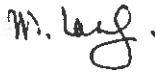


## TOWN OF LANSING PLANNING MEMORANDUM

**TO:** Lansing Planning Board Members

**FROM:** Michael H. Long, AICP – Planning Consultant 

**RE:** John Young – East Circle Drive – 4 lot “Minor Subdivision”

**DATE:** December 5, 2017

### **Project Overview:**

The Planning Board is being requested by owner John Young approve a “Minor 4 lot subdivision for East Shore Circle Tax Map N. 37.-7-12.2 which included a total of 1.722 +/- acres. John Andersson has prepared the application materials including the SWPPP analysis which shows the disturbance will be under the 1 acre threshold. Mr. Young has previously subdivided 2 other parcels for houses to be built several years ago from the overall parcel. This will continue the same development pattern as originally anticipated.

The subdivision map was prepared by T.G. Miller and includes 3 additional new parcels: Lot 1 – 1.05 acres with 160 feet of road frontage, Lot 2 – 1.05 acres with 160 feet of road frontage and Lot 3 of 1.25 acres with 191.75 feet of road frontage. The minimum area is 20,000 square feet and 150 feet of road frontage requirements comply with the current Land Use Ordinance for the R2- Moderate Density Residential. They have reserved a 60 foot R.O.W. for future access from East Shore Circle to the balance of the parcel which also has extensive frontage along East Shore Drive (NYS Rt. 34). The proposal will create a remaining parent parcel of approximately 22.91 +/- acres and 3 additional new house lots for single family houses to build. This action is also exemption from the Section 239 Review of Tompkins County.

### **Staff Recommendation:**

The staff recommends the Planning Board at the December 11, 2017 meeting to classify this action as a “Minor Subdivision” and to schedule a “Public Hearing” for a meeting in January and further the staff recommends at the January meeting the approval the SEQRA Negative Declaration and also approval this as a “Final Plat”. There is not any infrastructure improvements needed to facilitate future development of these 3 additional parcels.

**Town Of Lansing Planning Board**  
**Application for Review and Approval of Subdivision**


Check One:  Subdivision Plat      Fee Paid \$ \_\_\_\_\_ Date \_\_\_\_\_  
 Boundary Change      Receipt No. \_\_\_\_\_

1. Name or Identifying Title East Shore Circle

2. Tax Parcel No. 503289-37.1-7-12.2      Zoning District R-2

3. Subdivider: (if owner, so state: if agent or other type of relationship,  
state details on separate sheet)

Name & Title Owner John Young et al.

Signature       Date 12/4/2017

Address 410 Triphammer Road, Ithaca, NY 14850

Phone 607 257-6533      Fax \_\_\_\_\_      E-Mail jack@youngbros.com

Other Contact information \_\_\_\_\_

4. Licensed Land Surveyor:

Name: Lee Dresser, TG Miller, PC

Address 203 North Aurora St, Ithaca, NY 14850

Phone 607 272-6477      Fax \_\_\_\_\_      E-Mail \_\_\_\_\_

Other Contact information \_\_\_\_\_

5. Engineer:

Name: John M. Andersson, PE

Address 1 Woodland Road, Ithaca, NY 14850

Phone 607 539-7096      Fax \_\_\_\_\_      E-Mail j.anderssonpe@yahoo.com

Other Contact information cell 607 229-6100

6. Easements or other restrictions on property: (Describe generally)  
none known

7. Names of abutting owners and owners directly across adjoining streets, including those  
in other towns ( Available at Tompkins County Assessor's Office. Attach  
additional sheets if necessary)

Lucas, 33 East Shore Circle      Lama, 27, 29, or 31 East Shore Circle

An, 83 East Shore Circle      and more

Croft, 66 East Shore Circle

89 East Shore Circle

97 East Shore Circle

115 East Shore Circle

1818 East Shore Drive

8. Requested exceptions: The planning Board is hereby requested to authorize the  
following exceptions to or waivers of its regulations governing subdivisions  
(attach list of exceptions with the reason for each exception set forth):

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\* Note: Application, Fee and required documents must be received in the Code  
Enforcement Office 14 days prior to the scheduled Planning Board meeting.



# Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO  
Governor

ROSE HARVEY  
Commissioner

November 07, 2017

Mr. John Andersson  
Consulting Engineer  
Andersson Engineering  
1 Woodland Road  
Ithaca, NY 14850

Re: DEC  
East Shore Circle 4 Lot Subdivision  
East Shore Circle at Teeter Road, Lansing, NY  
17PR07585

Dear Mr. Andersson:

Thank you for requesting the comments of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the project in accordance with the New York State Historic Preservation Act of 1980 (Section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the OPRHP and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8) and its implementing regulations (6 NYCRR Part 617).

