

APPENDIX H

NYSDEC SIGNED WETLANDS MAP

PRECONSTRUCTION NOTIFICATION (PCN)/ WETLANDS REPORT

BIOLOGIST REPORT AND RESPONSE TO COMMENTS



RECORD OWNERS:

PCC RESERVOIR LLC
173 WEST STREET
WARWICK, NEW YORK 10990
L. 14015 P. 1047
11 - 1 - 45

GOSHEN LAND OWNER LLC
152 W 57TH STREET FL 19TH
NEW YORK, NEW YORK 10014
L. 13837 P. 1101
11 - 1 - 46
15 - 1 - 59
FILED MAP NO. 8629
LOT 2

BRIAN CAREY
7 OLD TOWN ROAD
MONROE, NEW YORK 10950
L. 11371 P. 629
11 - 1 - 47

FINI BROTHERS
P.O. BOX 998
GOSHEN, NEW YORK 10924
11 - 1 - 49.2
L. 2521 P. 105
11 - 1 - 58
L. 2378 P. 322

TOWN OF GOSHEN
41 WEBSTER AVENUE
GOSHEN, NEW YORK 10924
L. 2295 P. 705
11 - 1 - 60
11 - 1 - 62
11 - 1 - 63
11 - 1 - 64
11 - 1 - 65
11 - 1 - 66
11 - 1 - 67
11 - 1 - 68
11 - 1 - 69

LOT AREAS:

TAX LOT 11 - 1 - 45	18.243± AC.
TAX LOT 11 - 1 - 46	104.883± AC.
TAX LOT 11 - 1 - 47	0.803± AC.
TAX LOT 11 - 1 - 58	108.735± AC.
TAX LOT 11 - 1 - 49.2	103.584± AC.
TAX LOT 15 - 1 - 59	166.723± AC.
TAX LOT 11 - 1 - 60	2.689± AC.
TAX LOT 11 - 1 - 62	7.662± AC.
TAX LOT 11 - 1 - 63	0.805± AC.
TAX LOT 11 - 1 - 64	1.342± AC.
TAX LOT 11 - 1 - 65	0.501± AC.
TAX LOT 11 - 1 - 66	2.132± AC.
TAX LOT 11 - 1 - 67	0.191± AC.
TAX LOT 11 - 1 - 68	2.094± AC.
TAX LOT 11 - 1 - 69	1.565± AC.
TOTAL:	521.952± AC.

WETLAND AREAS:

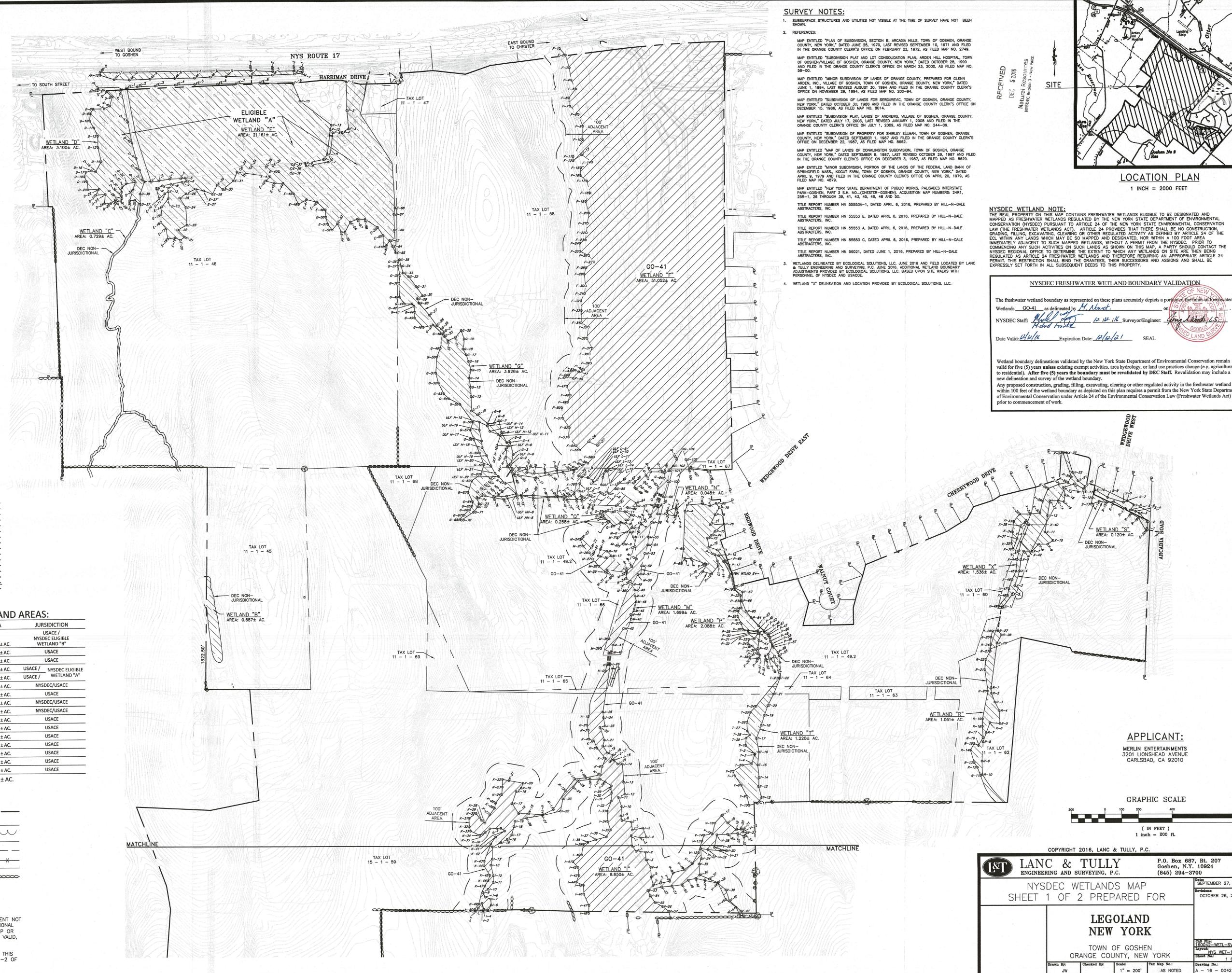
WETLAND ID	AREA	JURISDICTION
WETLAND A	19.355 ± AC.	USACE / NYSDEC ELIGIBLE WETLAND "B"
WETLAND B	0.587 ± AC.	USACE
WETLAND C	0.729 ± AC.	USACE
WETLAND D	3.100 ± AC.	USACE / NYSDEC ELIGIBLE WETLAND "A"
WETLAND E	21.161 ± AC.	USACE / NYSDEC ELIGIBLE WETLAND "A"
WETLAND F	51.052 ± AC.	NYSDEC/USACE
WETLAND G	3.926 ± AC.	USACE
WETLAND I	8.650 ± AC.	NYSDEC/USACE
WETLAND M	1.699 ± AC.	NYSDEC/USACE
WETLAND N	0.048 ± AC.	USACE
WETLAND P	2.088 ± AC.	USACE
WETLAND Q	0.258 ± AC.	USACE
WETLAND R	1.051 ± AC.	USACE
WETLAND S	0.120 ± AC.	USACE
WETLAND T	1.220 ± AC.	USACE
WETLAND X	1.536 ± AC.	USACE
TOTAL	116.580 ± AC.	

LEGEND:

- PROPERTY LINE: ————
- EXISTING EASEMENT: - - - - -
- EDGE OF PAVEMENT: ————
- TREE LINE: ~~~~~~
- WATER: ————
- GRAVEL/BROKEN PAVEMENT: - - - - -
- FENCE: — x — x — x —
- TAX LOT LINE: ————
- STONE WALL: ————
- DEC WETLANDS: [Hatched Box]
- FEDERAL WETLANDS: [Diagonal Lines Box]

COPIES FROM THE ORIGINAL OF THIS DOCUMENT NOT MARKED WITH AN ORIGINAL OF THE PROFESSIONAL ENGINEER'S AND/OR LAND SURVEYOR'S STAMP OR EMBOSSED SEAL SHALL NOT BE CONSIDERED VALID, TRUE COPIES.

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 7209-2 OF THE NEW YORK STATE EDUCATION LAW.



SURVEY NOTES:

- SUBSURFACE STRUCTURES AND UTILITIES NOT VISIBLE AT THE TIME OF SURVEY HAVE NOT BEEN SHOWN.
- REFERENCES:
 - MAP ENTITLED "PLAN OF SUBDIVISION, SECTION B, ARCADIA HILLS, TOWN OF GOSHEN, ORANGE COUNTY, NEW YORK," DATED JUNE 25, 1970, LAST REVISED SEPTEMBER 10, 1971 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON FEBRUARY 22, 1972, AS FILED MAP NO. 2749.
 - MAP ENTITLED "SUBDIVISION PLAT AND LOT CONSOLIDATION PLAN, ARDEN HILL HOSPITAL, TOWN OF GOSHEN/VILLAGE OF GOSHEN, ORANGE COUNTY, NEW YORK," DATED OCTOBER 28, 1999 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON MARCH 23, 2000, AS FILED MAP NO. 58-00.
 - MAP ENTITLED "MINOR SUBDIVISION OF LANDS OF ORANGE COUNTY, PREPARED FOR GLENN ARDEN, INC., VILLAGE OF GOSHEN, TOWN OF GOSHEN, ORANGE COUNTY, NEW YORK," DATED JUNE 1, 1994, LAST REVISED AUGUST 30, 1994 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON NOVEMBER 29, 1994, AS FILED MAP NO. 200-84.
 - MAP ENTITLED "SUBDIVISION OF LANDS FOR SERVICEMAC, TOWN OF GOSHEN, ORANGE COUNTY, NEW YORK," DATED OCTOBER 30, 1986 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON DECEMBER 15, 1986, AS FILED MAP NO. 8014.
 - MAP ENTITLED "SUBDIVISION PLAT, LANDS OF ANDREWS, VILLAGE OF GOSHEN, ORANGE COUNTY, NEW YORK," DATED JULY 17, 2002, LAST REVISED JANUARY 1, 2008 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON JULY 1, 2009, AS FILED MAP NO. 244-09.
 - MAP ENTITLED "SUBDIVISION OF PROPERTY FOR SHIRLEY ELLMAN, TOWN OF GOSHEN, ORANGE COUNTY, NEW YORK," DATED SEPTEMBER 1, 1987 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON DECEMBER 22, 1987, AS FILED MAP NO. 8862.
 - MAP ENTITLED "MAP OF LANDS OF CONKLINGTON SUBDIVISION, TOWN OF GOSHEN, ORANGE COUNTY, NEW YORK," DATED SEPTEMBER 8, 1987, LAST REVISED OCTOBER 29, 1987 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON DECEMBER 3, 1987, AS FILED MAP NO. 8629.
 - MAP ENTITLED "MINOR SUBDIVISION, PORTION OF THE LANDS OF THE FEDERAL LAND BANK OF SPRINGFIELD BASE, 8007 FARM, TOWN OF GOSHEN, ORANGE COUNTY, NEW YORK," DATED APRIL 9, 1978 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON APRIL 20, 1979, AS FILED MAP NO. 4876.
 - MAP ENTITLED "NEW YORK STATE DEPARTMENT OF PUBLIC WORKS, PALISADES INTERSTATE PARK-GOSHEN, PART 3 S.H., INC. (CHESTER-GOSHEN), ACQUISITION MAP NUMBERS: 24R1, 25R-1, 26 THROUGH 39, 41, 43, 45, 46, 48 AND 50.
 - TITLE REPORT NUMBER HN 55553A-1, DATED APRIL 6, 2016, PREPARED BY HILL-N-DALE ABSTRACTERS, INC.
 - TITLE REPORT NUMBER HN 55553 E, DATED APRIL 6, 2016, PREPARED BY HILL-N-DALE ABSTRACTERS, INC.
 - TITLE REPORT NUMBER HN 55553 A, DATED APRIL 6, 2016, PREPARED BY HILL-N-DALE ABSTRACTERS, INC.
 - TITLE REPORT NUMBER HN 55553 C, DATED APRIL 6, 2016, PREPARED BY HILL-N-DALE ABSTRACTERS, INC.
 - TITLE REPORT NUMBER HN 56021, DATED JUNE 1, 2016, PREPARED BY HILL-N-DALE ABSTRACTERS, INC.
- WETLANDS DELINEATED BY ECOLOGICAL SOLUTIONS, LLC JUNE 2016 AND FIELD LOCATED BY LANC & TULLY ENGINEERING AND SURVEYING, P.C. JUNE 2016. ADDITIONAL WETLAND BOUNDARY ADJUSTMENTS PROVIDED BY ECOLOGICAL SOLUTIONS, LLC BASED UPON SITE WALKS WITH PERSONNEL OF NYSDEC AND USACE.
- WETLAND "X" DELINEATION AND LOCATION PROVIDED BY ECOLOGICAL SOLUTIONS, LLC.

