5.0 SUBJECT PROPERTY RECONNAISSANCE

The Subject Property reconnaissance was conducted by Ms. Madeline Soule and Mr. Daniel Bellucci, EBI Field Assessors, from August 19 to 22, 2013. The EBI Field Assessors were accompanied by and interviewed Mr. Paul Palmer, the Subject Property Facility Manager, and Ms. Kathy Schibanoff, the Project Coordinator.

5.1 METHODOLOGY AND LIMITING CONDITIONS

The Subject Property reconnaissance consisted of visual and/or physical observations of the Subject Property and improvements, adjoining properties as viewed from the Subject Property boundaries, and the surrounding area based on visual observations made from adjacent public thoroughfares. Unimproved portions of the Subject Property were observed along the perimeter and in a general grid pattern in safely accessible areas. Building exteriors were observed along the perimeter from the ground, unless described otherwise. Building interiors were observed as they were made safely accessible, unless described otherwise.

At the time of the survey, the weather was mostly sunny and approximately 80° Fahrenheit. During the survey, representative tenant spaces, mechanical spaces, and/or equipment components were observed. EBI was not provided with access to the basement of Buildings 66, 109, 54, 57, 81, 13, 33, 18, 118, 94, 95, 46, 27, 67, 68, 69, 91, 92 and 93 due to safety concerns. The majority of the buildings where interior access was unavailable were staff residences that have been structurally compromised. Note that dense vegetation and ground cover precluded comprehensive visual examination of the ground surface in the vicinity of the known Dump sites. There were no other significant portions of the Subject Property that were inaccessible or excluded from this survey.

5.2 HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS

5.2.1 Hazardous Substances and Petroleum Products (Identified Uses)

Notable hazardous substances or petroleum products in connection with identified uses observed at the Subject Property are described below.

HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS			
Location	**General Type of Material**	**Approximate Quantity / Container / Material**	**Storage Condition**
Building 34 (Power Plant)	Lubricating Oil	(8) 55-gallon drums of lubrication oil 20-gallon oil reservoir for machine shop	Poor: Pooling/staining observed in the vicinity of the 55-gallon drums
	New Oil	(6) 55-gallon drums in repair garage	Poor: Pooling/staining observed in the vicinity of the 55-gallon drums
	Compressed gas cylinders	(2) 30-gallon cylinders	Fair
	Furnace cement	(2) 55-gallon drums	Fair
	Paints	(5) 5-gallon containers	Fair
	Cleaning products	Various sized containers up to 5-gallons	Fair
	Batteries	~20 Batteries	Good

HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS			
Location	**General Type of Material**	**Approximate Quantity / Container / Material**	**Storage Condition**
Building 19	Corrosive Materials	Various sized containers up to 5-gallons	Fair
Building 31	Paint and Epoxy	Various sized containers up to 5-gallons	Poor: Fluorescent sheen noted in pooled water in basement
Building 11	Paint and cleaning products	Various sized containers up to 5-gallons	Fair
Building 5 (DFY Power Plant)	Water treatment chemicals, diesel fuel, oil lubricants, paints, cleaners	(6) 55-gallon drums water treatment chemicals (1) 55-gallon drum engine lubricant (1) 30-gallon drum engine lubricant (1) 5-gallon diesel fuel can (1) 5-gallon No. 2 fuel oil can (2) 5-gallon paint containers Cleaners in various sized containers up to 5-gallons	Fair
Building 2	Cleaning products and paint	~(40) 1-gallon paint and enamel containers (2) 5-gallon semi-gloss containers (8) 4-6-gallon cleaning product containers	Fair
Building 3	Cleaning products	~(50) 1-gallon cleaning product containers	Fair
Building 35 (Smith Hall)	Projector lubrication oils, compressed gas	Several 1-gallon containers projector lubrication oil (3) Compressed gas cylinders	Fair
Building 85	Oil	(1) 5-gallon oil container	Fair
Building 70 (Drinking Water Treatment)	Water treatment chemicals, laboratory chemicals, cleaning products	(5) 55-gallon drums water treatment chemicals (10) 10-30-gallon totes water treatment chemicals Various sized laboratory chemical and cleaning product containers	Fair
Building 10	Gasoline and compressed propane	(2) 2-3-gallon gasoline containers (2) 20-30-gallon propane cylinders	Fair
Building 21	Cleaning products and pain	Cleaners and paints in various sized containers up to 1-gallon	Fair
Building 22	Dry chemicals	Multiple 50-pound bags of aluminum sulfate and activated carbon	Poor: Spilling observed

HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS			
Location	**General Type of Material**	**Approximate Quantity / Container / Material**	**Storage Condition**
Building 61 and 61A (Golf Course Maintenance)	Pesticides, herbicides, gasoline, oil	(1) 55-gallon drum pesticide Various sized containers containing oil and gasoline up to 5-gallons in size	Fair
Building 63 (Waste Water Treatment Plant)	Water treatment chemicals	(4) 55-gallon drums unlabeled water treatment chemicals	Fair
Building 59	Oil	(1) 5-gallon container of oil	Fair
Building 60	Compressed gas	(2) Compressed gas containers	Good
Building 56	Oil, water treatment chemicals, grease dispersant	(1) 55-gallon drum of lubrication oil (2) 55-gallon drums of oil (2) 50-gallon drums of water softener (1) pint of grease dispersant	Poor to fair: Rusting noted on several drums
Building 103	Oil	(5-8) 55-gallon drums of oil	Poor: Rusting and some staining noted

EBI did observed evidence of leaks, spills, or the improper handling of petroleum or hazardous substances that might impact the environmental condition of the Subject Property. In particular, EBI observed evidence of petroleum releases or the threat of releases from various sized containers in Buildings 34, 31, 56 and 103. General poor housekeeping conditions were observed throughout the Subject Property concerning the storage and handling of hazardous substances and petroleum products.

5.2.2 Hazardous Substances and Petroleum Products (Unidentified Uses)

EBI did no observe evidence of hazardous substance or petroleum products containers at the Subject Property that were not in connection with identified uses.

5.2.3 Unidentified Substances Containers

EBI observed various sized unlabeled drums and containers throughout the Subject Property. These containers were observed to be in poor to fair condition, with some leaking and the potential for leaking noted.

5.3 Waste Generation, Storage, and Disposal

EBI identified the following waste streams generated at the Subject Property:

WASTE GENERATION, STORAGE, AND DISPOSAL			
Classification	**Type of Waste / Generation Process**	**Type of Storage / Location**	**Disposal Method / Contractor**
Non-regulated Solid Waste	Municipal Solid Waste / Routine Site Operations	1 Solid Waste Dumpster (Parking Lot of Building 60)	Welsh Sanitation Services
Non-regulated Liquid Waste	Sanitary Sewage / Routine Site Operations	Onsite Wastewater/Stormwater	Discharge to Swamp River / Severn and Trent

WASTE GENERATION, STORAGE, AND DISPOSAL			
Classification	**Type of Waste / Generation Process**	**Type of Storage / Location**	**Disposal Method / Contractor**
		treatment and discharge	Environmental Services O&M
Regulated Solid or Liquid Waste	None identified	NA	NA
Biomedical Waste	None identified	NA	NA

Evidence of improper solid waste management or the improper disposal of hazardous substances or petroleum products was observed at the time of reconnaissance in the vacant portions of the Subject Property. Hazardous materials and petroleum products were not properly disposed of in many of the Subject Property buildings prior to the closing of the facility in 1994. No evidence of improper waste management or the improper disposal of hazardous substances or petroleum products was observed in the occupied portions of the Subject Property (Golf course, manor house water and wastewater buildings).

5.4 UNDERGROUND STORAGE TANKS (USTs) & ABOVEGROUND STORAGE TANKS (ASTs)

Based upon site reconnaissance, interviews, and a review of state and local records, EBI identified existing underground storage tanks (USTs) and aboveground storage tanks (ASTs) located at the Subject Property, as well as former underground storage tanks (USTs) and aboveground storage tanks (ASTs) which had previously existed at the Subject Property. A full list of Remaining and Removed Former Underground and Aboveground Storage Tanks at the Subject Property is included in the tables below:

5.4.1 Existing Underground Storage Tanks

Based upon site reconnaissance, interviews, and a review of state and local records, EBI identified the following USTs located at the Subject Property.