Based upon this review, it is the New York State Office of Parks, Recreation and Historic Preservation's opinion that your project will have no impact on archaeological and/or historic resources listed in or eligible for the New York State and National Registers of Historic Places.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Michael F. Lynch, P.E., AIA  
Director, Division for Historic Preservation

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Division for Historic Preservation

P.O. Box 189, Waterford, New York 12188-0189 • (518) 237-8643 • [www.nysparks.com](http://www.nysparks.com)



**FULL STORMWATER POLLUTION PREVENTION PLAN (SWPPP)**  
construction activities and post-construction operations  
at EAST SHORE CIRCLE 4-LOT SUBDIVISION  
East Shore Circle, Town of Lansing, County of Tompkins  
Part of Tax Parcel 503289- 37.1.-7-12.2



USGS Location Approx. 42.5202; -76.5046

*Prepared for:*  
JOHN YOUNG, ET AL.  
410 Triphammer Road  
Ithaca, NY 14850  
(607) 257-6533  
jack@youngbros.com

JOHN M. ANDERSSON, P.E.  
Consulting Environmental Engineer  
1 Woodland Road  
Ithaca, NY 14850  
Office 607-539-7096  
Cell 607-229-6100  
j.anderssonpe@yahoo.com

**VOLUME 1 of 3: Narrative**

**December 1, 2017**



A copy of this SWPPP shall be retained at the site of the East Shore Circle Subdivision:

- For control of pollution from construction activities: from the date of initiation of construction activities to the date of final stabilization, and
- For control of storm water run-off quantity and quality: as long as the property is occupied as described.

The SWPPP must be kept current and amended whenever conditions on the site change or if the plan is ineffective in minimizing pollutant removal. Contact the Town of Lansing Stormwater Management Officer for approval of amendments.

See Vol 2 for Forms and Background  
See Vol 3 for Calculations

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## **INTRODUCTION**

### **PROJECT INFORMATION**

#### **Project Name and Location:**

East Shore Circle 4-Lot Subdivision  
Tax Parcel 503289- 37.1.-7-12.2 Town of Lansing, Tompkins County  
Located on the south side of East Shore Circle, east of Teeter Road

See the COVER of this document for a location map and USGS coordinates.

#### **Owner and General Contractor's Name and Address:**

Owner and developer	Contractor
JOHN YOUNG, ET AL.	TBD
410 Triphammer Road	
Ithaca, NY 14850	
(607) 257-6533	
jack@youngbros.com	

### **PROJECT DESCRIPTION; Purpose and Extent of Proposed Development**

The owners of this property propose to create three residential building lots fronting on the south side of East Shore Circle. Each lot will be at least one acre, exceeding the minimum R-2 zoning requirement of 20,000 square feet and the Tompkins County Health Department (TCHD) minimum of 0.5 acre. The arable portion of the remaining lot of approximately 23 acres will continue to be farmed.

Municipal water will be supplied to each lot independently from the existing 8" water main located along the north side of East Shore Drive.

Sewage treatment will be provided by an individual on-site wastewater treatment system (OWTS) on each site in compliance with the TCHD's requirements.

No new municipally owned infrastructure is proposed. Each lot will have a driveway directly from the existing East Shore Circle. Stormwater treatment and detention facilities will be constructed on each lot for that lot only.

Applications for realty subdivision and SWPPP approvals are being made to the Town of Lansing. Because less than five lots (each less than 5 acres) are being created (within three years), this is not a subdivision requiring approval from the Tompkins County Health Department.

The owners created and sold two lots from this parcel in 2013. #47 East Shore Circle has been developed and the house on #51 is under construction. These lots are treated as existing construction in terms of the proposed subdivision and storm water treatment.

This SWPPP is prepared to manage stormwater and control erosion and sediment at the East Shore Circle subdivision in compliance with the Town of Lansing Local Law No. 6 of 2009 and the New York State SPDES General Permit for Construction Activities Permit No GP-0-15-002. The law requires that the land development activity shall not cause an increase in turbidity that will

result in substantial visible contrast to natural conditions in surface waters of the state of New York; no increase in suspended, colloidal, and settleable solids that will cause deposition or impair the waters for their best usages; and no residue from oil and floating substances, visible oil film, or globules of grease. Controls will be put into place during construction so that any discharges from the site can meet these criteria.

In addition, the Law and the SPDES Permit require that post-construction hydrology be controlled to mimic pre-construction, and that run-off be treated to preserve water quality.

## SITE DESCRIPTION

- Location: Town of Lansing, the south side of East Shore Circle, east of Teeter Road.
- Property Size: The tax parcel has about 13 acres with 1000' of frontage north of East Shore Circle and about 13 acres with 570' of frontage south of East Shore Circle. No development is planned north of East Shore Circle. The three residential lots will be at least one acre each with 160' or more of frontage, leaving 60' frontage for the remaining ten acres. The remaining ten acres also has more than 700' of frontage along East Shore Drive.
- Current use: All the land south of East Shore Circle is currently cropped, as is several acres north of East Shore Circle. The northern boundary of the whole parcel includes part of UNA-63, (Shurger Glen), including Gulf Creek and its steep, wooded slopes.
- Near-by land use: The developed parcels along East Shore Circle and Teeter Road are single-family residential. The remaining land is mostly agricultural.
- Utilities (water): The entire parcel is included in the Lansing Consolidated Water District. All water is produced at the Bolton Point Water Plant operated by the Southern Cayuga Lake Intermunicipal Water Commission (SCLIWC). An 8" diameter water main exists along the north side of East Shore Circle; it's pressure is supplied by the Burdick Hill Tanks (overflow elevation 1008'; normal low elevation 993'). The ground elevation of the development area varies from 840 to 850, providing adequate static water pressure of at least 143' (62 psi). Normal pressure in the main reported by Bolton Point staff is about 70 psi.
- Utilities (sewer): Municipal sewer is not available, and all neighboring properties are served by on-site individual sewage systems (OWTS). The on-site soil is not suitable for conventional absorption systems due to shallow permeable soils and shallow seasonal water. A septic tank followed by a raised system, possibly a sand filter and downstream modified absorption trenches (DMAT) might be acceptable. A pump may be needed unless significant fill is placed around the buildings.
- Utilities (other): The area is served by underground electric and cable service. Natural gas may exist, but no new services are being allowed.
- Slope: most of the parcel slopes gently, less than 3%, to drainage off site.
- Zoning: the entire property is zoned R2, Residential Moderate Density. Single-family and two-family dwellings are among the permitted uses.
- Access: All the lots will have direct access to East Shore Circle.