NYSDEC WETLAND NOTE:
THE REAL PROPERTY ON THIS MAP CONTAINS FRESHWATER WETLANDS ELIGIBLE TO BE DESIGNATED AND MAPPED AS FRESHWATER WETLANDS REGULATED BY THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) PURSUANT TO ARTICLE 24 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW (THE FRESHWATER WETLANDS ACT). ARTICLE 24 PROVIDES THAT THERE SHALL BE NO CONSTRUCTION, GRADING, FILLING, EXCAVATING, CLEARING OR OTHER REGULATED ACTIVITY AS DEFINED BY ARTICLE 24 OF THE ECL WITHIN ANY LANDS WHICH MAY BE SO MAPPED AND DESIGNATED, NOR WITHIN A 100 FOOT AREA IMMEDIATELY ADJACENT TO SUCH MAPPED WETLANDS, WITHOUT A PERMIT FROM THE NYSDEC. PRIOR TO COMMENCING ANY SUCH ACTIVITIES ON SUCH LANDS AS SHOWN ON THIS MAP, A PARTY SHOULD CONTACT THE NYSDEC REGIONAL OFFICE TO DETERMINE THE EXTENT TO WHICH ANY WETLANDS ON SITE ARE THEN BEING REGULATED AS ARTICLE 24 FRESHWATER WETLANDS AND THEREFORE REQUIRING AN APPROPRIATE ARTICLE 24 PERMIT. THIS RESTRICTION SHALL BIND THE GRANTEES, THEIR SUCCESSORS AND ASSIGNS AND SHALL BE EXPRESSLY SET FORTH IN ALL SUBSEQUENT DEEDS TO THIS PROPERTY.

NYSDEC FRESHWATER WETLAND BOUNDARY VALIDATION

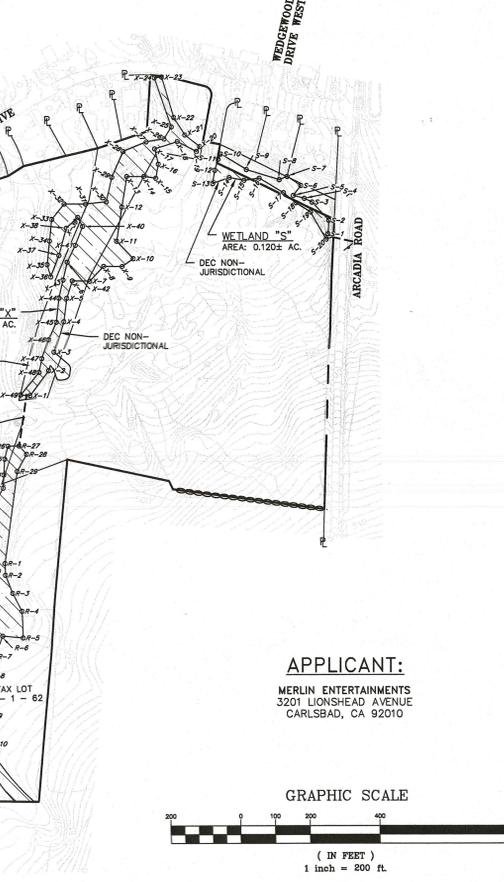
The freshwater wetland boundary as represented on these plans accurately depicts a portion of the limits of Freshwater Wetlands GO-41 as delineated by M. Aberti on 12/12/16

NYSDEC Staff: [Signature] Surveyor/Engineer: [Signature]

Date Valid: 12/16 Expiration Date: 12/16 SEAL

Wetland boundary delineations validated by the New York State Department of Environmental Conservation remain valid for five (5) years unless existing exempt activities, area hydrology, or land use practices change (e.g. agricultural to residential). After five (5) years the boundary must be revalidated by DEC Staff. Revalidation may include a new delineation and survey of the wetland boundary.

Any proposed construction, grading, filling, excavating, clearing or other regulated activity in the freshwater wetland or within 100 feet of the wetland boundary as depicted on this plan requires a permit from the New York State Department of Environmental Conservation under Article 24 of the Environmental Conservation Law (Freshwater Wetlands Act) prior to commencement of work.



APPLICANT:
MERLIN ENTERTAINMENTS
3201 LIONSHEAD AVENUE
CARLSBAD, CA 92010

GRAPHIC SCALE
1 inch = 200 feet

DATE: SEPTEMBER 27, 2016
REVISION: OCTOBER 26, 2016

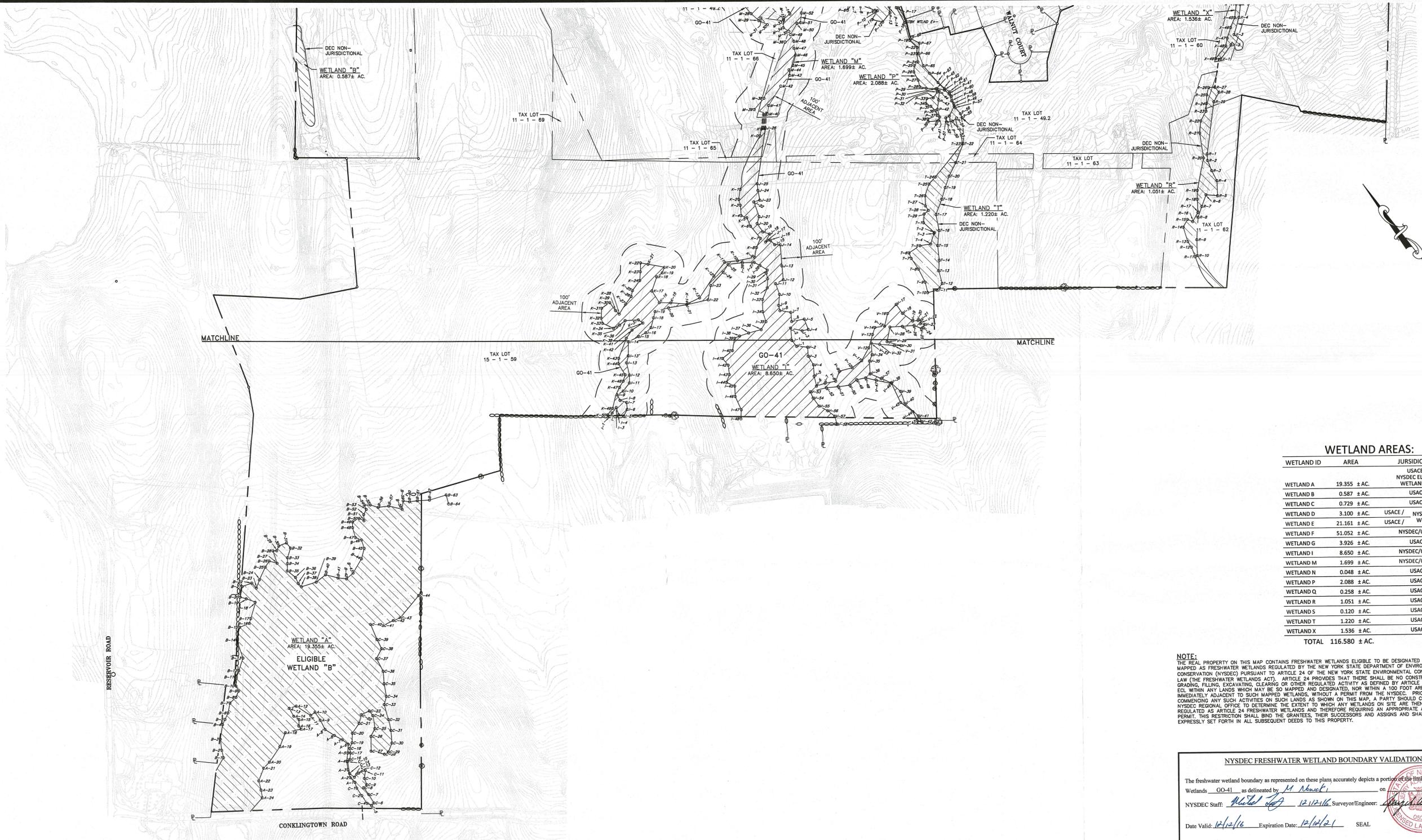
LANC & TULLY
ENGINEERING AND SURVEYING, P.C.
P.O. Box 687, Rt. 207
Goshen, N.Y. 10924
(845) 294-3700

NYSDEC WETLANDS MAP
SHEET 1 OF 2 PREPARED FOR

LEGOLAND
NEW YORK

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Drawn By: JW Checked By: [] Scale: 1" = 200' Tax Map No.: AS NOTED Drawing No.: A-16-0042-02



WETLAND AREAS:

WETLAND ID	AREA	JURISDICTION
WETLAND A	19.355 ± AC.	USACE / NYSDEC ELIGIBLE WETLAND "B"
WETLAND B	0.587 ± AC.	USACE
WETLAND C	0.729 ± AC.	USACE
WETLAND D	3.100 ± AC.	USACE / NYSDEC ELIGIBLE WETLAND "A"
WETLAND E	21.161 ± AC.	USACE / NYSDEC ELIGIBLE
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WETLAND T	1.220 ± AC.	USACE
WETLAND X	1.536 ± AC.	USACE
TOTAL	116.580 ± AC.	