Existing Underground Storage Tanks							
Location (Building #)	**Tank #**	**Capacity**	**Tank Type**	**Contents**	**Status**	**Install date**	**Vent/fill pipes observed**
64	641	1500	UST	#2 Fuel Oil	In Use		x
46	461	1000	UST	#2 Fuel Oil	Out of Service		x
53	531	1000	UST	#2 Fuel Oil	Out of Service		x
59	591	1500	UST	#2 Fuel Oil	Out of Service		x
70	741	2000	UST	#2 Fuel Oil	Out of Service		x
107	1071	Unk	UST	#2 Fuel Oil	Out of Service		x
5A	1	20000	UST	#2 Fuel Oil	Out of Service	10/1/1994	x
5A	2	20000	UST	#2 Fuel Oil	Out of Service - breached ground	10/1/1994	x
34	346	Unk	UST	Hydraulic	Unknown		
34	347	Unk	UST	Hydraulic	Unknown		
34	348	Unk	UST	Hydraulic	Unknown		
34	349	Unk	UST	Hydraulic	Unknown		
34	3410	Unk	UST	Hydraulic	Unknown		
34	3411	Unk	UST	Hydraulic	Unknown		

85	-	Unk	UST	Propane	Unknown		
55-56	-	10,000	UST	Septic	Unknown		

EBI identified eight (8) existing USTs, one (1) of which is currently in use. One (1) 1,500-gallon No. 2 fuel oil UST actively serves the wastewater treatment plant (Building 64). The remaining seven (7) USTs currently located at the Subject Property are no longer in service and the petroleum contents of each have reportedly been removed. In addition, EBI identified six (6) USTs containing hydraulic oil located in the garage area of Building 34, which have reportedly been removed. However, based on reports from onsite personnel and field observations made during EBI's site visit, the removal status of the six (6) hydraulic USTs is unknown. The presence of an active UST, seven (7) inactive USTs and six (6) potential hydraulic USTs represents a *recognized environmental condition* at the Subject Property.

A previous environmental report (detailed in Section 4.3.8) indicated the potential presence of an underground propane storage tank to the southeast of Building 85, based on observance of piping and a flow valve. EBI did not observe this piping, and the status of a potential propane UST is unknown. Additionally, a 10,000-gallon septic tank was reportedly identified east of Buildings 55 and 56. The potential presence of these two tanks is not anticipated to have adversely impacted the Subject Property.

5.4.2 Existing Aboveground Storage Tanks

Based upon site reconnaissance, interviews, and a review of state and local records, EBI identified the following ASTs located at the Subject Property.

Existing Aboveground Storage Tanks							
Location (Building #)	**Tank #**	**Capacity (gallons)**	**Tank Type**	**Contents**	**Status**	**Install date**	**Observed**
39	392	330	AST	#2 Fuel Oil	Active	2003	x
39	393	330	AST	#2 Fuel Oil	Active	2003	x
60	601	275	AST	#2 Fuel Oil	Active		x
61	611	275	AST	Gasoline	Active		x
61	612	275	AST	Diesel Fuel	Active		x
30	301	4000	AST	#2 Fuel Oil	Out of Service		x
31	311	4000	AST	#2 Fuel Oil	Out of Service		x
32	321	4000	AST	#2 Fuel Oil	Out of Service		x
19	3	4000	AST	#2 Fuel Oil	Out of Service	10/1/1994	x
34	4	2000	AST	#2 Fuel Oil	Out of Service	10/1/1994	x
10	5	1000	AST	Gasoline	Out of Service	6/1/1995	x
10	6	500	AST	Diesel Fuel	Out of Service	6/1/1995	x
10	101	275	AST	Empty	Out of Service		x
20	201	4000	AST	#2 Fuel Oil	Out of Service		x
34	344	8000	AST	Diesel Fuel	Out of Service	1990	x
34	345	275	AST	Motor/waste oil	Out of Service		x
74	-	1,000,000	AST	Potable Water	In Use		x

EBI identified 16 existing ASTs, five (5) of which are reportedly currently in use. Two (2) 330-gallon in-use No. 2 fuel oil ASTs are located in the basement of the Manor House (Building 39). The ASTs were observed to be in good condition with no leaks or staining noted. One (1) 275-gallon No. 2 fuel oil AST is located adjacent to the eastern façade of the golf course club house (Building 60). The AST was observed to be in fair condition. Speedy-dry was noted at the base of the AST underneath the oil filter. One (1) 275-gallon diesel and one (1) 275-gallon gasoline AST are located adjacent to the southern façade of the golf course maintenance shop (Building 61). The diesel fuel AST was observed to be in fair condition, with some stained soil and stressed vegetation observed in the vicinity of the AST. The staining and stressed vegetation is most likely a result of repeated overfills of machinery, and not likely indicative of a release from the AST. The gasoline AST located at Building 61 was enclosed, preventing thorough observation of the tank.

Eleven out of service ASTs are currently located at the Subject Property. The petroleum contents of the out of service ASTs have reportedly been removed. The inactive ASTs were observed to be in good condition, with the exception of the 275-gallon waste oil AST located in the garage area of Building 34. Petroleum staining and pooling on the floor area in the vicinity of the AST was observed during EBI's field reconnaissance. It was unclear whether the source of the staining and pooling was the AST or 55-gallon drums of oil located in the vicinity of the AST.

Additionally, a potable water storage tank, reported to have a one million gallon capacity, is located near the drinking water treatment plant (Building 74).

5.4.3 Former Underground Storage Tanks

Based upon site reconnaissance, interviews, and a review of state and local records, EBI identified the following former UST located at the Subject Property.

Former Underground Storage Tanks						
Location (Building #)	**Tank #**	**Capacity**	**Tank Type**	**Contents**	**Status**	**Install date**
34	343	500	UST	Gasoline	Removed 1991	Unknown
56	561	1500	UST	#2 Fuel Oil	Removed 1991	Unknown
34	341	2000	UST	Gasoline	Removed 1997	Unknown
34	342	5000	UST	Gasoline	Removed 1997	Unknown
13	131	1000	UST	#2 Fuel Oil	Removed 2000	Unknown
37	371	500	UST	#2 Fuel Oil	Removed 2000	Unknown
38	381	500	UST	#2 Fuel Oil	Removed 2000	Unknown
39	391	1000	UST	#2 Fuel Oil	Removed 2000	Unknown
54	541	550	UST	#2 Fuel Oil	Removed 2000	Unknown
67	671	2000	UST	#2 Fuel Oil	Removed 2000	Unknown
67	672	1000	UST	#2 Fuel Oil	Removed 2000	Unknown
68	681	500	UST	#2 Fuel Oil	Removed 2000	Unknown
85	851	2000	UST	#2 Fuel Oil	Removed 2000	Unknown

EBI identified 13 removed former USTs at the Subject Property. These tanks have reportedly been removed, based on information from previous reports, the NYSDEC Petroleum Bulk Storage (PBS) database and reports from onsite personnel. No closure reports were identified for these UST

removals, however, based on the lack of open regulatory listings regarding these USTs these former tanks do not appear to represent an environmental concern to the Subject Property.

5.4.4 Former Aboveground Storage Tanks

Based upon site reconnaissance, interviews, and a review of state and local records, EBI identified the following former ASTs located at the Subject Property.

Former Aboveground Storage Tanks						
Location (Building #)	**Tank #**	**Capacity (gallons)**	**Tank Type**	**Contents**	**Status**	**Install date**
34	7	1000	AST	Diesel Fuel	Removed	11/1/1999
7	71	275	AST	#2 Fuel Oil	Removed in 2000	Unknown
8	81	275	AST	#2 Fuel Oil	Removed in 2000	Unknown
9	91	275	AST	#2 Fuel Oil	Removed in 2000	Unknown
36	361	275	AST	#2 Fuel Oil	Removed in 2000	Unknown
91	911	276	AST	#2 Fuel Oil	Removed in 2000	Unknown
92	921	277	AST	#2 Fuel Oil	Removed in 2000	Unknown
93	931	278	AST	#2 Fuel Oil	Removed in 2000	Unknown
94	941	279	AST	#2 Fuel Oil	Removed in 2000	Unknown
95	951	280	AST	#2 Fuel Oil	Removed in 2000	Unknown

EBI identified 10 removed former ASTs at the Subject Property. Nine (9) of the 10 ASTs contained No. 2 fuel oil and were removed circa 2000. No evidence of adverse environmental conditions associated with the removed ASTs was observed during EBI's site reconnaissance. Former ASTs are not considered to represent an environmental concern at the Subject Property, based on lack of evidence of release from these former tanks.