## ENVIRONMENTAL AND HISTORIC PRESERVATION

### IMPACT ON SENSITIVE ENVIRONMENTAL FEATURES

The property is in an agricultural district, and portions are farmed. This development will remove 3 acres from active farming.

There are no federal or state wetlands, flood zones or classified streams on the property south of East Shore Circle. The frontage of the proposed lots drains to the East Shore Circle road ditch, but most of the lot's area drains to the rear and through lot 4 to a 0.9 acre constructed pond on neighboring property. The pond is identified as a potential wetland on the National Wetlands Inventory. All the drainage from the site winds up at Culvert 1E under East Shore Drive west of The Rink. This watercourse continues south for 500' to become stream Ont66-12-P296-62 just north of Waterwagon Road. The stream flows to Cayuga Lake and is classified C.

The northern portion of the area north of East Shore Circle contains a portion of UA-64, Shurger Glen, and classified stream Gulf Creek. The creation of lots on the area south of East Shore Circle will have no impact on these resources.

A Short Environmental Assessment Form has been prepared to aid in the review. A search of the NYS DEC Remediation Database revealed no sites on or near this property.

### IMPACT on STATE or NAT'L HISTORIC PLACES and ARCHEO-SENSITIVE AREAS

A search of the online GIS resources at <http://nysparks.state.ny.us/shpo/on-line-tools/> identified no listed historic buildings or Archeo-Sensitive Areas in the vicinity. See the attached downloaded map.

The New York State Office of Parks, Recreation and Historic Preservation was queried and responded on November 7, 2017: "Based upon this review, it is the New York State Office of Parks, Recreation and Historic Preservation's opinion that your project will have no impact on archaeological and/or historic resources listed in or eligible for the New York State and National Registers of Historic Places."

## METHODOLOGY

The design process for this SWPPP is based on the New York State Stormwater Management Design Manual, especially Chapter 8: Stormwater Design Examples. The pre- and post-construction site conditions were used to determine the pre- and post-construction water flow rates and volumes. These were in turn used to determine how to manage the quality and quantity of the stormwater runoff to comply with the requirements to obtain coverage under the SPDES Permit for Construction Activities.

## REFERENCES

- Town of Lansing Local Law No. 6 of 2009
- SPDES General Permit for Construction Activities Permit No GP-0-15-002
- New York State Stormwater Management Design Manual (2015)
- New York State Standards and Specifications for Erosion and Sediment Control (2016)

## POST-CONSTRUCTION STORMWATER MANAGEMENT

### PRE- AND POST-CONSTRUCTION LAND COVER, SOILS AND HYDROLOGY

- Design Point(s): The Design Point DP1 is where most of the parcel drains off-site, at the southern boundary. This watershed, labelled "South Drainage Area", is 10.3 acres. The Design Point DP2 is in the East Shore Circle ditch just west of the proposed lots. It is labelled "North Drainage Area" and is 4.7 acres (4.8 acres post-construction).

- Pre- and Post-Construction land cover (acres):

land cover, acres	Pre-South	Post-South	Pre-North	Post-North
Open space (mowed lawn)	0.02	2.3	2.0	2.8
Impermeable Road	0.2	0.2	0.4	0.4
Impermeable roof, drive, parking	0	0.28	0.4	0.5
Meadow	10.08	7.52	1.8	1.1
Total	10.3	10.3	4.6	4.8*

\*A small area along the edge of the Pre-area is brought into the Post-area due to grading along the property boundary.

- Soils: the USGS Web Soil Survey identifies Ovid silt loam (OaA) on the area to be developed:

Type	Description	Hydric	HSG	Slope	DPS	HGW
OaA	Ovid silt loam, typical profile: 0-14" silt loam; 14-24" silty clay loam; 24-60" gravelly loam. More than 80" to restriction. Somewhat poorly drained.	No	C/D	0-6 %	14"	6-18"

HSG = Hydrologic Soil Group

DPS = Depth of Permeable Soil

HGW =Depth to Seasonal High Ground Water

Soil profile and percolation holes will be observed when OWTS permits are applied for.

### PRE- AND POST-CONSTRUCTION STORM WATER DRAINAGE AND FLOWS

- Pre-construction Drainage: The "South Drainage Area" drains generally west from East Shore Drive (NYS Rt 34) through the cultivated field, then south through the 1-acre pond and to the Rt348 highway ditch, then west to the culvert (1E) under Rt 34. This culvert conveys water south to stream Ont66-12-P296-62, near Waterwagon Road, that flows to Cayuga Lake. The stream is classified C. The point just before the pond at the south border of the property is the Design Point 1 (DP1). The "North Drainage Area" is adjacent to and north of the "South DA", beginning just west of Rt 34, through a portion of the meadow, then through an existing lot to the road ditch along East Shore Circle. The road ditch continues west and south to a watercourse (not a stream) that flows east to the same culvert noted for the North DA. A point in the ditch just west of the development area is the Design Point 2 (DP2). Win TR-55 was used to model the Pre-Construction discharge at both DP1 and DP2.
- Post-construction Drainage: The drainage areas change only slightly due to grading around the proposed homes and along the property boundary.