NOTE:
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NYSDEC FRESHWATER WETLAND BOUNDARY VALIDATION

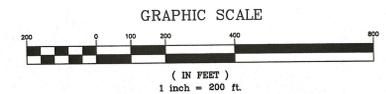
The freshwater wetland boundary as represented on these plans accurately depicts a portion of the limits of Freshwater Wetlands GO-41 as delineated by M. Newick on _____

NYSDEC Staff: [Signature] 12/12/16 Surveyor/Engineer: [Signature]

Date Valid: 12/12/16 Expiration Date: 12/12/21 SEAL

Wetland boundary delineations validated by the New York State Department of Environmental Conservation remain valid for five (5) years unless existing exempt activities, area hydrology, or land use practices change (e.g. agricultural to residential). After five (5) years the boundary must be revalidated by DEC Staff. Revalidation may include a new delineation and survey of the wetland boundary.

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LEGEND:

PROPERTY LINE	---
EXISTING EASEMENT	---
EDGE OF PAVEMENT	---
TREE LINE	~~~~~
WATER	~~~~~
GRAVEL/BROKEN PAVEMENT	---
FENCE	---x---
TAX LOT LINE	---
STONE WALL	o-o-o-o-o
DEC WETLANDS	▨
FEDERAL WETLANDS	▨

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LANC & TULLY
 ENGINEERING AND SURVEYING, P.C.

P.O. Box 687, Rt. 207
 Goshen, N.Y. 10924
 (845) 294-3700

NYSDEC WETLANDS MAP
 SHEET 2 OF 2 PREPARED FOR

LEGOLAND NEW YORK
 TOWN OF GOSHEN
 ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 27, 2016
 Revision: OCTOBER 26, 2016

Drawn By: JW Checked By: [] Scale: 1" = 200' Text Map No.: AS NOTED
 Drawing No.: A-16-0042-C30

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April 26, 2017

Department of the Army
New York District Corps of Engineers
Attention: Brian Orzel, Room 1937
26 Federal Plaza
New York, NY 10278-0090

*Re: Nationwide Permit #39 - Pre-Construction Notification (PCN)
Legoland New York – Theme Park Site
Town of Goshen, Orange County, NY*

Dear Brian:

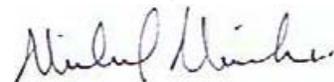
The following information is provided for your evaluation of the above referenced project known as Legoland New York with approximately 524 acres located off of Harriman Drive in the Town of Goshen, Orange County, NY. The owner of the property and prospective permittee is:

Merlin Entertainments Group US Holdings Inc.
c/o Ian Sarjeant
3201 Lionshead Avenue
Carlsbad, CA 92010
(760) 845-4729

The attached information includes three (3) copies of a plan entitled, "On-Site Wetland Disturbances and Mitigation Map" Sheet 1, 2, and 3 dated April 4, 2017 and last revised April 18, 2017 prepared by Lanc & Tully Engineering & Surveying, PC, Joint Application For Permit, Draft Environmental Impact Statement – Final, New York State Office of Parks, Recreation, and Historic Preservation Letter dated January 24, 2017, Threatened and Endangered Species Habitat Assessment and Federal Threatened and Endangered Species Habitat and Impact Assessment Memo dated April 6, 2017 both prepared by EcolSciences, Inc. and dated August 16, 2016 and last revised September 13, 2016, US Fish and Wildlife Service Correspondence dated December 19, 2016, and Wetland Establishment Report dated April 26, 2017.

If you need additional information please call me at 203-910-4716.

Sincerely



Michael Nowicki
Biologist

1.0 INTRODUCTION

The Applicant, Merlin Entertainments Group US Holdings, is seeking authorization for the discharge of fill material to a total 0.44 acres of Federal wetland (waters of the US) from the United States Army Corps of Engineers (USACE) in accordance with Section 404 of the Clean Water Act and 33 CFR Part 330 under Nationwide Permit 39 for the proposed Legoland Theme Park. Figure 1 shows the 522 acres Site location and Table 1 lists the proposed location of each impact and the proposed 0.47 acres wetland mitigation area.

The Applicant is proposing to construct a theme park and resort on approximately 140 acres of a 521.95 acre site consisting of 15 total parcels located off Harriman Drive in the Town of Goshen. The park, to be called LEGOLAND New York (sometimes hereinafter abbreviated as "LLNY"), will include rides and attractions, an aquarium, theaters, restaurants, a hotel and various back-of-house (administrative and maintenance) facilities including offices and staff area as well as associated parking and drainage facilities. Generally, the site is laid out with the park in the center of the site. Restaurants, shops, rides and attractions within the park are organized into eight themed area surrounded by a ring road. The main guest parking area is located to the south of the park the hotel is located in the south eastern corner of the site with its own separate parking and direct park entrance. The Back-of-House uses such as offices, maintenance buildings, and other staff area are located in the northeastern corner of the site with separate access from Harriman Drive.

Separately as a result of the numerous comments received on the Draft Environmental Impact Statement (DEIS) from the public, the Planning Board, and their consultants, as well as with input from New York State Department of Transportation (NYSDOT), several modifications to the proposed access plans and traffic mitigations to be completed in association with the LEGOLAND development. The DEIS analyzed several alternatives for improvements at the NYS Route 17 Exits 124 and 125 and as a result of input from NYSDOT and Federal Highway Administration (FHWA), these have been refined and modified alternatives have been explored and the new preferred alternative has been more thoroughly evaluated. The preferred traffic mitigation plan now includes the relocation and reconfiguration Exit 125 on Route 17, including building a bridge over NYS Route 17. The relocation of Exit 125 would address concerns regarding traffic impacts on local roads by removing LEGOLAND traffic from South Street and Harriman Drive in Goshen. It would also solve geometric shortfalls of the existing Exit 125 interchange compared to current FHWA and NYSDOT design guidelines. This reconfiguration of Exit 125 would be designed to meet current FHWA and NYSDOT standards, which will assist with Route 17's future conversion to Interstate-86.

Figure 1 Location Map

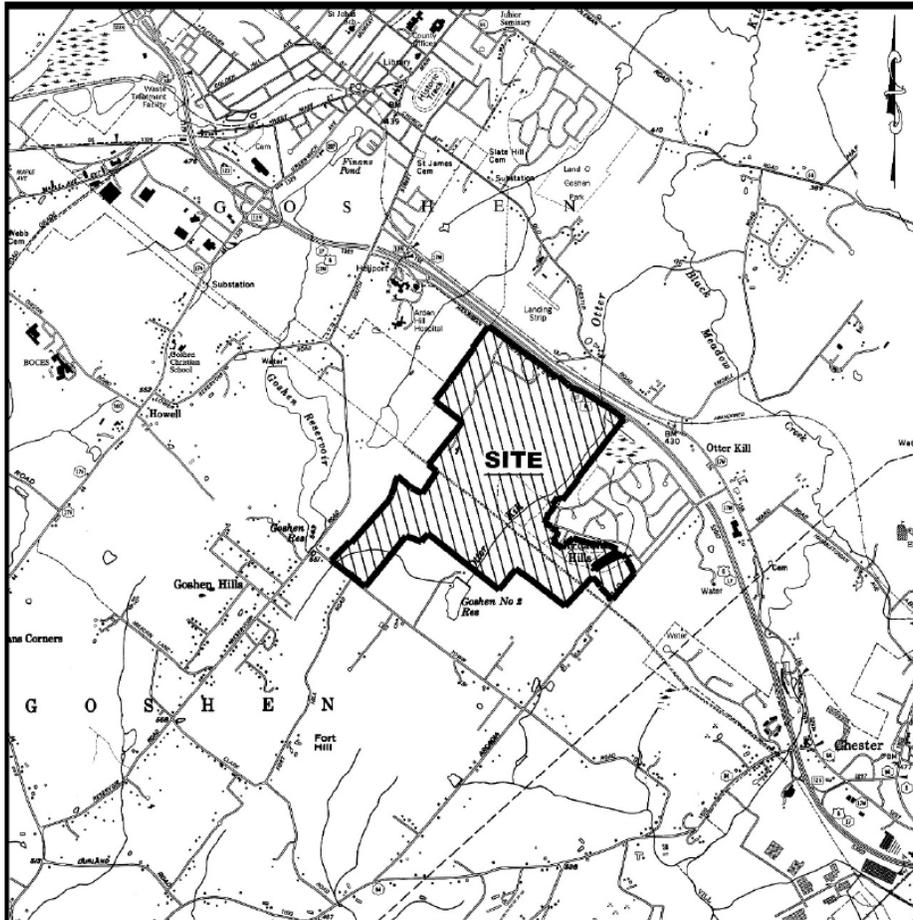


Table 1
 Wetland Impact and Mitigation

WETLAND DISTURBANCE AREAS

Location	Wetland ID	ACOE
(1) Onsite Emergency Connection Guest Access Rd to Service Rd	ACOE Wetland "C"	0.039 ± AC.
(2) Guest Access Drive	ACOE Wetland "C"	0.030 ± AC.
(3) Guest Access Drive	ACOE Wetland "C"	0.040 ± AC.
(4) Onsite Near East End of Guest Parking Area	ACOE Wetland "G"	0.073 ± AC.
(5) Back of house access drive	ACOE Wetland "E" (NYSDEC Eligible "A")	0.179 ± AC.
(6) Harriman Drive near back of house entrance	ACOE Wetland "E" (NYSDEC Eligible "A")	0.063 ± AC.
(7) Emergency Access to Arcadia Road	ACOE Wetland "T"	0.016 ± AC.
Total Wetland Disturbances		0.440 ± AC.

POTENTIAL WETLAND MITIGATION AREA

Location	Wetland ID	ACOE	NYSDEC
Existing Site Access Road	ACOE Wetland "D" & "E" (NYSDEC Eligible "A")	0.47 ± AC.	
TOTAL POTENTIAL WETLAND MITIGATION PROVIDED		0.47 ± AC.	

2.0 PURPOSE AND NEED FOR PROJECT

The purpose of the project is to construct LEGOLAND New York to serve the Hudson Valley and Tri-State Area market. Orange County currently has a need for taxpaying tourist attractions and educational entertainment opportunities for children and young families. These two needs are both documented in numerous County Planning studies as well as the fact that school districts and parents throughout Orange County routinely and often transport children outside of the County and, in some cases, out of state for educational field trips. LEGOLAND New York will provide an unparalleled local educational experience.

LEGOLAND New York will offer year round educational opportunities to schoolchildren throughout the region, with programs focused on STEM (Science, Technology, Engineering and Math) education. LEGOLAND New York will also partner with local schools and colleges to train and employ students interested in careers in hospitality, business, mechanical engineering, among other fields.