5.5 OIL-CONTAINING EQUIPMENT AND POLYCHLORINATED BIPHENYLS (PCBs)

Polychlorinated biphenyls (PCBs) are a chemical component of many dielectric fluids, heat transfer fluids, hydraulic fluids, lubricating oils, paints, or coatings manufactured prior to July 2, 1979. Equipment that may potentially contain PCBs includes electrical equipment such as transformers or capacitors or hydraulically operated equipment, such as elevators, compaction equipment, or manufacturing equipment. The manufacture and distribution in commerce of PCBs was banned for use in 1979 by the United States Congress, which enacted the Toxic Substance and Control Act (TSCA). In accordance with *US Code of Federal Regulations Title 40 - Protection of Environment, Chapter I - Environmental Protection Agency, Subchapter R - Toxic Substance Control Act (TSCA), Part 761 - Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions*, the owner of a transformer or other PCB-containing equipment is responsible for equipment maintenance and remediation in the event of a leak or release.

The following oil-containing equipment was identified at the Subject Property:

OIL-CONTAINING EQUIPMENT			
Classification	**Type of Equipment**	**Year Installed / Location**	**Staining / Releases Identified**
Transformers and Fluid-Containing	Approximately (5) pad-mounted Electrical	NA / Adjacent to Buildings 34, 27, 25, 2 and	No

OIL-CONTAINING EQUIPMENT			
Classification	**Type of Equipment**	**Year Installed / Location**	**Staining / Releases Identified**
Electrical Equipment	Transformer. Placarded with blue Non-PCB labels.	59	
	Approximately (8) Pole-mounted electrical transformers	NA / Located throughout the Subject Property	No
	(5) Active pad-mounted transformers owned by NYSEG	NA / South of Building 34, NYSEG Substation	No
	Approximately (5) out of service transformers	NA / Exterior west side of Building 34 and basement of Building 39	No
Hydraulic Equipment	(1) passenger elevator	Building 39 Manor House	No
	(6) Hydraulic fluid USTs	Building 34	No

According to Paul Palmer, the Property Maintenance Manger, no PCB containing transformers currently exist at the Subject Property. PCB-containing transformers were removed or replaced at the Subject Property following the closure of the facility circa 1994. However, EBI observed one (1) inactive PCB containing transformer in the water pump house (Building 59). The transformer was observed to be in good condition with no staining. No staining was observed in the vicinity of any of the remaining transformers observed at the site.

Building 34 (Power Plant), includes a former machine service area located on the northern portion of the building. According to the Freudenthal & Elkowitz Consulting Group (F&E), the garage area was formerly equipped with ten (10) hydraulic lifts and six (6) hydraulic reservoirs. Groundwater monitoring wells were observed in the interior and northern exterior portion of the Building 34 garage area. In addition, a groundwater remediation system is located in the courtyard area south of the garage area. The system is related to the NYSDEC Spill # 90129798 which was reported in 1991. According to the database listing, the spill was closed in 2009 and the remediation system and associated monitoring/extraction wells have not been properly decommissioned. EBI was not provided copies of the most recent sampling results.

5.6 ADDITIONAL SITE CONDITIONS

The following is a summary of visual and/or physical observations of the Subject Property on the day of the site visit. Photographs of pertinent Subject Property features are presented in Appendix A.

ADDITIONAL SITE CONDITIONS	
Condition	**Identified**
Interior Drains, Trenches, or Sumps	**Yes**
Interior Stains or Corrosion	**Yes**
Unusual Odors	**Yes**
Interior Pools of Liquid	**Yes**
Stained Soil or Pavement	No
Stressed Vegetation	No
Indications of Solid Waste Disposal	**Yes**
Exterior Pits, Ponds, or Lagoons	**Yes**
Wastewater or Stormwater Discharge/Disposal	**Yes**
Oil-Water Separators or Clarifiers	**Yes**

ADDITIONAL SITE CONDITIONS	
Condition	**Identified**
Septic Systems or Cesspools	No
Wells (Drinking Water Wells, Monitoring Wells, Agricultural/Irrigation Wells, or Process Water Wells)	No
Petroleum or Natural Gas Pipelines/Easements	No

INTERIOR DRAINS, TRENCHES, OR SUMPS

Floor drains were observed in the majority of the buildings at the Subject Property. The floor drains reportedly discharge to either the onsite sewer treatment system or directly to drainage swales located along State Route 22, which area tied into Swamp River. EBI observed petroleum odor and staining in the boiler room located in the basement of Building 30. The staining was observed in the vicinity of a floor drain located in the boiler room. The suction and return lines from the outside AST to the boiler were cut and most likely the cause of the leak.

INTERIOR STAINS OR CORROSION

Oil staining was observed on the concrete floor on the first floor of Building 34. Five (5) 55-gallon drums of lubrication oil in poor condition were determined to be the source of the staining and a floor drain is located in the vicinity of the spill. Additionally, oil staining was observed in the garage area of Building 34. Six (6) 55-gallon drums of drums located in the garage area are believed to be the source of the staining. Additionally, floor drains and groundwater monitoring wells are located in the immediate vicinity of the observed staining.

UNUSUAL ODORS

Petroleum odors were observed in the boiler rooms of Buildings 29 and 30 as well as in the garage and first floor area of Building 34. The odors were determined to be related to petroleum releases from damaged fuel lines and leaking 55-gallon drums of oil.

INTERIOR POOLS OF LIQUID

Several gallons of pooled oil were observed in the aforementioned garage area and first floor of Building 34. Corroded 55-gallon drums of oil were determined to be the source of the pooling. Floor drains and monitoring wells are located in the vicinity of the pooled oil.

INDICATIONS OF SOLID WASTE DISPOSAL

Four (4) landfill/dump locations have been identified on the Subject Property and one (1) dump has been identified adjacent to the Subject Property through on-site reconnaissance and review of previous reports and historical records. See Figure 3 for the locations of these landfills/dumps.

Ash landfill

A former ash landfill at the site was located to the north and south of Wheeler Road, to the west of Building 34 and Building 22. This landfill was the subject of Consent Order # R3-1520-88-05, which was served to the NYS OMH on September 9, 1991. EBI reviewed several regulatory submittals as well as department correspondence provided by the NYS DEC Solid Waste Program regarding the ash landfill and remedial actions to be performed in compliance with the Consent Order. Summaries of these reports and correspondence are included in Section 4.3.8. As is detailed in a letter dated January 5,

2001, a report titled Harlem Valley Psychiatric Center Coal Ash Removal Report was submitted to NYS DEC in December 2000, and the letter indicates that the report has been accepted by NYS DEC. The letter indicates that "Based on a file review and site inspection the DEC has determined that OMH has complied with the Consent Order schedule of compliance requirements." This letter indicates that the ash had been removed from the landfill, and no longer poses an environmental concern to the Subject Property. No relevant correspondence following this date was provided to EBI.

Dump #1

Dump No. 1 is located outside the Subject Property boundary and east of the drinking water reservoir. The dump reportedly was utilized circa 1929 through 1968 and contains approximately 25,000 cubic yards of waste, including ash and cinder from the power plant. A Phase II Subsurface Investigation was conducted in 1991 by Engineering-Science, Inc., and included the installation of three (3) groundwater monitoring wells in the vicinity of the Dump No. 1. Concentrations of metals were detected above applicable standards at the time of the sampling event in the upgradient well. The contaminants detected include barium, chromium, lead, iron, magnesium and manganese. Residential drinking water wells are located in the vicinity of Dump No. 1, and the potential for contaminant migration into the bedrock aquifer was not explored during the investigation. Sampling of nearby residential wells by the Dutchess County Department of Health and conducted in October 1990 did not indicate the presence of contamination from Dump No. 1.

A May 21, 2001 letter from NYS DEC indicated that a drum and scrap metal were observed in the vicinity of Dump #1 during a May 18, 2001 inspection. Correspondence from December 21, 2004 indicated that this drum and scrap metal was removed, however, ATV traffic was exposing some of the ash and solid waste at the landfill, and actions needed to be taken to reduce exposure to area users. A deadline of May 23, 2005 was given for a response reporting on actions taken, however, EBI did not identify information following the December 21, 2004 letter.

EBI attempted to locate Dump 1 via vehicular reconnaissance; however, dense vegetation prevented visual reconnaissance of the former dumping area. No groundwater monitoring wells were observed during EBI's reconnaissance.