The WinTR-55 program was used to determine pre- and post-construction runoff peak discharges and runoff volumes to determine the changes (with no controls). The following 24-hour precipitation table was used in the model:

**Table I. Extreme Precipitation Table (provided by Northeast Regional Climate Center, [www.precip.eas.cornell.edu](http://www.precip.eas.cornell.edu))**  
**Rainfall Depth (inches) by Rainfall Return Period (November, 2017)**

1-Yr	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr
1.99	2.33	2.89	3.40	4.21	4.96	5.84

**DP1 Pre- and Post-Construction Storm Water Runoff calculation results from TR-55:**

Design Point	Acres	Impervious		CN	*Peak Flow, cfs			*Runoff, acre-ft		
		Acre	%		1-yr	10-yr	100-yr	1-yr	10-yr	100-yr
DP1-pre	10.3	0.2	1.9	71	1.26	7.05	21.36	0.22	0.86	2.37
DP1-post	10.3	0.48	4.7	73	1.71	8.05	22.91	0.27	0.95	2.53
Change	0.	+0.28	NA	+2	+0.45	+1.0	+1.55	+0.05	+0.09	+0.15
% change	0	+140	NA	+2.8	+36	+14	+7.3	+23	+10	+6

\*Does not account for outlet controls.

The percent change appears large, but the actual change in flow and runoff is small.

**DP2 Pre- and Post-Construction Storm Water Runoff calculation results from TR-55:**

Drainage Basin	Acres	Impervious		CN	*Peak Flow, cfs			*Runoff, acre-ft		
		Acre	%		1-yr	10-yr	100-yr	1-yr	10-yr	100-yr
DP2-pre	4.6	0.8	17	77	1.22	4.40	11.22	0.17	0.52	1.28
DP2-post	4.8	0.9	19	77	1.27	4.59	11.71	0.18	0.55	1.33
Change	+0.2	+0.1	NA	0	+0.05	+0.19	+0.49	+0.01	+0.03	+0.05
% change	+4	+13	NA	0	+4.1	+4.3	+4.4	+6	+6	+4

\*Does not account for outlet controls.

The slight area increase is due to changed drainage patterns near property lines.

Both the percent change and the actual change in flow and runoff is small.

The extension of the drainage paths from both DP1 and DP2 meet at the culvert (Culvert 1E) under East Shore Circle just west of The Rink. This culvert is the first publicly-owned structure downstream of the development area. The total drainage area to this point is 27.4 acres. The development area is 3.2 acres, or 12% of the area. If the increase in the 10- and 100-year storm flows is 5% or less, at a point in the drainage system where the development area is 10% of the drainage area, then volume control for those storms is not needed. This table shows the TR-55 analyses of the culvert drainage area before and after development:

Drainage Basin to Culvert 1E	Acres	Impervious		CN	Peak Flow, cfs		
		Acre	%		1-yr	10-yr	100-yr
Pre-	27.4	4.1	15	76	5.14	19.81	51.97
Post-	27.4	4.5	16	76	5.14	19.81	51.97
Change	0	0	0	0	0	0	0
% change	0	0	0	0	0	0	0

Despite the slight increase in impermeable area, the CN remains at 76 for the area. Therefore, volume controls will be provided for the 1-year storm (CPv) only.

## POST-CONSTRUCTION STORM WATER MANAGEMENT

Application of 5 Step Process for Storm Water Management Planning (ref. Chapter 3 New York State Stormwater Management Design Manual)

These 5 Steps constitute a required planning process that involves site planning and stormwater management practice (SMP) selection to ensure that all SMPs are properly evaluated, designed and will function for all reasonable storm conditions.

### ***Step 1: Site planning to preserve natural features and reduce impervious cover.***

Review of the Preservation of Natural Resources practices:

- **Preservation of Undisturbed Areas and Buffers:** The construction will not disturb any riparian corridors, wetlands, perennial streams, rivers, or shorelines.
- **Reduction of Clearing and Grading:** The development area, currently cropland, has no permanent ground cover; upon completion the area will have landscaped yards.
- **Locating Development in Less Sensitive Areas:** There are no less sensitive areas on the property. The site is active cropped farmed land. No steep areas, wetlands, perennial streams, rivers, or shorelines will be disturbed.
- **Open Space Design:** The proposed development is traditional single-family houses, with short driveways and parking for two vehicles.
- **Soil Restoration:** There are no existing compacted areas that need to have permeability restored. Areas compacted during construction will be examined for compaction and loosened if necessary before topsoil is placed. Each home will cover about 3000 square feet, but 5000 square feet is considered impermeable in the run-off calculations, partially to account for compacted soil around each home.