3.0 PROJECT DESCRIPTION

Merlin Entertainments proposes to construct and operate a commercial recreation facility on approximately 140 acres of a 521.95 acre site consisting of 15 parcels located along the easterly side of Harriman Drive in the Town of Goshen. The commercial recreation facility will consist of the LEGOLAND New York theme park, including rides and attractions, an aquarium, theaters, restaurants, a 250 guest room hotel, retail and various supporting administrative (sometimes referred to as “back-of-house” facilities, including offices and staff areas, as well as associated onsite surface parking, and drainage facilities. The Project Sponsor proposes to seek public water and sewer services from the Village of Goshen, and the Village of Goshen has indicated its ability to serve the Project subject to certain conditions. A total of 5,634 parking spaces will be provided onsite which includes the main guest lot, hotel parking and staff parking areas. Parking attendants will direct vehicles within the day-guest parking lot to ensure efficient and expedited parking of guest vehicles. Main access to the park will be from Harriman Drive. Vehicles will enter at one main gate and circulate south to the main parking area. The entrance road will allow for stacking of approximately 500 vehicles. Main entrance to the hotel will also be from the main entrance but a designated bypass lane will be provided for hotel guests. All deliveries will be in the ‘back-of-house’ area.

All traffic will be directed to access LEGOLAND New York via Exit 124 of NYS Route 17. From the exit, vehicles will travel east along the Route 17M connector Road, turn right onto South Street and left onto Harriman Drive to the main access road. As part of the proposed project, comprehensive traffic upgrades and improvements are proposed throughout the study area including lane widening, new turning lanes, new traffic signalization, new signage, extending acceleration and deceleration lanes and ramp improvements on NYS Route 17. These offsite road improvements will upgrade Route 17 in the project area as contemplated by the New York State Department of Transportation to upgrade the Route to Interstate status. Legoland will fund the road improvements for the State to upgrade Route 17 and will apply for a permit to the USACE for the road improvements in a separate application.

4.0 WETLAND DESCRIPTION

Federal Jurisdictional Wetland

The results of the delineation indicate that a total of fifteen (15) separate wetlands exhibiting wetland hydrology, soils, and vegetation are present on the site. The flag series and corresponding wetland classification nomenclature (Cowardin et al., 1979) are as follows:

Site Wetlands

Wetland A – G, I, M, N, P, Q, R, S, and T - Palustrine Forested (PFO1E) with PUB1 in several areas.

Hydrology

All of the wetland areas observed on the site exhibited one or more of the following (1) pooled water; (2) flowing water; and (3) ground water seepage. On average water depths within the on-site wetlands ranged from 0-8 inches. Water depth in the open water-bodies on the site could not be determined.

Water table elevations within on-site wetlands are presumed to occur within a fairly wide range of elevations (up to one foot). Forested wetlands on the site exhibit a distinct hummock-hollow topography, which varies with the degree of water table fluctuations.

Wetlands associated with either an ephemeral, intermittent, or perennial stream channel include Wetlands A-G, I, M, N, P, R, and S. Surface water and ground water trend in a northerly direction and ultimately discharge to the Hudson River.

Hydric Soils

The dominant hydric mapping unit on the site is the Ma (Madalin silt loam) and Alden Extremely stoney silt loam (Ac) soil series. All of the wetlands identified on the site occur in these series.

Vegetation

Herbaceous species identified generally within the site wetlands included *Symplocarpus foetidus* (skunk cabbage), *Onoclea sensibilis* (sensitive fern), *Osmunda cinnamomea* (cinnamon fern), *Carex stricta* (tussock sedge), and *Juncus effusus*. (soft rush).

Shrub species observed included *Acer rubrum* (red maple), and *Lindera benzoin* (spicebush), *Ilex verticillata* (winterberry), and *Cornus amomum* (silky dogwood).

Tree species included *Acer rubrum* (red maple), *Ostrya virginiana* (eastern hophornbeam), *Fraxinus pennsylvanica* (green ash), *Ulmus americana* (American elm), *Quercus bicolor*, (swamp white oak), and *Platanus occidentalis* (American sycamore).

Federal jurisdictional wetlands in the easement are providing the following functions:

- Maintain Flood, Erosion and Storm Control: Most freshwater wetlands are basins with spongy soils that support dense vegetation with extensive root systems. Water from surface runoff and stream overflow will spread out over the wetland, slowing the force of the water. This results in a reduction of erosion and flooding downstream.
- Control Pollution and Sedimentation (Bio-filtration): Wetlands serve as settling and filtering basins. As the incoming water is slowed down, most suspended solids fall to the bottom to become part of the wetland soil. Many dissolved chemicals including many considered as pollutants, are also trapped in wetland soil, taken up by wetland vegetation, or transformed by bacteria for plant growth. As a result, water flowing out of a wetland is lower in sediment and dissolved chemicals than the water entering it.
- Wildlife Habitat: Perhaps the most well-known wetland function is as habitat for a diversity of wildlife. The high productivity and dense vegetation provide a habitat that serves as feeding, cover and breeding ground for both wetland and non-wetland species.

5.0 MINIMIZATION OF WETLAND IMPACTS

The proposed internal road will span the onsite unnamed intermittent watercourse in 3 locations to minimize the amount of onsite wetland fill for the theme park. As shown in Figure 1 all on site impacts are associated with road impacts that cannot be avoided and were minimized as discussed. Since the on site impacts qualify for a Nationwide Permit it is assumed that impacts have been minimized.

6.0 CONCLUSION

This Pre-Construction Notification was prepared in accordance with the Nationwide Permit General Conditions. The site design avoids wetlands and minimizes disturbances to the maximum extent practicable. Approximately 0.47 acres of wetland mitigation is proposed and shown on the attached plan set.

Wetland Establishment Report

LEGOLAND New York
Harriman Drive
Town of Goshen
Orange County, NY

April 26, 2017

Prepared by:

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1.0 INTRODUCTION

The Applicant, Merlin Entertainments Group US Holdings, is seeking authorization for the discharge of fill material to a total 0.44 acres of Federal wetland (waters of the US) from the United States Army Corps of Engineers (USACE) in accordance with Section 404 of the Clean Water Act and 33 CFR Part 330 under Nationwide Permit 39. The reauthorized Nationwide Permit program became effective on March 19, 2017. Table 1 lists the proposed location of each impact and the proposed 0.47 acres wetland mitigation area.

The Applicant is proposing to construct a theme park and resort on approximately 140 acres of a 521.95 acre site consisting of 15 total parcels located off Harriman Drive in the Town of Goshen. The park, to be called LEGOLAND New York (sometimes hereinafter abbreviated as "LLNY"), will include rides and attractions, an aquarium, theaters, restaurants, a hotel and various back-of-house (administrative and maintenance) facilities including offices and staff area as well as associated parking and drainage facilities. Generally, the site is laid out with the park in the center of the site. Restaurants, shops, rides and attractions within the park are organized into eight themed area, surrounded by a ring road. The main guest parking area is located to the south of the park, the hotel is located in the south eastern corner of the site with its own separate parking and direct park entrance. The Back-of-House uses such as offices, maintenance buildings, and other staff area are located in the northeastern corner of the site with separate access from Harriman Drive.

Table 1
Wetland Impact and Mitigation

WETLAND DISTURBANCE AREAS

Location	Wetland ID	ACOE
(1) Onsite Emergency Connection Guest Access Rd to Service Rd	ACOE Wetland "C"	0.039 ± AC.
(2) Guest Access Drive	ACOE Wetland "C"	0.030 ± AC.
(3) Guest Access Drive	ACOE Wetland "C"	0.040 ± AC.
(4) Onsite Near East End of Guest Parking Area	ACOE Wetland "G"	0.073 ± AC.
(5) Back of house access drive	ACOE Wetland "E" (NYSDEC Eligible "A")	0.179 ± AC.
(6) Harriman Drive near back of house entrance	ACOE Wetland "E" (NYSDEC Eligible "A")	0.063 ± AC.
(7) Emergency Access to Arcadia Road	ACOE Wetland "T"	0.016 ± AC.
Total Wetland Disturbances		0.440 ± AC.

POTENTIAL WETLAND MITIGATION AREA

Location	Wetland ID	ACOE	NYSDEC
Existing Site Access Road	ACOE Wetland "D" & "E" (NYSDEC Eligible "A")	0.47 ± AC.	
TOTAL POTENTIAL WETLAND MITIGATION PROVIDED		0.47 ± AC.	

2.0 ESTABLISHMENT JUSTIFICATION

2.1 Site Design and Minimization of Impacts

The proposed layout for the development and associated features sought to minimize encroachments into Federal regulated wetlands. The proposed project is designed to provide a suitable layout for the development that meets the Town of Goshen Building and Highway Code and meets the Phase II Stormwater Regulations for treating stormwater from impervious surfaces prior to discharge.

The site design minimizes wetland disturbances to the maximum extent practicable. To compensate for the loss of wetland area and functional capacity, the Applicant is committed to the establishment of 0.47 acres of wetland in one area on the site which is a section of road that will be excavated and planted to connect and become one large contiguous functioning wetland.

The purpose of this report is to document the criteria upon which the total wetland establishment has been designed and provide guidance to the contractor during implementation of the plan. The ultimate goal is to produce a method to create a viable long-term (permanent) wetland community. The work described herein includes the compensatory establishment of a total of approximately 0.47 acres of forested and shrub wetland.

2.2 Methodology

The compensatory wetland establishment plan is based on the proposed establishment area being similar in spatial relation and existing features, and the following principles:

- The water table in the establishment wetlands must be maintained near the finished grade;
- The establishment area must not be flooded for prolonged periods of time as a result of significant rainstorms;
- The area must be planted with sufficient hydrophytic vegetation and seed to allow wetland communities to emerge within a reasonable time period.

2.3 Seeding and Establishment Planting

The final design of the establishment area strives to create edge habitat around the existing wetland type. Wetland plantings will be installed after the placement of suitable substrate material in the establishment area. This bedding material will keep soil moisture high during summer dry periods when establishment of vegetation is critical.

3.0 ESTABLISHMENT GOALS AND OBJECTIVES - ECOLOGICAL CONSIDERATIONS

The design of an interconnected system of existing wetland with forested and shrub wetland is intended so that the existing wetlands serve as a "regeneration nucleus" around which a forested vegetative cover type could be established. This layout was selected to exploit the predicted hydrologic condition of the establishment area. Generally, wildlife populations thrive when edge habitat between cover and food types is increased. Increased edge equates to more resources being available to an animal in a smaller area.

The placement of suitable substrate in the establishment area will provide an ecotonal microhabitat of value to certain wildlife species, while the wooded swamp interface with shrubs will provide two additional ecotones or "edge habitat". By maximizing the amounts and types of these ecotonal areas both the colonization of the area by local wildlife and the natural successional formation of shrub swamp and wooded swamp habitats will be considerably accelerated.

3.1 Prescription of Vegetative Cover Types

The proposed establishment area is designed to maximize the community structural and floristic diversity of the compensatory establishment area when juxtaposed with the existing wetland system. The proposed combination of shrub and wooded swamp is expected to enhance the bio-diversity and the wildlife habitat functions of the entire wetland ecosystem.

Prescriptions for supplemental seeding of those area not receiving establishment plantings, or suitable substrate transplants from the existing wetland disturbance area, is based on published data regarding the water depth tolerances of indigenous wetland species¹, as well as the commercial availability of seed of those species. Seed of indigenous wetland species and genera were prescribed, and potentially problematic, weedy species also were deliberately not prescribed for the establishment area.