Dump #2

Dump No. 2 is located northwest of the sewage treatment plant, adjacent to Building 80 and on the northern property boundary. Dump No. 2 is identified as a portion of a de-listed NYS SHWS and was utilized between 1968 and 1975. The dump area reportedly includes approximately 17,000 cubic yards of hospital waste, landscape debris, fuel tanks, transformers, 55-gallon drums, batteries, furniture, white goods and machinery. According to the 1991 Engineering-Science Phase II Subsurface Investigation Report, analytical sampling from four (4) groundwater monitoring wells installed in the vicinity of Dump No. 2 indicted that groundwater has been impacted with tetrachloroethene (PCE). PCE (6µg/l) was detected in excess of NYS groundwater standards in a downgradient well. Additionally, concentrations of chromium, iron, lead, magnesium, manganese and zinc exceeded NYS groundwater standards in one or more samples. A geophysical investigation consisting of an electromagnetic survey was performed at Dump No. 2 and identified a pattern potentially corresponding to a small conductive plume along the eastern portion of the dump. See Section 4.3.8 for a full summary of the 1991 Phase II Report.

EBI additionally reviewed a letter from NYS DEC to NYS OMH, dated May 21, 2001, which indicated that exposed tires and roofing materials were observed during a May 18, 2001 site inspection. The letter indicated that NYS OMH had agreed to conduct several response actions, which are further

detailed in Section 4.3.8. No additional documentation or correspondence was identified by EBI regarding response actions following this letter.

EBI attempted to locate Dump No. 2 via vehicular reconnaissance, however, dense vegetation prevented full observation of the dump area. EBI observed what appeared to be the eastern boundary of the dump adjacent to the access road leading to Building 80. A steep, unnatural slope, plastic debris and brick were observed in the area believed to be the eastern portion of the dump. No groundwater monitoring wells were observed during EBI's reconnaissance.

Dump # 2a

A landfill associated with the golf course is located south of the eastern portion of Dump No. 2, and is referred to as Dump #2a. Evidence of recently discarded soil and brush was observed during EBI's vehicular reconnaissance of the Golf Course Landfill area. The area has reportedly been historically used to dispose of landscape debris generated at the golf course, and some indication of potential additional solid waste disposal was identified in a May 21, 2001 letter from NYS DEC (see Section 4.3.8 for discussion of this letter).

Sewage Screenings Dump

A small dump area formerly utilized for the disposal of trash and debris screened from the wastewater screening room inside Building 34 is reportedly located south of Building 34. The screening room was utilized for removal of materials from the sewage system, which serviced the entire site. Floor drains in some portions of the buildings throughout the Subject Property were reported to discharge to the sewage system, and there is the potential for oil and hazardous material stored in the vicinity of these floor drains to have entered the sewage system. No other information regarding the dump was provided to EBI for review. Dense vegetation prevented comprehensive visual inspection of the former dumping area during EBI's reconnaissance of the area. Based on the storage and former use of oil and hazardous materials at the Subject Property in the vicinity of floor drains and the lack of information regarding the sewer screenings disposed of at the sewage screening dump, this area is considered to represent an environmental concern to the Subject Property.

EXTERIOR PITS, PONDS, OR LAGOONS

EBI observed a water cistern located southeast of Building 34. According to Paul Palmer, the water in the cistern reportedly served Building 34 as a water source in the event of a fire inside the building. No adverse environmental conditions are expected to be associated with the cistern.

WASTEWATER OR STORMWATER DISCHARGE/DISPOSAL

Wastewater and stormwater at the Subject Property is treated onsite at the wastewater plant located on the northern/central portion of the Subject Property. Prior to the site closing in 1994, the full service water treatment plant handled wastewater and stormwater from the entire property. The water treatment plant currently handles flow wastewater flow from the golf course and manor house, and stormwater generated throughout the Subject Property. The wastewater treatment plant was retrofitted following the closing of the site circa 1994 to handle the lower flows of wastewater and stormwater.

OIL-WATER SEPARATORS OR CLARIFIERS

According to the F&E report, the NYSDEC Spill Number 9206178 is related to a release of waste oil discharged into a creek from an oil-water separator. The location of the onsite oil-water separator was not provided in the spill report. EBI did not observe evidence of an oil-water separator during site reconnaissance activities. However, the oil-water separator is believed to be located beneath the slab in the garage area in Building 34.

6.0 INTERVIEWS

The following persons were interviewed to obtain information regarding recognized environmental conditions in connection with the property. Additionally, a Pre-Survey Questionnaire was forwarded to the designated Subject Property contact. The Pre-Survey Questionnaire has not been completed and returned to our offices. It should be noted that the Subject Property contact has declined to complete the Pre-Survey Questionnaire. The information requested in the Pre-Survey Questionnaire is intended to assist in gathering information that may be material to identifying recognized environmental conditions in connection with the Subject Property.

INTERVIEWS			
Contact / Affiliation	**Date of Communication**	**Years Associated with Subject Property**	**Telephone No.**
Kathleen Schibanoff Property Manager Dover Knolls LLC	08/13/2013	30	(845) 832-3200
Mr. Paul Palmer Property Manager Dover Knolls LLC	08/19/2013	20	(845) 705-0075
Mr. Steven Parisio Regional Solid Waste Geologist NYSDEC Office of Solid Waste	08/30/2013	NA	(845) 256-3126
Ms. Erin Shirkey Environmental Engineer I NYSDEC Division of Water	08/16/2013	NA	(914) 428-2505 Ext. 351
Ms. Ingrid Newson Regional Administrator NYSDEC	08/14/2013	NA	NA
Mr. David Weitz NYSDEC Spills FOIL Request Agent	08/27/2013	NA	NA
Ms. Katie Palmer House Town Clerk Town of Dover	08/22/2013	NA	(845) 832-6111
Ms. Betty-Ann Sherer Land Use Coordinator Town of Dover Building Department	08/22/2013	NA	(845) 832-6111
Ms. Bonnie Franks Deputy Town Clerk Town of Dover	08/22/2013	NA	(845) 832-6111
Ms. Judy Hyatt Town of Dover Assessor Town of Dover	08/22/2013	NA	(845) 832-6111

Pertinent information from the interviews is presented in applicable sections of this report.

7.0 CONDITIONS OUTSIDE THE SCOPE OF ASTM PRACTICE E 1527-05

The following sections address environmental issues or conditions at the Subject Property that parties may wish to assess in connection with commercial real estate that are outside the scope of ASTM Practice E 1527-05 (non-scope considerations).

7.1 ASBESTOS-CONTAINING MATERIAL (ACM)

Asbestos is a term used to describe a group of six naturally occurring crystalline fiber minerals. Asbestos has excellent thermal stability, a high degree of tensile strength, and has been used extensively in the textile, insulation, and building industries, particularly as a component in fireproofing, decorative coatings, insulation materials, and as reinforcement for plaster binders in building products. Asbestos-containing building materials are generally classified as friable or non-friable. Friable materials are those which can be crumbled, pulverized, or reduced to powder by hand pressure, or by normal use or maintenance can be expected to emit asbestos fibers into the air. Non-friable ACM is a potential concern if it is damaged by maintenance work, demolition, or other activities, at which time it may be considered friable.

EBI conducted a limited visual screening survey for the presence of ACM at the Subject Property. EBI identified friable suspect ACM in the form of textured ceiling and wall surfacing materials, sheetrock/joint compound composite material, 2'x4' white perforated acoustical ceiling tile, boiler insulation, thermal pipe insulation, and structural spray-on fireproofing and non-friable suspect ACM in the form of vinyl floor tile and associated mastic, sheet vinyl flooring and associated mastic, cementitious insulating material on HVAC ductwork, various construction mastics and caulking, and roofing materials. These materials were observed to be poor to fair condition at the time of assessment. Please note that this survey was limited to visual observations of accessible areas and that the scope of work for this assessment did not include the collection and laboratory analysis of bulk samples of suspect ACM. Additional suspect ACM may be present in inaccessible areas, including, but not limited to, roofs, pipe chases behind solid walls and ceilings, concealed floor coverings, the interior of machinery or equipment, or water and sewer systems.

It should be noted that the limited visual screening survey conducted under the scope of work for this assessment does not constitute a full asbestos inspection, in which all areas of the buildings would have been thoroughly surveyed and sampled. The possibility exists for ACM to be present in areas of the buildings not accessed or sampled by EBI personnel. Based on the limited scope of this assessment, additional suspect ACM may also present in areas of the buildings that were accessed as part of this assessment.

Due to the continued distribution of a wide variety of asbestos-containing building materials, asbestos may be present in some of the roofing, flooring, wall and ceiling materials, caulking/putties, adhesives, spackling compounds, and insulation materials, as well as other building materials that may be used at the Subject Property. Sampling many of these materials requires techniques that may be destructive to subject facilities, and in the case of roofing material, may void warranties. It is recommended that an asbestos inspection be performed in accordance with all applicable federal, state, and local regulatory requirements prior to renovation, demolition, or other activities that could cause a material disturbance. Any removal or disturbance of ACM or suspect ACM should be performed by properly trained personnel and in compliance with federal, state, and local regulations.