Review of the Reduction of Impervious Cover practices:

- **Roadway Reduction:** No new road is proposed.
- **Sidewalk Reduction:** No sidewalks, except perhaps at the doors to the homes, are proposed.
- **Driveway Reduction:** Each home will have a short drive to access the garage.
- **Cul-de-sac Reduction:** No cul-de-sac is proposed.
- **Building Footprint Reduction:** Each home design will be by the builder and is controlled by the available area.
- **Parking Reduction:** Typically, two spaces will be provided for each home.

### ***Step 2: Calculate Water Quality Volume (WQv) for the site.***

The Water Quality Volume for the Central Drainage Area is calculated (from the Manual and RRv Worksheets):  $WQv = (P)(Rv)(A)/12$ ; where:

WQv = water quality volume in acre-feet

P = 90% Rainfall Event Number (1.0 inches for Ithaca from Fig 4.1 of Manual)

Rv =  $[0.05 + (0.009)(\% \text{ impervious cover})]$ ; minimum is 0.20 because RRv will not equal WQv.

A = site area in acres

The NYS DEC has provided Design Manual Runoff Reduction Worksheets to make the calculations easier. The calculations are discussed in detail below

Six Catchment Areas are defined in the project area, each with WQv treatment:

Catchment Area	Description	Design Point	Area, acres	Impervious Area	WQv Treatment Required, cf
C1	House on Lot 1	DP1	0.14	0.09	319
C2	House on Lot 2	DP1	0.14	0.09	319
C3	House on Lot 3	DP1	0.14	0.09	319
C4	Driveway on Lot 1	DP2	0.16	0.03	127
C5	Driveway on Lot 2	DP2	0.16	0.03	127
C6	Driveway on Lot 3	DP2	0.16	0.03	127
Total			0.51	0.36	1338 (0.031 AcFt)

(due to rounding, all sums may vary slightly)

See the attached Catchment Areas plan.

The goal is to provide 100% Runoff Reduction (RRv) of the WQv for new construction mainly through infiltration, groundwater recharge, and recycling. This is done by maintaining pre-construction permeability of the soil, peak run-off flows and discharge volumes and minimizing concentrated flows through run-off control techniques that provide treatment in a distributed manner before run-off reaches the collection system. This can be accomplished by on-site green infrastructure techniques, standard stormwater management practices with run-off reduction capacity and good operation and maintenance.

However, where providing RRv = WQv is not practical due to slowly permeable natural soils, minimum RRvs are still required based on the Hydrologic Soil Group (HSG) of the on-site soils.

The minimum RRv is calculated  $RRv = [(P)(Rv^*) (Ai)]/12$  where

P = 90% Rainfall Event Number (1.0 inches for Ithaca from Fig 4.1 of Manual)

$Rv^* = [0.05 + (0.009) (I)]$  where I is 100% impervious

$Ai = (S)(AiC)$

AiC = total area of impervious cover, acres

S = HSG specific reduction factor: HSG A = 0.55; HSG B = 0.40;  
HSG C = 0.30; HSG D = 0.20

For this project, the minimum RRv = 279 cf at DP1 + 93 cf at DP2 = 372 cf (0.009 AcFt).

**Step 3: Incorporate green infrastructure techniques and standard SMPs with Runoff Reduction Volume (RRv) capacity.**

The one green infrastructure Area/Volume Reduction practice that will be utilized is Filter Strip with "Rooftop Disconnection", applied to the short driveways (Catchment Areas C4, C5 and C6) at each home. The drives will be constructed so that drainage occurs across the width of the drive and is directed as sheet flow to a level grass area longer than the width of the driveway, before entering the lot swale to the road ditch. The driveway edge will act as a level spreader as it is designed to be level.

Unfortunately, due to the room available and shallow permeable soils on the site, many of the other green infrastructure practices are not applicable for this project:

- Sheet flow to riparian buffers and filter strips (this is used for the driveways with disconnection) but is not available for the roofs due to grading and other needs for potential strip areas)

- Vegetated Swale
- Rain Gardens
- Porous Pavement

Others were considered but deemed not practical for this project:

- Green Roofs
- Rain Barrels and Cisterns

While the property developer and future landowners will undoubtedly plant trees and shrubs, no credit is being taken for storm water treatment or reduction by trees.

The shallow permeable soils also do not allow infiltration practices and the small scope of this project does not allow for long open channels.

Only one standard SMP with RRV capacity is appropriate: Bioretention with underdrains (Bio/U) will be relied on to treat WQv and provide RRV in areas where there is room to install these features. The impermeable areas of Catchment Areas C1, C2 and C3 (roof tops and area immediate around the homes) will be treated by a practice in the rear lawn. The Design Manual Runoff Reduction Worksheets were used to calculate the size of the practices.

Each of the Catchment Area has a dedicated treatment feature:

Catchment Area	Treatment Feature	WQv Req'd	WQv Reduced and Treated	RRv Applied	Sum Reduced + Treated	Dimensions
C1, C2, C3	BioRetention with underdrain	958	572	386	958	274sf min; 2' of media
C4, C5, C6	Grass Filter Strip (and disconnection)	381	0	382	382	100'
Total		1339	572	768	1340	

The RRV applied exceeds the minimum required, and the total WQv treated exceeds that required.