The establishment effort involves two major components: one to produce the required hydrological regime, and the other to establish wetland terrain including placement of suitable substrate, seed, and wetland plantings throughout the establishment area. The establishment lines have been adjusted to take advantage of the existing road/fill area and existing wetlands. Successional wetland cover types other than the wooded swamp, such as shrub plantings will provide stability, biological diversity, interspersions of cover types, increased wildlife habitat, and provide the potential for increased structural/floristic complexity, and functional value of the establishment/existing wetland ecosystem.

¹ Southern Tier Consulting, Inc - Wetland Plant Catalog 2017.

4.0 WETLAND ESTABLISHMENT SITE SELECTION

The proposed wetland establishment area was selected due to its location which bisects an existing wetland and relative ease in establishing a hydrologic regime suitable for wetland shrubs and trees. The establishment area will also take advantage of the existing red maple swamp to which it will be attached. Hydrology – a driving factor in establishment design - is evident in the inundated/saturated condition of the surrounding soil.

5.0 BASELINE INFORMATION

5.1 Hydrology of the Establishment Area

The field investigation revealed that organic matter approximately 4 inches deep exists adjacent to and presumably below the proposed establishment area. Beneath this layer exists a (2' – 4') layer of silty clay. Groundwater was observed in the test pit adjacent to the establishment area considered sufficient to support hydrophytic vegetation and the establishment of hydric soils.

The existing adjacent wetland complex will serve as a “regeneration nucleus” from which vegetative cover can expand radially by vegetative reproduction into the proposed establishment area. Since different plant species within the same wetland may often exhibit a wide range of moisture requirements and flooding tolerances, the proposed elevation ranges will provide a micro-topographic moisture gradient conducive to high species diversity.

The proposed layout of the establishment area is designed to facilitate construction and sedimentation control efforts by minimizing excavation and grading requirements.

5.2 Soil Preparations and Vegetative Establishment

The test pit confirmed the presence of mineral soil horizons at varying depths adjacent to the establishment area so that the existing soil fertility is expected to be adequate for the establishment and growth of the suitable substrates, wetland plantings, and seed. Organically rich suitable substrate will be incorporated into the surface of the establishment area and will provide increased fertility and water holding capacity essential for the establishment of wetland communities.

Additional soil amendments are not expected to be required, since the proposed vegetative cover types will thrive in a wide range of soil conditions, with pH values from slightly acidic to neutral. Baseline soil analyses for the establishment area and adjacent wetland, however, will be indispensable in the monitoring and assessment phase of the relative success or failure of the establishment effort.

The combination of existing wetland with shrub swamp establishment area is expected to ensure vegetative establishment and long-term survival, even under summer conditions. The design of this system will maximize surface water availability to transplanted suitable substrate, wetland plantings, and area to be seeded with herbaceous wetland species.

The finished grades of the establishment area will create an increasing moisture gradient from the existing uplands through the establishment area that will improve chances for establishment of a diverse wetland community. These finished grades also will make use of seasonal fluctuations in water elevations, which are widely recognized as crucial to seed germination and seedling establishment of both woody and herbaceous wetland plant species. The remainder of the terrain will be seeded with a mixture of herbaceous, wet meadow species in order to stabilize soils and establish a perennial wetland vegetative community.

5.3 Diversity and Proposed Locations of Vegetative Cover Types

One major goal of the wetland establishment plan is to maximize the floristic diversity and availability of ecotonal, "edge habitat" for subsequent colonization by wildlife. The strategy to achieve this goal is to enhance the proposed wetland plant species and vegetative cover type diversity by utilizing the suitable substrate from impacted wetland area with seeding of commercially available wetland species at appropriate elevations and water depths within the establishment area.

Another objective is to minimize the distances between the proposed vegetative cover types and open water to which access may be needed during periods of summer drought as part of the contingency irrigation plan.

Shrub wetlands will be constructed to add "edge habitat" to the existing wetland vegetation. The existing wetland will remain in its current condition. It is expected that even with successful establishment of diverse cover types, their relative patterns and proportions will fluctuate over ecological time due to weather patterns and natural processes. The majority of the proposed wetland area should develop, ultimately, into a mature forested wetland via an intermediate, shrub swamp successional stage.

Supplemental seeding of the establishment area with wetland seed will stabilize and enhance the vegetative establishment of wetland communities in area that will not be planted with wetland plants.

The supplemental seeding prescriptions of the establishment area, presented in the plan set are based on the site-specific ecological suitability of commercially available seed of indigenous wetland plant species. As is discussed in detail in the following sections, these plants provide excellent food and cover resources for waterfowl and other wildlife populations. In addition, wetland plantings available as whole plants, tubers or rhizomes are prescribed for all establishment area to initiate the colonization process.

Once established, seedlings of woody species will rapidly overtop their herbaceous counterparts and eventually displace those herbs with high light requirements. Little or no competition for water is expected between these woody and herbaceous components so that they can be expected to complement, rather than to compete, with one another during the early stages of successional formation of the establishment area. The gradual displacement of these wet meadow species, by shrubs, trees and more shade-tolerant herbs, however, is the natural successional process that is desired for the long-term establishment of a shrub-dominated swamp and, ultimately, a mature forested wetland community. Natural recruitment via seed dispersal into and germination within the establishment area, from the adjacent portions of the undisturbed wetland, the addition of suitable substrate and the wetland plantings are expected to contribute to the long term establishment of shrub wetland and wooded wetland segments over successional time. Baseline floristic data will be used to assess the relative success of the entire establishment project during the five - year monitoring period.

6.0 WETLAND ESTABLISHMENT WORK PLAN

This section includes an outline of the construction schedule and descriptions of the planting techniques. The last portion describes the erosion control plan proposed to control erosion from the site during construction of the establishment area.

6.1 Construction Schedule

This construction schedule is based on estimates to complete the major items of work and outlines the work necessary to complete the establishment work during the spring of 2017.

Work includes:

- Rough grading of establishment area;
- Fine grading;
- Addition of suitable substrate;
- Planting of all establishment area;
- Seeding of all establishment area.

Equipment that will be utilized for work at the establishment area includes: conventional earth moving equipment including bulldozers, pay loaders, track mounted excavators and dump trucks. The soils being moved include asphalt, rock, and sand.

The following is a rough estimate of material to be moved:

- Rough grade establishment area 0.47 acres;
- Spread material (suitable substrate over bottom of establishment area approximately 50 cubic yards;
- Fine grade establishment area approximately 10 cubic yards.

Grading of Wetland Establishment Area

Approximately 0.47 acres of wetland establishment area is proposed. Excavation of rough grades are expected to require approximately 50 cubic yards of earth movement at 400 cubic yards/day/dozer (D-8) = 1 dozer day required within the period of March 1 to June 1 or October 1 to November 15.

Formulation of the establishment area after completion of rough grading will require an additional 10 cubic yards of earthwork. This operation should occur immediately behind the rough grading work and in conjunction with the addition of the suitable substrate.

Suitable Substrate Over Establishment Area

Spread suitable substrate over approximately 0.47 acres of establishment area. This will require placement of approximately 50 cubic yards of transferred soil and approximately 1 day of an excavator, a pay-loader, and one dump truck.

Since transplanting of the suitable substrate should occur from March 1 to June 1 or October 1 to November 15 the establishment area must be created in this time period. Also, fine grading will require the use of a dozer (D-8).

Planting Establishment area

Actual planting of proposed wetland species shall be conducted in the spring of 2017. Delivery and installation of all plant material will require approximately 1-2 weeks depending on the availability of the proposed species and number of laborers used for the planting.

Seeding

Seeding will occur via hydro-seed technique at approximately two acres/unit/day to cover the establishment area of 0.47 acres, approximately 1 unit day is required to seed the area.

7.0 SITE PROTECTION

Erosion control and earth works are proposed via conventional techniques. The condition of the establishment area will limit runoff velocities and only suspended clay particles are troublesome from an erosion standpoint.

The overall plan is outlined as follows:

Earthworks

- Install erosion controls along establishment fronts;
- Along wetland use silt fences or hay bales;
- Over-seed establishment area with a mixture of wet meadow herbs and cover with straw mulch;

Transplant Suitable Substrate

- Transplant, without delay, suitable soil to receiving area in establishment zone;
- Maintain erosion controls as needed.
- Irrigate suitable substrate transplants;
- Seed any exposed soils with wet meadow species;
- Break-up and spread hay bales over terrestrial area lacking suitable substrate transplants.

8.0 MONITORING PLAN AND REPORT

The establishment area will be monitored for a five-year period after installation of plantings, suitable substrate, and seed. Mortality rates will be calculated and dead or dying plant material will be replaced. Also, the reasons for the mortality will be examined, and the most likely cause for the loss will be corrected before any further establishment efforts are put forth. In the event that climatic conditions require irrigation of the plantings, suitable substrate transplants, and seed during the first summer month, the following plan is suggested. With the use of pumps and with the use of portable irrigation/piping, the plants, suitable substrate, and seeded area can be watered via water truck.

Such watering should only be necessary should rainfall deficit and heat index cause drought type conditions in the establishment area. It is noted that the water table should be only 1 foot below the planting bed surface. This condition in itself should cause the establishment area not to require irrigation.

Minimum irrigation needs are to provide at least 1 inch of rainfall equivalent to the plants every 10 days. Such practice should begin if 1 inch of rain does not fall for 20 days, or if wilting is noticed in the transplants, and be continued for the required period.

9.0 MAINTENANCE AND ADAPTIVE MANAGEMENT PLAN

Several supplemental techniques to ensure the successful establishment of wetland vegetative cover are summarized briefly in the following discussion. If at the end of one complete growing season, the suitable substrate, planted, and seeded area fail to exhibit well-established plant communities, or exhibit patchiness in the patterns of vegetative cover, one or more of the following methods will be considered to supplement the initial vegetation effort.

9.1 Fall Supplemental Seeding

If some of the originally planted material from commercial suppliers has become established successfully in certain area, a second attempt will be made using the same species in area where establishment had failed. Soil analyses for the under vegetated area will be performed, and considerations of other ecological factors that may be responsible for the failure also will be performed before re-planting such area. Any obvious zone patterns, such as failure to survive at certain elevations relative to water levels, may help to "fine tune" the locations and methods for the re-planting.

9.2 Cuttings for Supplemental Establishment

A more costly last resort would be to gather stem cuttings early in the growing season from woody species of the existing wetland for treatment with rooting hormone (Hormodin, Indoleacetic acid, or Naphthalene-acetic acid) and direct placement in the soils of area requiring supplemental plantings. A duplicate set of cuttings also could be planted in flats for propagation under controlled, greenhouse/nursery conditions, as a backup for the field-planted cuttings.

9.3 Nuisance Vegetation Control Plan

The presence of potentially invasive weedy grass species require the following for their surveillance and containment or eradication.