7.2 RADON

Radon is a naturally-occurring, colorless and odorless radioactive gas that is generated primarily in granitic rocks. The United States Surgeon General has published information that radon is a cause of lung cancer. Radon usually enters a building through openings in the foundation, and therefore is a potential health concern to residents of the lowest level of a building with inadequate ventilation.

The EPA Map of Radon Zones indicates that Dutchess County is located within a Zone 1 radon area. Zone 1 is defined as an area that has a high potential for radon gas, with a predicted average indoor radon screening level greater than 4.0 picoCuries per liter (pCi/L). The EPA recommended Action Level for radon is 4.0 pCi/L.

The previous environmental report referenced in Section 4.3.8 of this report, entitled Phase I Environmental Site Assessment, performed by Freudenthal & Elkowitz Consulting Group, Inc. (F&E) of Islandia, New York, dated December 2008, referenced 32 basement radon tests which have been conducted in the Town of Dover, Dutchess County, with a radon basement concentration of 9.22 pCi/L. Based upon the testing results, F&E suggested radon represents an environmental concern for the Subject Property.

7.3 LEAD-BASED PAINT (LBP)

Use of lead in household paint was banned by the U.S. Environmental Protection Agency (EPA) effective January 1, 1978. The EPA and the U.S. Department of Housing and Urban Development (HUD) consider lead-based paint as containing a lead concentration equal to or greater than 1.0 milligram per square centimeter (mg/cm^2) or 0.5% lead by weight, as defined by Title X of the 1992 Housing and Community Development Act.

During EBI's visual reconnaissance of the buildings on the Subject Property, suspect LBP was observed in the majority of the interior and some of the exterior unoccupied/inactive buildings. Interior and exterior painted surfaces showed moderate to severe chipping and/or peeling related to poor housekeeping, vandalism and water intrusion in the majority of the vacant buildings. Exterior painted surfaces were observed to be in poor condition on the smaller residential buildings on the property. No sampling was conducted by EBI in accordance with the scope of work for this assessment.

Please note that the limited LBP screening survey conducted in accordance with the scope of work for this assessment does not constitute a full compliance lead inspection, in which all areas of the buildings and representative surfaces would have been tested. LBP may be present in areas of the buildings not evaluated as part of this limited screening survey.

7.4 LEAD IN DRINKING WATER

Lead has historically been used in pipes, solder, and brass fixtures used in water distribution systems and building plumbing systems. In 1986, EPA banned the use of lead at concentrations exceeding 0.2% lead in solder and 8% lead in other plumbing materials. Lead in drinking water results primarily from corrosion of lead containing materials in service lines or from corrosion of lead containing materials in building plumbing systems such as lead solder, brass, bronze, and other lead containing alloys. The EPA Action Level for lead in public drinking water supplies is 0.015 parts per million (ppm) or 0.015 milligrams per liter (mg /L).

Potable water at the Subject Property is obtained from an on-site reservoir located on the eastern portion of the Subject Property. The reservoir and associated dam system currently supply potable

- A former Ash Landfill and area of coal storage were identified at the Subject Property on the north and south sides of Wheeler Road, to the west of Buildings 34 and 22, related to the storage of unburned coal and ash generated from the burning of coal at the site from approximately 1933 to 1994. In September 1991, the NYS OMH was issued Consent Order #3-1520-88-05 in relation to several violations of NYS OMH and DEC regulations, including those involving the storage of ash and coal at the site. EBI reviewed a January 2001 letter from NYS DEC to NYS OMH, which indicated acceptance of a report titled "Harlem Valley Psychiatric Center Coal Ash Removal Report," and concludes that OMH has complied with the Consent Order schedule of compliance requirements. This condition is considered an *historical recognized environmental condition (HREC).*

- EBI identified 14 former underground storage tanks formerly utilized at the Subject Property, which were reportedly removed from the site between 1991 and 2000. EBI was unable to identify closure reports for these UST removals, however, no open regulatory listings were identified in conjunction with these tank removals. This is considered to be a *HREC* for the Subject Property.

- EBI identified 17 Spills and 6 LTANKS listings for the Subject Property indicating previous issues with oil and/or hazardous materials releases and leaking or potentially leaking tanks at the property. Each of these 23 listings is listed with a status of closed, each with the applicable closure date. Additionally, EBI identified approximately 26 monitoring wells at the Subject Property in the vicinity of the Power Plant (Building 34), along with a former remediation system which appeared to be out of use. The monitoring wells and remediation system were reportedly utilized in conjunction with a former Spills listing at the site. Based on the closed status of Spills and LTANKS listings, these listings are considered to be *HRECs* for the Subject Property.

- EBI observed various sized containers ranging from aerosol containers to 55-gallon drums of oil and hazardous materials throughout the buildings at the site, in various conditions, with some leaking, staining and pooling of oil and hazardous materials observed. Additionally, EBI observed one out-of-use transformer labeled as PCB-contaminated at Building 59. This is considered to be a *de minimis* condition at the site.

- EBI conducted a limited visual screening survey for the presence of asbestos-containing materials (ACM) at the Subject Property. EBI identified friable suspect ACM in the form of textured ceiling and wall surfacing materials, sheetrock/joint compound composite material, 2'x4' white perforated acoustical ceiling tile, boiler insulation, thermal pipe insulation, and structural spray-on fireproofing and non-friable suspect ACM in the form of vinyl floor tile and associated mastic, sheet vinyl flooring and associated mastic, cementitious insulating material on HVAC ductwork, various construction mastics and caulking, and roofing materials. These materials were observed to be poor to fair condition at the time of assessment. Asbestos is a condition outside the scope of ASTM E 1527-05 and is not considered a recognized environmental condition (REC).

- EBI identified a previous environmental report which referenced 32 basement radon tests which were conducted in the Town of Dover, Dutchess County, with a radon basement concentration of 9.22 pCi/L. Radon is a condition outside the scope of ASTM Practice E 1527-05 and is not considered a recognized environmental condition (REC).

- During EBI's visual reconnaissance of the buildings on the Subject Property, suspect LBP was observed in the majority of the interior and some of the exterior unoccupied/inactive buildings. Interior and exterior painted surfaces showed moderate to severe chipping and/or peeling related to poor housekeeping, vandalism and water intrusion in the majority of the vacant buildings. Exterior painted surfaces were observed to be in poor condition on the smaller residential buildings on the property. LBP is a condition outside the scope of ASTM Practice E 1527-05 and is not considered a recognized environmental condition (REC).

9.0 RECOMMENDATIONS

Based upon the findings of this investigation, EBI offers the following recommendations:

- EBI recommends a comprehensive Phase II subsurface investigation at the Subject Property, in order to evaluate the potential subsurface impacts from underground storage tanks existing at the site, on-site dumping of wastes, former garage use and observed condition of certain areas of the property, as well as pesticide storage at the Subject Property. Estimated cost: $30,000

- EBI recommends consultation with the New York State Department of Environmental Conservation, Solid Waste Program in order to achieve regulatory compliance in relation to on-site dumps containing solid waste, and ensure that compliance is maintained and future development of the property is consistent with conditions necessary for compliance. Estimated cost: Action Item

- EBI recommends that oil and hazardous materials be removed from the site in accordance with all local, state and federal regulations, and that areas of observed leaking, staining, and pooling of these materials be cleaned, with cleaning materials properly disposed of. Estimated cost: Action Item

- EBI recommends that the existing on-site monitoring wells located to the north and west of Building 34 be decommissioned following any sampling performed as part of Phase II investigations. Estimated cost: Action Item

- EBI recommends that all suspect asbestos-containing materials (ACM) identified be bulk sampled by a licensed asbestos inspector prior to any renovation or demolition activities. Any materials that are determined to be asbestos-containing through bulk sampling should be removed by a licensed abatement contractor prior to renovation or demolition activities that would disturb these materials. Estimated Cost: Action Item.

- EBI recommends that radon screening be performed at the site in areas of the site which will be renovated for housing purposes to determine if mitigation systems would be necessary. Estimated Cost: Action Item.

10.0 REFERENCES

PHASE I ENVIRONMENTAL SITE ASSESSMENT REFERENCES

ASTM Designation E 1527-05 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.

Closure Investigation Report (CIR) for the North Side of Wheeler Road, Harlem Valley Psychiatric Center, Wingdale, New York. Order on Consent # R3-1520-88-05 prepared by Holzmacher, McLendon & Murrell, P.C. (H2M Associates) of Melville, New York, dated October 14, 1992

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Engineering Investigations as Inactive Hazardous Waste Sites in the State of New York, Phase I Investigations, Harlem Valley Psychiatric Center - Dump Site, Town of Dover, Dutchess County, New York, State, prepared by Wehran Engineering, P.C. (Wehran) of Middletown, New York, dated June 1987.