Because these Bio/U's are small the inlet flow will not be controlled; velocities across the Bio/U's and their outlet weirs will be below erosion values (4 fps) for grassed channels for 100-yr flows (figures from Win TR-55 and weir calculations):

Feature	Flow Area	Q, 10-yr storm, cfs	Velocity 10-yr storm, fps	Q, 100-yr storm, cfs	Velocity 100-yr storm, fps
All Bio/U's	4 sf (4" deep)	0.53	0.13	1.06	0.26
All Bio/U, 8' weir	1 sf (1.5" deep)	0.53	0.53	1.06	1.06

Pretreatment of these small Bio/U's will be provided by the grass swale leading to them, and the layer of mulch or wood chips on top of the media. Pre-treatment by a sedimentation basin is not practical on such a small scale, and a gravel diaphragm is not necessary for roof drainage.

The underdrains from each Bio/U will discharge to the Detention Basin on that lot.

**Step 4: Use standard SMP's, where applicable, to treat the portion of water quality volume not addressed by green infrastructure techniques and standard SMP's with RRV capacity.**

All the WQv is treated by green techniques and standard SMP's with RRV capacity.

**Step 5: design volume and peak rate control practices where required.**

The Stream Channel Protection Volume (Cpv) is designed to protect stream banks from erosion by providing 24-hour extended detention of the one-year, 24-hour storm event, less the RRv provided upstream. The volume needed is calculated by:

$$Cpv = Vs = Vr[0.683-1.43(qo/qi)+1.64(qo/qi)^2-0.084(qo/qi)^3]$$

qo/qi (0.065) is found with Design Manual figure 8.5, given qu (257 csm/in) and T=24 hours Detention Time.  $0.065^2 = 0.004$ ;  $0.065^3 = 0.0003$

qu is determined when TR-55 is run for the 1-yr storm.

$$0.683 - 0.093 + 0.007 - 0 = 0.597$$

The runoff from the new impermeable area and surrounding yard of each proposed home will be directed to a detention basin on that lot. While the contributing area varies between 20,000 and 29,000 sf per lot, the area used in the calculation is one acre. Each basin will discharge to Lot 4 and the existing drainage path in the South DA. No detention is planned for the runoff from the driveways in the North DA because of the small impermeable areas involved (less than 1200 sf per lot), and the disconnection of these driveways.

The design of each detention basin:

$Vr = [\text{depth of run-off in inches}/12][\text{Area}]$ ; depth of run-off (0.198") is from Win TR-55.

$Cpv = (0.198)(1)(0.0.597)/12 = 0.0099 \text{ a-ft} = 430 \text{ cf}$ ; less RRv of 129 = **300 cf**; use **400 cf**.

**The total CPv required is 900 cf (0.021 AcFt) and 1200 cf (0.028 AcFt will be provided.**

The volume of the Cpv should be released over 24 hours:  $400/24 = 17 \text{ gph} = 0.0006 \text{ cfs}$ , which is not practical. A 3" diameter pipe is normally used to minimize plugging; the 3" invert in a 12" NDS catch basin is 0.6' below the rim. With the overflow 0.5' above the rim, the outlet center will have 1' of head; the average head will be 0.5'. Using the orifice equation, the discharge will be 0.17 cfs and the Cpv will be released in 40 minutes, much less than the desired 24 hours. A beehive grate will be placed over the catch basin to minimize clogging, so place a cap over the 3" pipe and drill a 1" hole in the cap. The average discharge will then be 0.02 cfs and the Cpv released in 5.5 hours, a slightly more practical time.

Flow greater than the capacity of the bottom drain will exit the basin by overflowing a weir to Lot 4. TR-55 runoff results:

Feature	Depth of Flow	Q, 1-yr storm, cfs	Velocity 1-yr storm, fps	Q, 10-yr storm, cfs	Velocity 10-yr storm, fps	Q, 100-yr storm, cfs	Velocity 100-yr storm, fps
5' weir on all Detention Basins	1.1" for 1-yr storm; 2.58" for 10-yr; 4.7" for 100-yr;	0.40	0.9	1.47	1.4	3.76	2.0

The velocities are within the erosive capability of a grassed weir.

Neither Overbank Flood Control (Qp) (designed to attenuate the post development 10-year, 24-hour peak discharge rate) nor the Extreme Flood Control (Qf) (designed to attenuate the post development 100-year, 24-hour peak discharge rate) are required for this project because the TR-55 analysis shows no change to these peak storm flows at the nearest downstream publicly-owned structure, the culvert (Culvert E1) crossing NYS 34 just west of The Rink.

**List of Post-Construction Practices to be Permanently Maintained by each lot owner:**

- **STORMWATER DETENTION BASIN** (one on each of lots 1, 2, and 3) - detains and slowly releases storm events to protect stream channels from erosion and to mimic run-off flow characteristics prior to site development.
- **BIORETENTION WITH UNDERDRAIN** (one on each of lots 1, 2, and 3) - filters contaminants from run-off ((sediment, trace metals, bacteria and nutrients); slows the flow of run-off and provides for storage and infiltration; and provides some wildlife habitat if planted to wildlife species.
- **GRASS FILTER STRIP to lot swale with disconnection** (each driveway) - increases overland flow time and reduces peak flows; increases water quality by filtering and infiltrating runoff.

**Permanent Post-Construction Practices Access and Maintenance Agreement:**

There is no proposed new publicly-owned storm water infrastructure, so there is no need for a maintenance agreement or district.

Each lot will be self-sufficient for storm water treatment and control so that there is no need for maintenance agreements between neighbors.