Phragmites communis is an exotic (Australian) grass and is widely recognized as a noxious weed that rapidly displaces indigenous wetland vegetation, especially in disturbed or polluted area, but provides little or no food and cover value for wildlife. Patches of this species occur in wet depressions scattered throughout the upland agricultural field and along the existing wetland habitat.

Phalaris arundinacea, although an indigenous North American wetland grass, recently has been reported to proliferate and cause an aquatic weed problem in open water area following wetland creation projects. This commercially available grass is found scattered in the existing wetland, but is not being prescribed for seeding in the establishment area.

Lythrum salicaria (Purple Loosestrife) is another exotic perennial species that rivals *Phragmites* in its ability to displace indigenous wetland vegetation, while similarly providing no food and cover resources for use by wildlife.

9.4 Map Existing Locations of Problem Species

Any patches of these weeds within the establishment area during construction will be eradicated using the procedures described below. Those sub-populations found outside of the establishment area will not be dealt with until after all site preparation and planting efforts are finalized. Surveillance of these weed species will be performed during the monitoring phase of the establishment project, for all known locations nearby, as part of the biological monitoring plan for the entire establishment area.

Following completion of earthwork, site preparation and planting activities, a base map of the establishment area on which the locations of the pond, stream, associated wetlands, and proposed vegetative cover types will be shown. At that time, the locations of nearby populations of these weedy species will be added to the base map, together with a grid-location system to monitor future expansions or contractions of each patch. This map then will be used during monitoring efforts of the wetland vegetative colonization/establishment, to determine the relative success of the containment and eradication efforts.

9.5 Containment and Eradication Methods

Limited options are available for eradication of nuisance species, especially Phragmites communities. Historically, most attempts to control this weed have failed, even when rhizome excavation and herbicide applications were used. The most realistic goal, therefore, may be to contain these pre-existing patches and prevent invasion and establishment of new patches. A combination of mechanical control and, as a last resort, herbicide applications will be used to eradicate or contain these populations. An idealized sequence of methods to achieve these goals would include:

- Mechanical mowing in accessible upland area, or manual cutting in wetland/establishment area, to preclude bolting/flowering and seed set/dispersal;
- Excavation of any suitable substrates that survive mowing, and;
- Spraying in upland area and/or manual, wick-applications in wetland/establishment area, of any emerging shoots that survive mowing, and excavation, and;
- Repetitions of these procedures to either eradicate or contain these plants.

MEMORANDUM

Date: May 3, 2017

To: Lanc & Tully Engineering & Surveying, P.C.
Attn: Kristen O'Donnell

From: Laura Newgard, EcolSciences, Inc.

Re: Response to Comments
Draft Environmental Impact Statement
LEGOLAND NEW YORK

CC: Dominic Cordisco, Esq.

As requested, EcolSciences reviewed the comments made by United States Fish and Wildlife Service (USFWS), New York State Department of Environmental Conservation (NYSDEC), and Carpenter Environmental Associates, Inc. on the Draft Environmental Impact Statement (DEIS) as they pertain to threatened and endangered species, rare species, and fish. In addition, the revised site plans reflecting the proposed Highway interchange connecting the project directly to Route 17 was also reviewed. An evaluation of the Highway interchange impacts to potential wildlife habitats is also discussed below.

RESPONSE TO COMMENTS

The reports reviewed include:

United States Fish and Wildlife Service letter of December 19, 2016 addressed to Lee Bergus, Chairman Town of Goshen Planning Board;

New York State Department of Environmental Conservation letter of December 23, 2016 addressed to Lee Bergus, Chairman Town of Goshen Planning Board; and

Carpenter Environmental Associates, Inc. memorandum of December 15, 2016 addressed to Lee Bergus, Chairman and Planning Board.

Our responses are as follows:

United States Fish and Wildlife Service letter of December 19, 2016

The USFWS agreed with the determination that no further analysis was required for bog turtle (*Glyptemys muhlenbergii*), dwarf wedge-mussel (*Alasmodonta heterodon*), and small whorled pogonia (*Isotria medeoloides*). However, the Service recommended a survey for Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*) since appropriate habitat was identified within the site and the project proposes the clearing of 96.9- acres of forest.

The project site is currently 521.95- acres. However, with proposed land dedication to the Town of Goshen, New York State Department of Transportation (NYSDOT) and existing cellphone tower footprint, the remaining land area is 507.43- acres. Approximately 148 acres of the site will be disturbed for the theme park and resort, of which 73.58 acres will be impervious. Ultimately of the 347- wooded acres of the Project Site, following construction approximately 250.1- wooded acres will remain. Additionally, the applicant has offered to permanently protect approximately 150 acres of the site by placing certain lands under a conservation easement, which the Town of Goshen would be the grantee. A plan showing the proposed conservation easement areas is included as Figure 10 of the FEIS.

The applicant has also reviewed the tree inventory of significant trees (greater than 35 inches diameter at breast height (DBH)) located within the development area. Several of these trees have been incorporated into the landscaping plan and others have been avoided by reducing the site layout, minimizing grading, and providing retaining walls around the trees root zone. Additionally, the applicant proposes to plant certain native species of trees as mitigation for the loss of wooded areas, which include approximately 50 trees including shagbark Hickory Red Maple, White Oak and Pin Oak that would provide an additional acre of wooded area. This includes supplemental forest planting associated with on-site wetland impact mitigation.

As previously indicated in the DEIS, all tree clearing will only occur during the winter months, between November 1 and March 31, when bats are not expected to occur on-site. Staggering construction, minimizing tree clearing, conducting tree clearing only during the winter to avoid impacts to roosting bats, and providing conservation easements on most on-site wetlands and New York State 100-foot wetland adjacent areas, are all anticipated to avoid/minimize potential impacts to on-site potential bat habitats.

By incorporating these avoidance and minimization techniques, as well as additional mitigating measures, the project sponsor does not propose conducting bat presence/absence surveys.

New York State Department of Environmental Conservation letter of December 23, 2016

Northern Cricket Frog

Based on the review of the NYSDEC comments as they pertain to threatened and endangered species, the Department has agreed no additional surveys are required for the State endangered northern cricket frog (*Acris crepitans*).

Bats

In terms of the Federally and State protected Indiana bat and northern long-eared bat, the Department has identified known hibernacula habitat 5.15 miles from the site, and an Indiana bat roost tree was identified 3.2 miles from the site. As the threatened and endangered species habitat assessment prepared by the applicant acknowledged, the site provides potential foraging and roosting habitats for both of these species. The site includes large numbers of trees with exfoliating bark (shagbark hickory, white oak), deep fissures (black locust, chestnut oak), as well as numerous live and dead snag trees providing cavities, fissures, loose bark, dead limbs, and woodpecker damage holes, all potential roosting habitats for Indiana and northern long-eared bats.

The current development plan proposes impacts to approximately 148 acres of the project's 521.95-acre site. Of these 148 acres, 96.9- acres qualify as forested areas with trees of greater than two inches DBH. As noted in NYSDEC comments, removal of trees during the winter months minimizes impacts to roosting bats. In addition, direct project impacts have been avoided to the 61.401 ± acres of wetlands regulated by New York State. The project has also been designed to minimize impacts to the 15.97 ± acres of New York State wetland adjacent areas. Minimal impacts, 0.44-acres, are anticipated to the 55.32 ± acres of onsite wetlands and waters regulated by the United States Army Corps of Engineers, resulting from the construction of the park. Wetland mitigation measures will also be provided for impacts resulting from the roadway improvements due to the relocation of the Exit 125 interchange and the improvements to Harriman Drive. All remaining wetlands and adjacent areas will be protected from future development by

conservation easements. In addition, on-site mitigation for unavoidable wetland impacts will create 0.47 acres of forested wetlands within the project site. The wetland creation area will also provide supplemental tree planting in the adjacent uplands.

Based on the current site plans and a follow up field investigation conducted by EcolSciences' ecologists in January and March of 2017, the protection of wetlands, adjacent areas, and stream corridors protects some of the high-quality roost trees observed on site. The proximity of these trees to field edges, watercourses and wetlands provide roost trees adjacent to potential foraging habitats and water sources. The mature trees located along the stream channel in the northwestern portion of the development area provide excellent south and east exposure critical for bat maternity colonies in the cooler spring months. Aside from the proposed access road most of these trees located along the stream channel and west of the road will be retained. Additional high quality bat habitat was identified within the NYSDEC wetland (GO-41) located along the Otter Creek tributary. In this case, large areas of standing snag trees in various stages of decay also provide potential roost trees for migrating and resident bats.

The applicant is also proposing to incorporate avoidance, minimization, and mitigative measures into the construction of the site, some of which are discussed above. The project has been designed to avoid or minimize impacts to on-site wetlands and stream corridors. Wetlands, watercourses, and wetland adjacent areas encumber approximately $135 \pm$ acres of the site and represent a significant percentage of the overall project area that will be preserved and maintained in their natural state. These preserved habitats include large areas of forested wetlands, wooded stream corridors, and expansive emergent wetlands. The on-site pond located along Harriman Drive will also be preserved and enhanced because of the elimination of the access road that currently transects this wetland. The applicant has proposed to permanently protect these areas by conservation easement. Preserving wetlands ensures that potential roost trees and foraging habitat remain available on-site.

Large trees identified along the centrally located utility easement are especially attractive to roosting bats due to their large size, exfoliating bark, and solar exposure. Where trees are close to the development area and overhanging branches conflict with proposed structures, the trees will be evaluated to determine if side trimming or removal of only some branches are options to removing the entire tree. In addition to incorporating existing trees into the landscaping, high quality native tree species are proposed for supplemental planting throughout the development site. Unless damaged trees are a

danger to the theme park visitors; snags, dead limbs, or other potential roosting habitat will be allowed to remain until they no longer provide potential bat habitat.

As was previously presented, development of the site has been focused on a compact central development area that minimizes impacts to large portions of the site. This ensures that connectivity of habitat is preserved including hedgerows, stream corridors, tree lines, and allows for connectivity to densely wooded areas on both east and west sides of the site. The on-site utility alignment may also provide a valuable upland travel corridor for bats through the site. Maintaining habitat connectivity, especially along the sites riparian corridors, allows bats to move through the property and provides access to the large emergent aquatic habitats that may support concentrated insect diversity and density.

As noted above, the applicant proposes to plant certain native species of trees as mitigation for the loss of wooded areas, which include 50 shagbark hickory, Red Maple, White Oak and Pin Oak trees that would provide additional wooded areas, and result in an additional acre of wooded area. An extensive Landscaping Plan prepared for the project proposes native and ornamental tree and shrub plantings to enhance the developed portions of the site.

All the measures outlined above are anticipated to minimize the project's impacts to any potential bat species that may utilize the site during the active bat maternity and foraging seasons.

Birds

EcolSciences evaluated on-site habitats for all State endangered, threatened, and special concern birds recorded in Orange County from 2000 to 2005 according to *The Second Atlas of Breeding Birds in New York State* (see table below). Both Table 2 in Attachment D and the text of the report (pages 14-16) briefly summarize the potential utility of the on-site vegetative communities as breeding habitat for the single endangered, four threatened, and fourteen special concern birds that met the above criteria. While no survey of State-listed birds was conducted, EcolSciences accumulated a list of over fifty species observed on-site during the breeding season, including the special concern Cooper's hawk (see Table 1 of Attachment D of DEIS).