Engineering Investigations as Inactive Hazardous Waste Sites, Phase II Investigation, Harlem Valley Psychiatric Center, NYS Site Number 314031, Dutchess County, New York, prepared by Engineering-Science, Inc. (ESI) of Liverpool, New York, dated April 1991

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Letter Re: Former Harlem Valley Psychiatric Center Dump 1, from New York State Department of Environmental Conservation (NYS DEC) to Kenneth Lutters, New York State New York State Office of Parks Recreation & Historic Preservation (OPRHP), dated December 21, 2004

Letter Re: Harlem Valley Psychiatric Center May 18, 2001 Inspection, from New York State Department of Environmental Conservation (NYS DEC) to Scott Bard, New York State Office of Mental Health (NYS OMH), dated May 21, 2001

Letter Re: Harlem Valley Psychiatric Center, from New York State Department of Environmental Conservation (NYS DEC) to Scott Bard, New York State Office of Mental Health (NYS OMH), dated January 5, 2001

New York State Department of Environmental Conservation (NYSDEC) Letter Correspondence, RE DEC Site No 314031, Harlem Valley Psychiatric Center, Route 22, Wingdale, New York, dated September 10, 1991

New York State Department of Environmental Conservation (NYSDEC) Consent Order, Case #R31520-88-05, dated September 9, 1991

Phase I Environmental Site Assessment, Former Harlem Valley Psychiatric Center located at NYS Route 22 and Wheeler Road, Dover, New York, prepared by Freudenthal & Elkowitz Consulting Group, Inc. (F&E) of Islandia, New York, dated December 2008.

Phase I Environmental Site Assessment, Harlem Valley Psychiatric Center located at Route 22, Dover, New York, prepared by Professional Service Industries, Inc. (PSI) of Latham, New York, dated October 31, 1996

Phase I Environmental Site Assessment, Harlem Valley Psychiatric Center, 73 Wheeler Road, Wingdale, New York, prepared by Advanced Cleanup Technologies, Inc. (ACT) of Hicksville, New York, dated June 4, 2013

Report On Hydrogeologic Investigation, Harlem Valley Psychiatric Center, Wingdale, New York prepared by Holzmacher, McLendon & Murrell, P.C. (H2M Associates) of Melville, New York, dated February 1991

USGS Topographic Map, Dover Plains, New York Quadrangle, 7.5-Minute Series, dated 1985.

Web Soil Survey, NRCS, U.S. Department of Agriculture, August 30, 2013, On-line: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Landscape Master Plan

Olivet Center

Dover, New York

PREPARED FOR

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August 1, 2015

INTRODUCTION

The Olivet Center landscape is a mix of native wetland and woodland vegetation, mown lawns laced with large mature shade trees and mix of some ornamental plantings creating a framework for a memorable campus landscape environment. **There are very clear distinctions of landscape types from the maintained lawns to the** wild and unmaintained woodlands. The mix of landscape types invokes an impression of a historic campus park, with woodlands juxtaposed to a manmade landscape environment rich in history; but lost to a fallow and poorly maintained site for over 20 years. But yet, the campus is a jewel in the waiting. With the proposed conversion of the hospital into an active University campus, the revitalization of future campus buildings, expanded programs and site improvements will make existing campus landscape become an important catalyst for creating a tangible sense of renewal and long term campus investment.

A full range and hierarchy of vegetation already exists on Olivet Center site and is vital to shaping the character of the campus landscape. A rich canopy of woodlands and large shade trees around development areas are punctuated with a variety of understory trees and provide a minimal level of backdrop for buildings and outdoor function spaces. Small trees and shrubs also add to the landscapes verdant quality, but tend to be overgrown and disjointed in their placement. The vast sweeps of mown grass and large shade trees are the 'memorable touchstone' today and a very important armature of the future campus landscape image.

Beyond the vegetation, other landscape elements are important to shaping the character of the campus ensuring that it is a dynamic and engaging landscape environment. While often subtle, the hardscape elements lend themselves to reinforcing wayfinding and can enrich the pedestrian experiences. The development of an effective landscape management strategy will require an appreciation, integration and reinforcement of the variations of these key landscape elements with specific and appropriate planting and site design strategies based upon program and use. The philosophy and policy framework put forth in this Landscape Master Plan will be instrumental in guiding the future landscape development and ongoing management of this campus landscape,

ensuring that it can become an oasis in the community that balances aesthetics, respect for the environment, and the campus history.

Site aerial

Purpose

The purpose of this Landscape Master Plan is to take an overview of the existing campus landscape, proposed programs, and opportunities for landscape improvement strategies that help develop a plan that:

- Strengthens existing campus organizational patterns
- Clearly redefines appropriate relationships between campus programs/ buildings and shared common lands.
- Integrate and articulate architectural and site design in conjunction with landscape architectural design in the planning process to ensure that attractive settings and open space are provided.
- Celebrates the common lands and heritage of the landscape.
- Reduces conflicts between pedestrian, bicycle and vehicular traffic.
- Provides clarity to identification of facilities, transitions and entrance points.
- Develops new significant landscape features in association with campus expansion.

- Establishes a framework for short and long term landscape improvements and management strategies.
- Ensures that the landscape treatments over time utilize a consistent set of elements in terms of style, materials, and quality.

Goals

The campus landscape Master Plan element must correlate with the overall campus Master Plan taking into account the existing conditions, site opportunities, use and building programs, implementation phases. In order to create a comprehensive approach the integration of site conditions: slope and topography, geology, vegetation (wetlands, woodlands, grasslands), pedestrian and vehicular circulation, and building program are critical framing elements to help define the landscape approach. Olivet Center should:

Create a common 'vision' for landscape development and set priorities for:

- Preservation
- Redevelopment
- Enhancement
- Sustainability
- Guide for the future

Organize and enhance the outdoor environment of the campus as a specific framework towards implementation including the following objectives:

- Respect existing landscape heritage and use it as a basis for landscape enhancement and execution of a unified landscape image for the campus openspace system.
- Create a unified image for common campus lands, public edges, natural areas
- Clearly define pedestrian, vehicular and service circulation routes
- Identify and celebrate entrances to academic, residential, and operations facilities
- Support and develop a variety of outdoor spaces which can be used by students, staff and larger community.
- Develop a rich variety of plant material that provides seasonal interest and visual enhancement yet is simple and bold working with native and xeriscape species.
- Provide a long term maintenance framework that maximizes resources and is sustain

Landscape Character

The creation of a landscape development philosophy and subsequent policy goals will be the result of multiple factors: including consideration of the landscape's existing character, the cataloging of its component parts, program demands and how they sum up to a 'larger whole'. The issue of diverse vegetation types and species is important, but what makes a campus landscape unique is the way in which the plantings are used to shape space and give the campus a "sense of place". As with most landscape management philosophies, once the character of "place" is identified this then sets the framework for specific landscape decisions.

Many elements within the existing campus landscape contribute to the 'park' like feel of the historic hospital campus, most importantly the change in topography, open lawns defined by large shade trees and the native woodlands. The open areas consist of ground plane of lawn that are framed by a canopy of trees, roads and parking, buildings and woodlands. They are mainly located in the center of the campus property along Route 22/55. These open areas and the elements within provide some of the greatest opportunity for development of new memorable landscape areas for campus users.

In addition to the open grass areas, smaller spaces are also vital to the character of the campus landscape. These small spaces have the potential to provide a level of richness and personality whether they be plazas, courtyard gardens, landscape edges, gateways to campus program improvements. Often located at the perimeter of the building systems these important landscape spaces can reinforce the architectural character of the campus. The smaller courtyards and open spaces can infuse the general landscape with color, texture, fragrance, movement, and other forms of visual and tactile appeal. These elements in combination with the open lawn areas combine to create a distinct campus landscape - a tangible "sense of place" that distinguishes Olivet Center as a special place that is a landscape jewel in the community.

