / sq feet / minute

Bed area of rain garden is:

Bed area = 1195 square feet (as per site plan)

Infiltration volume through the bed (bottom) of the proposed facility is the bed area/Sr per unit time:

Infiltration volume = 1.0781 cubic feet/minute

Convert cubic feet per minute to cubic feet per hour by multiplying by 60 min/hr to obtain the infiltration volume per hour:

Infiltration volume = 64.7 cubic feet/hour

Infiltration volume = 1552 cubic feet/day

Infiltration Rate is the depth of runoff that infiltrates into the soil. It is equal to the infiltration volume/bed area:

Infiltration Rate into Soil = 0.0541 feet/hour

Convert to depth in inches per hour by multiplying depth by 12 in/ft and use this number as "Volume" in HydroCAD:

Infiltration Rate into Soil = 0.650 inches/hour (VALUE WAS USED IN MODELING)

Table B-5 - 1000 Taylors Lane Subdivision
Calculation of Soil Infiltration Rate on Lot 3

Soil percolation test consists of digging a cylindrical hole with a diameter of approximately 8 inches, about 30 inches deep and observing the time it takes for water poured into the hole to drop a distance of 3 inches. When this is done, it is possible to calculate the soil percolation rate in cubic feet per square feet per minute.

Percolation hole diameter =	8 inches
Depth of percolation hole =	30 inches
Side Surface area =	5.236 square feet
Bottom surface area =	0.349 square feet
Area of percolation =	5.585 square feet

Use a soil percolation rate of:

1.67 minutes per inch based on actual percolation testing

For a one inch drop in the water level, the volume that percolates into the soil is:

0.0291 cubic feet

The Soil Percolation Rate (Sr) is the volume that percolates into the soil, divided by the surface area to which the water percolates, divided by the time in minutes.

Volume of percolation =	0.0291 cubic feet
Surface area of percolation =	5.585 square feet
Time =	1.67 minutes
Sr =	0.00312 cu feet / sq feet / minute

Less 25% for soil clogging factor

Soil Percolation Rate, Sr = 0.00234 cu feet / sq feet / minute

Bed area of rain garden is:

Bed area = 720 square feet (as per site plan)

Infiltration volume through the bed (bottom) of the proposed facility is the bed area/Sr per unit time:

Infiltration volume = 1.6841 cubic feet/minute

Convert cubic feet per minute to cubic feet per hour by multiplying by 60 min/hr to obtain the infiltration volume per hour:

Infiltration volume = 101.0 cubic feet/hour

Infiltration volume = 2425.1 cubic feet/day

Infiltration Rate is the depth of runoff that infiltrates into the soil. It is equal to the infiltration volume/bed area:

Infiltration Rate into Soil = 0.1403 feet/hour

Convert to depth in inches per hour by multiplying depth by 12 in/ft and use this number as "Volume" in HydroCAD:

Infiltration Rate into Soil = 1.684 inches/hour

Note:

To be conservative, a value of 5.0 minutes per inch, which is equivalent to 0.563 inches per hour was used in modeling exfiltration on Lot 3.

Appendix C

Hydrographs and Stormwater Management Facilities Routings (available on CD)

Table Y
Future Condition Pollutant Loading Calculation

Simple Method Equation:

$L = [P \times Pj \times Rv/12] \times C \times A \times 2.72$

where,

L = storm pollutant export in lbs/year
P = rainfall depth in inches over time period
Pj = factor that corrects P for storms that produce no runoff
Rv = runoff coefficient
C = flow weighted mean concentration of pollutant in urban runoff (mg/l)
A = area of site in acres
12, 2.72 conversion factors

Enter the following to calculate L:

Given:					Remarks:
Precipitation, P =	45	inches			annual precipitation depth
Pj =	0.9				as per Simple Method
TOTAL NITROGEN:					
C =	2.2	mg/l			as per Stormwater Manager Resource Center
	LOT 1	*LOT 2*	*LOT 3*		
Impervious surfaces	5,795	9,961	5,860	s.f.	from site plan
Lawn/Landscape/Woods	101,185	42,089	60,255	s.f.	from site plan
TOTAL	106,980	52,050	66,115	s.f.	sum
Area in acres, A =	2.46	1.19	1.52		area in s.f. / 43560
Impervious area in acres =	0.13	0.23	0.13		area in s.f. / 43560
Percentage impervious =	5.42	19.14	8.86		impervious / area in acres * 100
Rv =	0.10	0.22	0.13		as per equation
Pollutant load prior to treatment =	4.90	5.36	3.98	lbs/year	as per formula above
Pollutant Removal Rate =	38	50	50	%	as per Table A.4, 2001 NYS SMDM
Pollutant Export, L =	3.04	2.68	1.99	lbs/year	calculated
TOTAL POLLUTANT EXPORT =	7.71	lbs/year			sum
TOTAL PHOSPHORUS:					
C =	0.4	mg/l			as per Stormwater Manager Resource Center
	LOT 1	*LOT 2*	*LOT 3*		
Pollutant load prior to treatment =	0.89	0.98	0.72	lbs/year	as per formula above
Pollutant Removal Rate =	59	70	70	%	as per Table A.4, 2001 NYS SMDM
Pollutant Export, L =	0.37	0.29	0.22	lbs/year	calculated
TOTAL POLLUTANT EXPORT =	0.87	lbs/year			sum

Table X
Existing Condition Pollutant Loading Calculation

Simple Method Equation:

$L = [P \times Pj \times Rv/12] \times C \times A \times 2.72$

where,

L = storm pollutant export in lbs/year
P = rainfall depth in inches over time period
Pj = factor that corrects P for storms that produce no runoff
Rv = runoff coefficient
C = flow weighted mean concentration of pollutant in urban runoff (mg/l)
A = area of site in acres
12, 2.72 conversion factors

Enter the following to calculate L:

Given:

		Remarks:
Precipitation, P =	45 inches	annual precipitation depth
Pj =	0.9	as per Simple Method

TOTAL NITROGEN:

		Remarks:
C =	2.2 mg/l	as per Stormwater Manager Resource Center

	LOT 1	LOT 2	LOT 3		Remarks:
Impervious surfaces	0	9,961	0	s.f.	from site plan
Lawn/Landscape/Woods	106,980	42,089	66,115	s.f.	from site plan
TOTAL	106,980	52,050	66,115	s.f.	sum
Area in acres, A =	2.46	1.19	1.52		area in s.f. / 43560
Impervious area in acres =	0.00	0.23	0.00		area in s.f. / 43560
Percentage impervious =	0.00	19.14	0.00		impervious / area in acres * 100
Rv =	0.20	0.22	0.20		as per equation
Pollutant load prior to treatment =	9.92	5.36	6.13	lbs/year	as per formula above
Pollutant Removal Rate =		38		%	as per Table A.4, 2001 NYS SMDM
Pollutant Export, L =	9.92	3.33	6.13	lbs/year	calculated
TOTAL POLLUTANT EXPORT =	19.38 lbs/year				sum

TOTAL PHOSPHORUS:

		Remarks:
C =	0.4 mg/l	as per Stormwater Manager Resource Center

	LOT 1	LOT 2	LOT 3		Remarks:
Pollutant load prior to treatment =	1.80	0.98	1.11	lbs/year	
Pollutant Removal Rate =	0	59		%	as per Table A.4, 2001 NYS SMDM
Pollutant Export, L =	1.80	0.40	1.11	lbs/year	
TOTAL POLLUTANT EXPORT =	3.32 lbs/year				