Evaluated State-listed Birds

Peregrine Falcon	<i>Falco peregrinus</i>	Endangered
Pied-billed Grebe	<i>Podilymbus podiceps</i>	Threatened
Northern Harrier	<i>Circus cyaneus</i>	Threatened
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Threatened
Upland Sandpiper	<i>Bartramia longicauda</i>	Threatened
American Bittern	<i>Botaurus lentiginosus</i>	Special Concern
Sharp-shinned Hawk	<i>Accipiter striatus</i>	Special Concern
Cooper's Hawk	<i>Accipiter cooperii</i>	Special Concern
Northern Goshawk	<i>Accipiter gentilis</i>	Special Concern
Red-shouldered Hawk	<i>Buteo lineatus</i>	Special Concern
Osprey	<i>Pandion haliaetus</i>	Special Concern
Whip-poor-will	<i>Antrostomus vociferous</i>	Special Concern
Common Nighthawk	<i>Chordeiles minor</i>	Special Concern
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Special Concern
Horned Lark	<i>Eremophila alpestris</i>	Special Concern
Cerulean Warbler	<i>Setophaga cerulean</i>	Special Concern
Golden-winged Warbler	<i>Vermivora chrysoptera</i>	Special Concern
Yellow-breasted Chat	<i>Icteria virens</i>	Special Concern
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	Special Concern

On-site vegetative communities were determined to potentially provide breeding habitat for up to ten State-listed birds (sharp-shinned hawk, Cooper's hawk, northern goshawk, red-shouldered hawk, whip-poor-will, red-headed woodpecker, cerulean warbler, golden-winged warbler, yellow-breasted chat, and grasshopper sparrow).

Each of the four hawks, whip-poor-will, red-headed woodpecker, and cerulean warbler are all associated with wooded habitats. EcolSciences observed an adult Cooper's hawk on-site during the breeding season, indicating its territory extends onto the site. Based on the distribution maps provided in *The Second Atlas of Breeding Birds in New York State*, Cooper's hawk is the most common of the four raptors listed above in Orange County. It has greatly expanded its numbers and range since the first breeding bird atlas conducted in the 1980's. As previously stated, 347- of the 507.43- acre project site is wooded. A total of 96.9- wooded acres are proposed for clearing, leaving 250- wooded acres post-

development. All proposed woodland clearing would occur during the non-breeding season.

Golden-winged warbler and yellow-breasted chat are associated with successional habitats. Much of the north central portion of the site consists of successional field and scrub-shrub habitats. Proposed plans indicate development would occupy this portion of the site. Some successional field and scrub-shrub habitat would remain in the southwest quarter of the site and on the overhead transmission right-of-way that bisects the site.

Grasshopper sparrow is an obligate grassland bird occurring in extensive grasslands largely unencumbered by woody vegetation. One area of potential habitat was identified, an approximately 20-acre field that lies beyond the terminus of Harriman Drive. While grasshopper sparrow was not found here, another obligate grassland bird, bobolink (*Dolichonyx oryzivorus*), was confirmed nesting here. Much of the field will be cleared as development. It is unlikely any remaining portion of the field will continue to serve as potential habitat for obligate grassland birds.

EcolSciences determined that potentially suitable nesting habitat does not exist on-site for the nine-remaining species in the table above (pied-billed grebe, American bittern, osprey, bald eagle, northern harrier, upland sandpiper, common nighthawk, peregrine falcon, and horned lark).

Comments from NYSDEC indicate that there is a breeding occurrence of the State-threatened least bittern (*Ixobrychus exilis*) in Orange County. The nearest breeding records according to *The Second Atlas of Breeding Birds in New York State* are associated with Bashakill Marsh in Sullivan County. The NYSDEC characterizes Bashakill Marsh as the largest freshwater wetland in southeastern New York. According to Cornell's Birds of North America (BNA), nesting least bittern is associated with freshwater and brackish marshes with tall emergent vegetation, some woody plants, and open water. The BNA account cites a study that most frequently found this species in wetlands greater than 5 hectares. While appropriate cover exists in on-site emergent wetlands south of Harriman Drive and along Otter Creek, it is unlikely these wetlands, at approximately 3 and 4 hectares respectively, have the appropriate area to accommodate nesting least bittern.

Special Concern Species

The NYSDEC letter expressed several concerns regarding Article 11, Title 5, Threatened and Endangered Species. Of significant concern, was the need to address other wildlife species on-site particularly Species of Special Concern. Based on the species identified in the NYSDEC review letter, additional discussion is therefore provided herein for eastern box turtle (*Terrapene carolina*), wood turtle (*Glyptemys insculpta*), spotted turtle (*Clemmys guttata*) northern two-lined salamander (*Eurycea bislineata*), Jefferson salamander (*Ambystoma jeffersonianum*), blue-spotted salamander (*Ambystoma laterale*), small-footed bat (*Myotis leibii*), and Cooper's hawk (*Accipiter cooperii*). It should be noted that two-lined salamander is not a Species of Special Concern in New York, but has been addressed as requested.

Eastern Box Turtle - The eastern box turtle is New York State's most terrestrial turtle. The species is most commonly found within southern New York along in the Hudson River Valley ecosystem. The species can utilize a variety of habitats and is generally described as a habitat generalist since it can move seamlessly between forest, field, and wetlands. Box turtles are often found within utility Right-of-Ways (ROWS) where these open environments provide basking and nest site opportunities. However, box turtle home ranges are often very small, sometimes described as the size of a football field. Therefore, unlike many species which can easily migrate away from habitat disturbances, box turtles will often remain in the same small core habitats they are familiar with. Box turtle can forage on worms, slugs, wild strawberries, and mushrooms. They are diurnal (active during the day) and tend to burrow into shallow soil or leaf litter at night. In periods of drought, they may move to wetlands and damp muddy areas along shallow streams.

Within the NYSDEC comment letter it was noted that box turtles had been reported within the proposed development area. Since the site includes the juxtaposition of forest, stream, and successional fields along a major utility ROW, the presence of box turtles within the development area is not unexpected. Since box turtle home ranges are generally small, it is possible that portions of the turtle range may overlap with construction. Measures that can be implemented to minimize disturbances to box turtles include installing silt fences around active construction to exclude turtles. Prior to construction, the fenced areas will be searched by qualified herpetologists to ensure that no turtles have been enclosed by the fencing. All turtles, and other wildlife species, will be removed from the fenced development areas. To ensure turtles do not re-enter the construction site, turtle monitors may be deployed during the box turtle active season, to inspect the silt fencing, and remove turtles and other wildlife species encountered from

roads and construction areas. For turtles that are found on numerous occasions, attaching external radio transmitters to their shells will allow the turtles to be tracked via radio telemetry. Radio tracking turtles allows the location of the turtles to be known at all times, making them easier to find and relocate as construction activities expand through the site. Relocation of turtles to other sites has been met with limited success. However, with this project focusing on a small portion of the overall potential habitat, protecting the turtles during construction and allowing them to become familiar with alternative habitats outside the construction area will likely result in less human/ turtle impacts following construction.

Wood turtle - Wood turtles are a medium-sized turtle that utilizes upland, wetlands, and stream habitats. During the winter hibernation, early spring/late fall mating, and summer egg laying, wood turtles are closely associated with stream channels. Wood turtle hibernate under the banks and along the bottoms of clear, clean, stream channels. Since the wood turtles rely on oxygenated flowing water, perennial streams channels with pools and riffles in excess of two feet in depth are necessary to avoid the stream from freezing solid. During the late spring and summer, female turtles may migrate several thousand feet from the stream channel to utilize successional fields, forests, and ROWs for foraging. Males and juvenile turtles generally stay within 500 feet of their hibernation stream and tributaries but can range several miles along the channel. Wood turtles eat slugs, worms, snails, insects, and amphibians although they do also consume mushrooms and vegetation. Wood turtles are generally diurnal, and can often be found basking for extensive periods along their stream channels in the early spring. At night, they may spend the overnight in the stream, under streambanks, in shallow forms in the uplands and wetlands, or hidden at the base of a shrub.

The dependence of wood turtles for winter hibernation in perennial streams with consistent water depth to avoid freezing solid in the winter significantly limits not only the development portion of the site, but the entire property, to be classified as potential wood turtle habitat. Only the lower portions of Otter Creek appear to meet the definition of a perennial stream and the ditched nature of that stream limits the potential for riffles and pools and undercut banks, commonly utilized by wood turtles. Although wood turtles have the ability to migrate long distance along a stream corridor, that would require them crossing under Route 17 and Route 6. If they successfully negotiate this route they would arrive within the extensive NYSDEC wetland GO-41, completely located within a conservation easement never to be developed. Therefore, wood turtles are not anticipated to be impacted by the proposed development. However, the

implementation of above-described project limiting fences and utilization of turtle monitors and/or telemetry would ensure that no wood turtles are directly impacted during construction.

Spotted turtle - The semi-aquatic spotted turtle is an opportunistic species that utilizes ponded wetlands, shallow ponds and vernal habitats for overwintering, foraging and mating; but can also utilize man-made ditches, and uplands as it travels between its preferred wetland habitats or as the wetland habitats dry in the summer. Spotted turtles are very active early in the season and more likely to estivate as wetlands dry and summer temperatures rise. Foraging occurs mainly in water or wetlands for slugs, amphibian egg masses, snails, crustaceans, and aquatic insects. Nest sites are generally within the wetlands on raised hummocks or damp mossy knolls. Hibernation is within the wetlands in areas of spring fed rivulets along shallow shrub roots or under hummock vegetation.

Based on site conditions, spotted turtles likely occur within the Harriman Road impoundment, the emergent wetlands along Otter Creek, and within and along the Gumwood Drive swale. Due to the intermittent nature of the on-site stream channels, it is unlikely spotted turtles follow these corridors to move between critical habitats except early in the spring when water is flowing. It is anticipated that there are no direct construction impacts to this species since they will largely be located within the wetlands and small impoundments associated with lands not proposed for development and/or proposed for conservation.

Northern Two-Lined Salamander - Unlike the other species listed in the NYSDEC letter, the northern two-lined salamander is not a species of species concern in New York. The salamander is known from clear running stream habitats throughout the State. Juvenile salamanders remain aquatic for several years and require year-round flowing water to survive. Adults may be located immediately along the stream edge but can also range into the mesic forest floor. Northern two-lined salamanders feed on aquatic insects, arthropods, worms, and small mollusks. The focus of development away from on-site stream corridors and adjacent woodland forest and wetlands will likely protect potential northern two-lined salamander habitat located on-site.