**EROSION and SEDIMENT CONTROL DURING CONSTRUCTION**

Potential Disturbed area:

About 3.8 acres will be disturbed to construct the homes and driveways, the on-site wastewater treatment systems, and control and treat stormwater. However, less than one acre will be disturbed at any one time as the lots are expected to be developed sequentially.

The owner/operator/contractor shall be responsible for implementing and maintaining the following controls and timeline:

Vegetative Control practices include but are not limited to:

- Temporary seeding/mulching of exposed soils and soil stockpiles.

Permanent Structural Practices include but are not limited to:

- Receiving swale on Lot 4, south of development area, to ensure drainage from each lot.

Temporary Structural Practices include but are not limited to:

- Stabilized construction entrance for construction vehicles at each lot.
- Concrete wash-out pits to capture contaminated water from concrete delivery trucks.
- Silt fences – as shown or as necessary to divert storm flow from disturbed areas to undisturbed areas and downslope of soil stockpiles to prevent soil from leaving the site.
- Check dams - along swales until the swales are stabilized. Staked straw bales may be used in place of stone check dams. Stone check dams may be left in place permanently.
- Temporary use of the Detention Basins as sedimentation basins.

Winter Operations: if soil will be disturbed during winter, defined as November 15 through April 1, then the Design Standards for Winter Stabilization must be implemented. See the engineering plans and the New York State Standards and Specifications for Erosion and Sediment Control (2016) for details. Requirements include:

- A snow management plan to provide snow storage and control of melt run off;
- A construction buffer of 25' to all silt fences; silt fences marked with tall stakes;
- Soil stockpiles and disturbed areas stabilized by next business day;
- Straw mulch applied at double the standard rate, to 4 tons per acre.



## **SPILL PREVENTION and HAZARDOUS WASTE CONTROL**

Potentially hazardous materials that may be used or stored on-site include:

Concrete and concrete additives	Cleaning solvents
Detergents	Paints
Acids	Fertilizer
Petroleum products (gasoline, diesel fuel, lubricating oils, etc.)	

Limited quantities will be on-site because, of the size and timing of the project.

Good Housekeeping will minimize the potential for spills or exposure:

- Products will be kept in their original containers with legible labels.
- Material Safety Data Sheets will be kept on-site for each hazardous material.
- Materials stored on-site will be kept in a neat orderly manner, and if possible under a roof or other enclosure.
- Only enough product should be stored for the project.
- Containers must be kept tightly sealed when in storage.
- Products must be used and stored in accordance with the manufacturer's recommendations.
- All product in a container will be used before the container is disposed of. Each container must be disposed of in accordance with the manufacturer's recommendations and in compliance with federal/state/local regulations.
- Spill clean-up material will be kept on site. This should include absorbent material (oil absorbent, kitty litter), brooms, dust pans, mops, rags, gloves, goggles, dust masks, and plastic or metal trash containers.

Spill prevention and clean-up:

- All equipment and tanks will be monitored daily for leaks and receive regular preventive maintenance to reduce the chance for leakage.
- Any spills, such as from a leaking vehicle or other tank or ruptured hydraulic line will be promptly cleaned up with absorbent and handled like any spill from equipment owned by the contractor.
- All petroleum spills must be reported to the NYS Spill Hotline (1-800-457-7362) within 2 hours of discovery, except spills which meet **all of the following criteria**:
  - The quantity is known to be less than 5 gallons; and
  - The spill is contained and under the control of the spiller; and
  - The spill has not and will not reach the State's water or any land; and
  - The spill is cleaned up within 2 hours of discovery.
  - A spill is considered to have not impacted land if it occurs on a paved surface such as asphalt or concrete. A spill in a dirt or gravel parking lot is considered to have impacted land and is reportable.

No waste material will be disposed of on-site by burning or burial with the exception that very small amounts of non-hazardous construction debris (natural wood, plant debris, cured concrete, etc.) may be buried. Concrete wash-out pits must be used to capture rinse water from concrete trucks and chutes. Burying debris in a residential development, especially where on-site sewage systems are needed, is not advised as it could create settling and other problems.

## SEQUENCE of MAJOR ACTIVITIES

- Obtain SWPPP and Site Plan approval and applicable permits.
- Hold pre-construction conference with owner, design engineer, contractors and Town inspector one week prior to beginning construction.
- Establish at least one vertical control mark for the contractor's use.
- Complete work on Lot 4 before beginning any work on lots 1-3:
  - Install stabilized entrance and establish equipment and material staging area, if needed to prevent tracking soil onto pavement.
  - Install silt fences immediately below disturbed areas and soil stockpiles as work progresses.
  - Construct swales on lot 4, with check dams, as shown.
  - Once the Lot 4 work is stabilized, remove silt from behind check dams and silt fences; remove silt fence and unneeded check dams.
- As each lot is developed:
  - Construct stabilized entrance at each lot.
  - Install silt fences immediately below disturbed areas as work progresses.
  - Construct temporary sediment basin in the area of the future Detention Basin.
  - Establish equipment and material staging area in area of future drive.
  - Install new swales where shown.
  - Install check dams or straw bales along and at swale outlets.
  - Construct drive and parking area.
  - Rough grade areas as needed; mulch any area that will not be worked on for 2 weeks.
  - Construct Detention Basin to area and depth as shown.
  - Construct OWTS.
  - Construct buildings, complete drives, etc.
  - Install bioretention areas, seed and mulch
  - Final grade, landscaping, seed and mulch.
- Once any lot is stabilized:
  - Remove silt from behind check dams and silt fences; remove silt fence and unneeded check dams.
  - Incorporate stabilized entrance into drive.