The Existing Landscape

The Landscape Master Plan element is intended to retain and support historic and current landscape practices while seeking to identify new opportunities to enhance, expand and redefine the landscape character of the campus where appropriate within the context of long term sustainability. The campus today is made up of 7 main landscape zones:

1. Woodlands
2. Wetlands and wetland setbacks
3. Open Lawns and Open Lawns with large canopy trees

4. Athletic and Recreation Areas
5. Roads and Parking
6. Pedestrian Walkways
7. Courtyards
8. Edges and Gateways

These zone distinctions will help organize and concentrate future planning efforts into sections of the campus that share common program, design and operations. *(see Exhibits 1-6)*

Landscape Components

Open Lawns

There are primarily two conditions for lawn areas on the campus: mown and seasonally un-mown grass areas. Each of these are important plantings that support the unique "sense of place" for the campus. The mown areas are more commonly related to the development area around buildings, program space and along circulation routes; while the tall grass areas are found running along the woodland and wetland edges and roads. Mowing and manicured lawn maintenance is a major part of the daily operation for the campus horticultural team and should be evaluated.

Wetlands

There are multiple wetland areas on campus each with a different level of management or quality. Each of these areas require some improved levels of maintenance (removal of dead and over grown plantings, reduction of invasive species and in some cases excavation to create better holding capacities and enhanced for habitat experience opportunities).

Trees

There are a variety of tree types on campus including canopy trees (shade and flowering types); understory trees (flowering and evergreen) and woodland trees. The tree canopy is a vital thread in the larger landscape fabric of the landscape by benefitting ecological, social and functional standpoints. Ecologically a strong tree canopy improves the air quality and directs movement (or wind protection), mitigates storm water events and runoff, provides valuable habitat for birds and animals and reduces the heat gain affect through shade canopy. Socially tree canopies are important to identifying key program spaces (gathering areas, pedestrian nodes, circulation nodes) and functionally by creating identification of edges, framing views, adding seasonal color and change, food production, and wildlife habitat.

> *Canopy Trees* – those mature trees that tend to be 20 – 40 feet in height and tend to provide overhead cover and protection.
>
> *Understory Trees* – those trees that differ from canopy trees in form and function. They may provide a small amount of overhead canopy, but tend to be smaller 10-20 feet in height and are more likely to be flowering and fruit bearing. These trees are often massed in plantings to delineate space, screen distinct areas, and used as backdrops (almost like a large shrub).
>
> *Woodland Trees* – These trees are natives and naturalized vegetation which tend to grow in clumps or perhaps as single trees after a thinning out process. The natural trees tend to be taller and broad in stature and create an overhead canopy for understory vegetation and grasses.

Generally the trees on campus appear to be in good health and some of the many specimen trees have become important elements in the history of the campus landscape as key identity markers. Many of the existing larger (older) trees on campus do however require some significant maintenance and a program of yearly work by an arborist should be developed to enhance the health of the plants and help mitigate potential loss in a storm if canopies are correctly pruned. An increase of new and expanded understory tree plantings would help improve some of the connections to future academic and residential areas to the natural or open grass areas.

Shrub Plantings

The use of a shrub planting is minimal and tends to be a palette of both native and ornamental species. One of the great benefits of the strong shrub layer is the introduction of color and texture at the pedestrian level. Use of simple mass plantings of same species and plant palettes with compatible color relationships is critical to creating a level of continuity and appearance to background plantings. Much of the existing campus shrub layer is the use of hedge material which requires and significant amount of staff maintenance and manicure. As new plantings occur use of drought tolerant natives and plants suitable in scale and form to their condition should be a priority to help reduce staff maintenance needs.

Groundcover

Groundcover plants can add another layer to the transition from lawn to shrubs. Few groundcover areas are found around the existing buildings and program areas and entries. The ability to introduce color and texture seasonally and annually is one of the important assets of ground cover materials. A good palette of ground cover can also mitigate need for mulch placement and management.

Circulation

The current campus circulation system is a network of roads and pathways shared and used by pedestrians, carts, and service vehicles. Pathways tend to be asphalt. There has been little effort to create a hierarchy of use through design detail which can cause confusion to the various campus users.

The current pathway system appears to have been historically laid out as historic hospital campus developed. The pathway network supports direct access to key function areas and services the scattered residences. Consideration could be given to realign some of the paths at some time in the future to better enhance the functionality and visual quality of the campus core. Service vehicles (small trucks and carts) should be supported by the road and pedestrain path network as a shared use.

Pedestrian ways are found to be built from concrete and asphalt. They tend to be minimally landscaped and have some lighting along their edges. A clarity to the hierarchy for pedestrian pathways is needed as the campus evolves to a University program.

COMMON THEMES

A summary of the various observation and comments based upon site photos and discussions with staff are provided. This list of recurrent themes came to light regarding the overall open space landscape framework and will be part of the basis for recommendations for landscape development opportunities:

- Celebrate the history of the campus
- Identify significant and important trees
- Plant more shade trees along walks and roads for shade
- Group trees in the open lawn areas and avoid scattered individual plantings
- Create nodes at intersections that will better identify circulation, wayfinding, and lighting at night
- Redevelop the landscape around the existing buildings and celebrate the opportunity for development of courtyard plantings that are distinct and unique from each other
- Introduce a stronger understory of flowering and ornamental trees to bring scale to edges and buildings
- Simplify the ornamental and shrub plantings
- Expand the plant palette- both natives and ornamental
- Better blend the use of plant color whether flowering or ornamental leaf color
- Introduce another layer to many of the edges with use of small trees and shrubs
- Separate and Screen the service areas better
- Improve lighting especially along roads and pedestrian pathways
- Improve wayfinding

Site specific observations and thoughts have been identified on the accompanying site plans for further clarity and review.

5.0 GUIDELINES and RECOMMENDATIONS

The following guidelines have been developed to assist JBIC with both short and long term landscape development and management strategies.

Vehicular circulation

The circulation system on the campus is one of the major framing elements for open space and landscape development along with building massing and woodland patterns (edges). The existing roads and pedestrian walk network services all areas of the campus in a simple and cohesive network. Looking at existing road/path systems and identifying key changes or reinforcements to circulation patterns on the campus will help improve safety and help set up a framework for a strong and integrated landscape plan.

Guideline:
Maintain a logical network of roads, service cart paths, along with consistent pattern of paving materials, site furnishings, landscape and lighting should be used to establish an reinforce a cohesive circulation network and identity

Recommendation
Continue to make necessary changes to existing roads to ensure that the campus is a pedestrian friendly environment in which vehicular circulation is secondary to the patterns of pedestrian movement and bicyclist.
Separate users where conflicts are identified and safety issues arise
Exhibit 7

Pedestrian System

The existing pedestrian access and walkways are too few and need to be expanded to connect program elements. Paths need to be simple and clear. Continued improvements to clarify pedestrian zones in each building program phase should be established.

Guideline:
A logical network of pathways, along with setting a consistent pattern of paving materials, supporting site furnishings, landscape and lighting should be used to establish an reinforce a cohesive pedestrian network and identity

Recommendation:

Identify areas where pedestrians connections will be needed as building uses change or new buildings are introduced.
Look at the introduction of different paving materials and or pavement detailing to improve clarity of use intent based upon program, location, and clarity of identity.
Pedestrian ways should be well lite and provide for pedestrian safety at night. Using low angle - ground level lighting strategies will minimalize impacts of lights on the night sky and residential environments. New solar equipment may be a consideration --these units are getting better and more efficient all the time.
Consider development of a 'cross campus trial' as a way to provide access and introduce other landscape environments to campus users.
Exhibit 9

Gateways

Creating a sense of arrival and passage is an important part of creating a great campus landscape experience. A hierarchy of enhanced gateways at perimeter road nodes, entrances to buildings or at the entry to key program spaces is important and can be accomplished using architecture (walls), planting, paving, public art, signage, and lighting. Gateways should be designed to create a welcoming and safe arrive and transition, clarity of use, and celebration of passage.

Guideline:
Provide a hierarchy of enhanced gateways along the road system that strengthens the identification of campus, circulation transition nodes and reinforces way finding.
Expand plant palette and lighting at gateways to enrich experience and visual quality.

Recommendation:
Establish a common theme will help create a sense of continuity and community standard for gateways:
Use architectural elements (walls and large stone blocks) to reinforce the gateway or node
Develop a uniform paving pattern using patterns, unit pavers and color
Exhibits 7,10 and 11

Parking

There are parts of campus and open space network that have designated parking areas off the road system as well as pathways; in other areas vehicles are just dropped at the path edges or left on the adjacent lawns. Development of new consolidate parking areas should be investigated to minimize parking areas scattered around the campus. Paving materials should be porous and create a character of a courtyard / pedestrian environment.

Guideline:
Minimize the conflicts between surface parking areas /service areas and pedestrian circulation. Evaluate each lot and reduce or redesign them as needed to improve aesthetics and minimize conflicts with pedestrians and bicyclists. Provide appropriate landscape development, site furniture, and lighting to provide safe, accessible and attractive screened parking areas.