Jefferson Salamander and Blue-Spotted Salamander - These two-special concern “mole” salamanders share a similar habitat criteria: they are strongly associated with vernal habitats – small, generally isolated, water-filled wetland depressions that are fish-

free. On occasions, they may also utilize man-made ditches, excavated depressions, mine shafts and puddles that form in woods/farm roads. The term mole salamander refers to the fact that the bulk of their lifespan is spent in underground tunnels where they forage for insects, spiders, and other small subterranean species. In late winter to early spring, the adults move to their breeding pools where they mate and lay their eggs. Following mating, the adults return to their subterranean tunnels which can be located as far as 1,000 feet from the breeding pools. The eggs hatch and larvae salamanders develop within the pool. If the pool does not dry too fast, the larvae metamorph to adults in the early summer and move to the adjacent woodlands to continue their lifecycle.

No vernal habitat surveys were conducted on-site due to the unusual drought conditions observed in the summer of 2016. However, based on visual review of the on-site wetlands no potential vernal habitats exist within the areas proposed for development. Potential wetland depressions on the upper stretches of the tributaries to the Otter Creek may exhibit sufficient water depths to support breeding populations. However, these wetlands are located in the southernmost portion of the site, outside of the proposed development area, and within areas proposed for conservation. During an early April 2017 site investigation, the roadside wetland ditches identified along Harriman Road were largely found not to include any standing water. The small pockets of observed stagnant water was shallow and likely not retain sufficient water. No vernal pool dependent species or evidence of breeding (spermatophores, egg masses, larvae) was observed.

Small-footed Myotis (bat) - Small-footed bat is the smallest *Myotis* bat species within New York. However, its habitat preferences vary from the other *Myotis* (little brown bat, northern long-eared bat, and Indiana bat) in that it prefers roosting in cracks and crevices along talus ridges, rocky slopes and man-made rock based structures such as dams, wells, and buildings, to trees. Studies have identified small-footed bats generally at higher elevation associated with exposed rocky terrain. Also unlike the other *Myotis*, small-footed bats are largely solitary, hibernating singularly and using solitary roosts. Although small-footed bats may be found hibernating in caves and mines, it is also believed that they can hibernate in the same rocky areas they use as summer habitat.

The project site and development area does not provide potential critical habitat for small-footed bats. The site does not include ridgetops, exposed rock talus, or other rock features. There are no old rock structures on the site that would be attractive alternative roost areas. The site's elevation is much lower than some nearby features, like the

Appalachian Ridge, Goosepond Mountain Park, and Sterling Forest, all of which are known for their rock outcrops and ledges. In the absence of appropriate habitat, no impacts are anticipated to small-footed bats by the proposed development.

Section III, Part D, subpart 3. Proposed Mitigation Measures

As noted by NYSDEC, the applicant proposes time of year restrictions to tree clearing. In addition, the development plan proposes preserving on-site wetlands and adjacent areas with conservation easements, providing open-bottom box culverts along stream channels to allow for fish and amphibian movement, and using dark sky lighting to minimize light pollution impacts to adjacent habitats that are not proposed for development.

As previously summarized, the applicant proposes silt fencing to limit wildlife access into active construction areas. In addition, prior to initiating construction, the areas within the fencing will be searched by qualified herpetologists to remove all small wildlife species encountered. Species will be relocated outside of the silt fence but not move further than 200 feet from the fence to ensure minimal disturbance. If determined to be necessary, telemetry on resident box turtles will ensure they are protected throughout the construction process. Replanting of trees and shrubs will be focused on native species with high wildlife value to encourage continued wildlife use of the area following the completion of construction.

Section III, Part D, subpart 1 Existing Conditions (p. 44) – paragraph 2

The statement regarding the New York Natural Heritage Program (NYNHP) was not meant to imply that the NYNHP has data on all New York's flora and fauna. It was meant to indicate that a very important source for data pertaining to rare, threatened and endangered species data had been reviewed as part of the threatened and endangered species assessment conducted on the site. The summary statement in that same paragraph confirmed that *the NYNHP did not have records for any rare species or habitats on or adjacent to the site.*

Section III, Part D, subpart 1 Existing Conditions (p. 45) – paragraph 2

The comment regarding Gumwood swale not being identified as threatened or endangered species habitat was made because of NYSDEC procedure for classifying

State wetlands. According to 6 CRR-NY 664.5, a Class 1 wetland can result if the wetland *is resident habitat of an endangered or threatened animal species (664.6[c][2] and [4]*. Since DEC wetland GO-41 has been classified as a Class 2 wetland, this classification implies that there were no records for threatened or endangered species residing within the mapped wetland. For comparison, Glenmere Lake (DEC wetland WR-15) is a Class 1 wetland and was the location of the known population of the State endangered northern cricket frog.

Section III, Part D, subpart 1 Existing Conditions (page 45) – paragraph 2

This comment discussed the characteristics of wetlands along Harriman Road Pond. It was a statement of fact that common calciphiles were not identified within the wetland. However, the sentence acknowledged that the vegetative species identified within the area “*can be associated with disturbed potential bog turtle habitat*”. But the determination that this wetland was not habitat was not based on the absence of calciphiles. It was the absence of two critical bog turtle habitat indicators; mucky/muck-like soils, and shallow rivulets, and surface water hydrology that formed the conclusion that the wetland was not potential bog turtle habitat.

Carpenter Environmental Associates, Inc. memorandum of December 15, 2016

Carpenter Environmental Associates requested that the DEIS include a discussion of fish/benthic populations and the potential for impacts to receiving waters of the United States. During the summer surveys, as noted in the habitat assessment, most of the on-site streams were dry. Water was observed in the mapped impoundments, Gumwood swale, and lower channel of Otter Creek. Therefore, all these areas have the potential to provide year-round habitat for fish and benthic organisms. A field investigation conducted in January 2017 found that most of the remaining channels were now flowing following a period of normal rainfall and snow melt. The intermittent flow path of the on-site streams significantly limits their potential as fish habitat and limits the streams ability to support other benthic species. However, no surveys have been conducted. It should also be noted that due to erosional changes in the channel of the northwestern stream, there is no channel connection between the wetland below the paved driveway and the stream channel located west of the paved driveway. The existing culvert is not functional and water flows along the driveway prior to entering the wetland. This disconnect in the stream channel effectively eliminates fish use of the upper channel.

Based on the location of the project, direct water quality impacts from the proposed development to on-site surface water has been minimized by designing the development to avoid most on-site wetlands and waters. In areas of culverted stream crossings, all runoff from paved surfaces is directed to on-site detention/retention ponds that are proposed to address water quality. If these features are maintained as open water ponds, the applicant will avoid the use of chemicals such as copper sulfate that may impact wildlife, including bats that may utilize the ponds for drinking water or foraging.

Overall proposed stormwater management include 23 total stormwater management areas. Stormwater water quality treatment proposed by the development includes seven (7) sand filters, 14 bio-retention areas, and dry swales. It is anticipated that these water quality treatments can reduce or slow the release of road salt, fuel oils and pesticides prior to discharge into wetlands or waters. A stormwater pond is proposed to provide water quantity control for the project but also allows sediment such as road salts or other debris to settle prior to discharge of stormwater into the watershed.

As discussed in the DEIS, the applicant has designed the project with light fixtures designed as “dark sky friendly” with shields to prevent light spillage into adjacent undisturbed areas. Lights associated with the Theme Park will shut down at night after the Park closes. Low level security lighting for the park, hotel, and offices will remain on for safety. In terms of impacts to bats, nighttime lighting is extremely attractive to insects, especially moths, a prime source of protein for many bat species. However, high light levels influence when a bat will emerge. Brighter lights (metal halide and mercury vapor) may prevent bats emerging following sunset. Low level lights (high and low pressure sodium) minimize attraction for insects and minimize influence on bat behavior. In the case of the project, LED lighting is proposed. Recent studies have found that LED lighting does influence bat activity in urban areas, where conventional streetlights were replaced with LED lights. The LED lighting is not attractive to insects, therefore bat foraging at streetlights was reduced. However, the LED lighting was also found to have a reduced aversion by light sensitive bat species. Therefore, the use of LED lighting in the Park will likely not attract bats into the developed areas, but should also not negatively impact their current foraging patterns. LED lighting, in addition to shields and shutting lights off in the Theme Park will minimize impacts to nighttime bat foraging activities.

PROPOSED HIGHWAY 17 INTERCHANGE

As currently proposed, the access to the project will be from a new connector interchange directly to Highway 17 with access to Harriman Drive. Creation of the interchange will result in creating access ramps to and from the Highway, resulting in increased road widths for entering and egressing traffic. Minor road expansion of Harriman Drive will also be required.

Independent of the project, the new traffic pattern will result in minor encroachments to wetlands and uplands both within the project site itself and off-site. These impacts include 1.331-acres of Corps regulated wetlands and 0.407-acres of NYSDEC regulated wetlands. The primary impact areas are to the existing highway drainage ditches, dominated by common reed emergent vegetation, delineated both north and south of NYS Route 17 and Harriman Drive. Site investigations of these features in the spring of 2017 indicated that the ditches are largely dry, except after heavy rain or snow melt. No evidence of amphibian or reptile use of these dry areas was expected or observed.

In one ditch located between Harriman Drive and NYS Route 17, small pockets of algae-filled, stagnant water was observed. It appears that these pockets formed due to obstruction of one or more of the culverts that would otherwise allow the water to flow into the pond located south of Harriman Road. In one of these small impoundments, several spring peepers (*Pseudacris crucifer*) were heard calling. However, due to the extensive chorus of spring peepers heard from Harriman Pond, this pool is not the primary habitat for this common frog species. No other amphibians or fish were observed in the ditch.

The proposed Interchange will also require expansion of NYS Route 17 across the Otter Kill and Otter Kill wetlands. Based on the field inspection, where this encroachment extends onto the project site, it was noted that the entire Highway frontage of the wetland was mowed. No evidence of standing water or potential cover plants was observed. Therefore, in its current condition, the wetlands do not provide potential habitat for wetland dependent species. Expansion of the existing Otter Creek open-bottom, large box culvert will avoid any obstruction to fish or amphibian species that may utilize this area.

The expansion of Harriman Road toward the large wetland associated with the Harriman Pond may impact wetland associated species. The area is largely free of standing water however, current drainage from the site discharges into a swale that flows close to

Harriman Road. No evidence of vernal habitat was observed, and no amphibian or fish species were identified within the wetlands to be disturbed during the recent site investigation. During construction, measures will be taken to fence the wetlands from the construction area. The fenced area will be screened by a qualified herpetologist to ensure no species have been entrapped within the wetlands to be impacted.

As proposed, the project will also mitigate for all the wetland encroachments resulting from the Highway Interchange improvements with additional wetland creation on-site. The applicant has identified $6.5 \pm$ acres of uplands on-site that can be utilized to mitigate for all wetland encroachments. Following successful creation of wetlands, the wetland mitigation areas will be added to the proposed conservation easements for future protection. In cases where the restored wetlands are associated with impacts to NYSDEC regulated wetlands, the conservation easement will also include the 100-foot adjacent area. As previously discussed, all wetland mitigation areas include restoration with native forested wetland species, including red maple and pin oak in the wetlands and supplemental shagbark hickory and white oak in the adjacent uplands, providing future potential bat habitat. Shrub species proposed in the restoration plan, including native winterberry, spicebush, and highbush blueberry, are anticipated to provide habitat for nesting birds and foraging habitat for many wildlife species.