## SUMMARY/CONCLUSIONS

- The East Shore Circle Four-Lot Subdivision project will add 3 residential homes to a 26-acre property that currently has no buildings. Total expected occupancy is 12 people.
- Water supply will be met by a connection to each home from the existing Town of Lansing distribution system.
- Sewage treatment will be by on-site wastewater treatment systems (OWTS), one for each home.
- The project will have no adverse impacts on any environmental sensitive features or areas of historical or cultural significance.
- About 3.8 acres will be disturbed to construct the homes, the on-site wastewater treatment systems, and control and treat stormwater. Erosion and Sedimentation during construction will be controlled by:

- Disturbing as small an area as possible, always less than 5 acres, at any time;
- Using vegetative control practices such as temporary seeding/mulching of exposed soils and soil stockpiles;
- Using permanent and temporary structural practice, such as stabilized construction entrance, swales, stone check dams, silt fences, and sedimentation basin.

- Stormwater runoff will be treated to preserve quality (WQv) and achieve the minimum Runoff Reduction (RRv) by use of bioretention facilities with underdrains. The amount treated/provided exceeds that required after disconnection of the driveways:

WQv, Acre-feet		RRv, Acre-feet	
required	provided	required	provided
0.022	0.022	0.006	0.009

- The rate and volume of stormwater runoff will be controlled by providing as much RRv as practical, and by installing a dry detention basin with a controlled outlet for the 1-year (Cpv), storm event on each lot. The rate of runoff reaching the Design Point 1 (leaving the southern property boundary) is calculated:

	1-yr, cfs	10-yr, cfs	100-yr, cfs
Pre-Construction	1.26	7.05	21.36
Post-Construction	1.71	8.05	22.91

The impact of the small detention basins is not reflected in the analysis.

The rate of runoff reaching the Design Point 2 (in the East Shore Circle ditch west of the property boundary) is calculated:

	1-yr, cfs	10-yr, cfs	100-yr, cfs
Pre-Construction	1.22	4.40	11.22
Post-Construction	1.27	4.59	11.71

The impact of the development is very small.

The rate of runoff reaching the first publicly owned structure, the culvert under East Shore Circle, is not changed even with a slight impermeable area increase.

**EAST SHORE CIRCLE 4-LOT SUBD DRAINAGE AREAS, PRE- AND POST-CONSTRUCTION**

See attached.

**EAST SHORE CIRCLE 4-LOT SUBDIVISION CATCHMENT AREAS**

See attached.

**NOTICE OF INTENT (NOI)**

The NOI will be filed electronically, but the paper copy is attached.

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Town of Lansing

**AGRICULTURAL DATA STATEMENT**

November 29, 2017

Date: \_\_\_\_\_

**Instructions:** In accordance with Section 283-a of the New York State Town Law, this form must be completed for an application for a special permit, site plan approval, use variance, or a subdivision requiring municipal review that would occur on property with 500 feet of a farm operation in a certified Agricultural District.

Applicant	Owner (if different from applicant)
Name: John Young, et al.	Name:
Address: 410 Triphammer Road Ithaca, NY 14850	Address:

1. Type of Application:  Special Use Permit;  Site Plan Approval;  Use Variance;  Subdivision Approval
2. Project Name/Location: East Shore Circle 4-Lot Subdivision, S/S East Shore Circle
3. Tax Parcel Number(s): 503289-37.1-7-12.2
4. Description of proposed project: Create 3 one-acre residential building lots along the south side of east Shore Circle. Each will access East Shore Circle.
5. Number of total acres involved with project: 4
6. Number of acres presently in Tax Parcel: 26.6
7. How much of the site is currently farmed? \_\_\_\_\_ Acres
8. Please identify who is farming the site: 20 acres farmed by Matt Dedrick
9. Does this person \_\_\_\_\_ own, or <sup>XX</sup> \_\_\_\_\_ rent the land. (Please check only one).
10. Please indicate what the intentions are for the use of the remainder of the property  
Arable land will be leased for farming.

11. Who will maintain the remainder of the property not being used for this development?  
John Young, owner

12. Other project information. Please include information about the existing land cover (crops or vegetation), any known impacts on existing stormwater drainage (including field tiles), or other significant plant materials:

The property is split by East Shore Circle. The 3-lot development will occur

south of East Shore Circle. This area is currently cultivated.

Drainage from the lot frontage is to the East Shore Circle road ditch, which flows

westerly, eventually reaching a culvert under East Shore Drive south of The Rink.

The majority of the lot area, including the proposed buildings, drains to the south

reaching the same culvert.

  
Signature of Applicant

Signature of Owner (if other than app)

\*\*\*\*\*

**FOR TOWN USE ONLY:**

Note: This form and a map of the parcel(s) should be mailed to County Planning as part of the GML 239 m and n referral. It should also be mailed to property owners within 600 feet of the property boundary (Attach list of property owners within 600 feet).

Name of Staff Person: \_\_\_\_\_

Date referred to County Planning: \_\_\_\_\_