Recommendation:
Relocate car parking away from pedestrian walkways and screen them visually from the general open space network and buildings.
Restrict service parking on pedestrian areas, lawns and plantings.
Provide appropriate number of spaces for each locale based on program and use.
Use unit pavers for service parking areas and establish a common paving pattern to feel like a courtyard when no vehicles are present.
Provide 1-2 electrical charging stations at key parking areas
Install bicycle racks to mitigate congestion of pedestrian areas and entries.
Provide generous landscape buffers around parking areas with shade trees and screen plantings.
Exhibit 7

Accessibility

The grades on the campus are a mix of ranges that support access for disabled campus users. All new and existing entrances and walkways linking buildings and activity areas should provide one route minimum at a gradient of less that 5% to ensure accessible access for all.

Guideline:
Ensure that all primary pedestrian routes are accessible and barrier free. Strive to ensure that accessible routes are designed as primary routes where possible and not as separated paths if possible.

Recommendation:
Paths that are less than 5% are encouraged wherever possible and should be accessible and barrier free. If a path is greater than 5% it should at least be barrier free where possible.
Curb ramps should be located at all crossing points and a visual detectable warning strip provide that is consistent and compatible with the adjacent paving.
Handrails for stairs, steps and ramps should be a consistent design throughout the property.
Signage of major pedestrian crossings and "share the road" should be considered.

Cross Campus Trail

Another important and significant feature could be the introduction of a supplemental pedestrian trial system linking the north end and more developed south end aligned along the wetlands and playfield area. An opportunity to link the major wetlands and woodlands of the campus as a pedestrian bicycle path only using a boardwalk system should be explored. This facility could coincide with the development of an interpretative wildlife and landscape program. Trial connections over the hill to the pond and recreation areas should also be upgraded to encourage recreation activity and connect landscape improvements.

Guideline:
Improve existing trails connecting program elements throughout the campus recognizing importance to integrate appropriate grading, paving, lighting and plantings.

Recommendation:
Use crushed stone rock from local source
Minimize vehicular use on the trails and preserve for pedestrian and bicyclist
Provide signage and visual warning at points of intersection
Provide for proper drainage
Add understory flowering trees and shrubs in appropriate places as accent and transition plantings to woodland edges.
Exhibit 9

Bicycle System

As the campus transitions to a more academic and residential campus a greater dependence upon bicycle transportation throughout should be encouraged. Bicyclist safety and interaction with pedestrians and vehicular traffic is a priority and current unwritten courtesies regarding mode priority are supported.

Guideline:
Identify and provide a paved, unobstructed bicycle system that ties all areas of the campus.

Recommendation:
Where bicycle traffic share pathways and roads, encourage a "share the road" policy and supplement with signage as appropriate.
Shared paths should be a minimum six feet (10').
Consider consolidation of bicycle parking areas including potential for covered parking in some locations.
Install bike racks on paved areas and / or in association with service parking.

Bike parking areas should be separated from walkways and screen planted.
Provide appropriate lighting on bikes and in parking areas for evening use.

Service Access and Trash/Recycling Collection System

Service zones can have a negative aesthetic implication on the visual quality of the campus landscape; but are necessary. The trash collection nodes will likely be set along the main path network at key building service areas.

Guideline:
Minimize the aesthetic and functional impact that service areas have on the pedestrian experience. Consolidate and /or design service and trash zones and reduce conflicts with bicyclist and pedestrian activity to improve the overall aesthetic of the campus open space systems.

Recommendation:
Consolidate trash and recycling collection points to less visible areas where possible
Relocate and/or screen collection areas that are adjacent to the main vehicular and pedestrian path
Screen all visual trash collection areas with wall structures with gates or heavy screen plantings

LANDSCAPE ELEMENT

The Olivet Management commitment to providing a quality landscape environment is apparent throughout the campus in both maintenance of existing areas and renewed efforts to recapture historic landscape character. As the campus continues to redevelop and mature, special attention will need to be paid to the integrating new landscape treatments with historical landscape character and practices to ensure a cohesive landscape framework across the campus punctuated by key points of interest or celebration. The landscape is composed of several layers – canopy, small tree, shrub, ground plane. A successful landscape environment is one that balances the scale, plant character, form, texture and color of these layers in a way to complete an integrated and balanced ensemble of plantings.
Exhibits 10 and 11

Trees

It is the pattern of trees on the Campus really frames the open space system and integrates the buildings and program uses throughout the campus. Most commonly, people identify the differences in the existing tree canopy as *"street trees"* – those that run parallel to the circulation network; *shade trees* – those that provide a canopy over a programed use or circulation system elements, *screen trees* – those that direct or reduce views from one space to another; *flowering trees*- those trees that tend to be smaller in scale and provide a seasonal display of color; and *woodland trees* – those native groupings of trees seen in the more wild areas of the campus. The campus tree inventory is rich in diversity and character that provides a foundation for development of a botanical arboretum approach for long term management documentation; but also an invaluable educational tool to campus residents and guest.

Guideline:

Implement a tree plan that will give identity to, enhance, and maintain existing tree patterns and uses. Define and enhance a sequence of planting zones to provide a variety of experiences for people moving through, across, and around the campus landscape.

Recommendation:

The grounds management team should have at least one ISA Certified Arborist to support the management and maintenance of the valuable resource. Tree staff should mentored to understand ANSI standards and implication on pruning and care of trees.
Over time develop a tree survey and number each tree or clump of native trees to be better able to manage care and record history of maintenance. Documentation of location, size, condition, species, and special notes on maintenance issues should be minimal information recorded.
Existing Legacy Trees should be managed as unique resources, incorporated into new designs but not removed..
Tree pruning and maintenance should be done on an as need basis. Tree canopies of larger shade and street trees should be kept above 12′ paved roadways to allow for clearance of trucks and support vehicles. A 6′ minimum over plantings.
Prune existing trees to resemble and express their natural form and character - do not shear plants.
Develop and woodland management program to open wooded areas creating canopy and open understory for grasses, shrubs or flowering trees.
Plant new street trees along pathways and pedestrian area to provide shade .
Plant new shade and flowering trees along existing shrub plantings at buildings and mass buffer plantings to enhance scale and texture of the larger shrub levels.
Trees should be placed in areas outside of heavy foot and or vehicular traffic to avoid compaction.
Use flowering and small shade trees at nodes along pedestrian paths and key gathering areas.

Shrubs

Many of the few shrub beds on the campus are overgrown, overly pruned, or in need of refreshing. Typically shrub beds do become overgrown and tired and in need of replacement every five to seven years. They must be renovated periodically by removing older plants and adding new fresh plants to maintain the aesthetic value of the landscape. A mix of shrub plantings is currently found, but can be spotty in their massing that leads to an incoherent landscape image.

Guideline:

Implement a shrub planting program that relies upon simplicity of form, mass, color, texture and orientation as the framework for shrub selections. Establish clear layers of plant species and form and balance characteristics of one plant to the other to avoid redundancy or disjointed visual expressions.

Recommendation:

Keep plantings simple and appropriately scaled in relationship

Consider the ultimate size of plant material and choose plants that will not require a great deal of maintenance annually.

Remove, trim, or limb up overgrown shrubs that cover windows, block architectural details, or create security issues.

Use plants that focus on evergreen foliage, long seasonal flowering displays, texture, and appropriate scale.

Develop plant palettes that account for the microclimates of the campus affected by full sun, shade, partial shade, wind, salt; and adjacent activities – pedestrian or vehicular environments.

Consider the effects of planting around existing trees and root zones; avoid expansive areas of mulch.

Consider the use of evergreen hedges in certain locations on the inside edge of walkways and parking areas to control traffic.

Design shrub plantings as simple mass plantings with a juxtaposition of a mix of texture, form and color accents.

Use shrub plantings to bring down the scale of large and small tree plantings especially around buildings and long bordered edges.

Provide accent plantings to identify and enhance building entrances, walkways, and other focal program areas.

Expand pavement areas where narrow to avoid damage to shrub, ground cover and floral displays.

Groundcovers and Floral Displays

In general, traditional low growing groundcovers are not commonly planted on the campus. Low growing ground covers are defined as plants that grow to a maximum height of 6-12 inches and are aggressive spreading plants. Use of groundcover in locations where the desire to mitigate mulching, add a ground plane layer to the planting, or create a definable edge to lawn areas can benefit some of the existing plantings especially around the buildings or pedestrian plaza areas.

Guideline:
Use groundcover plantings to expand the layering of plantings, create definable edges to lawn areas, reduce the use of mulch and add color and texture to shrub beds.

Recommendation:
Use accent plantings to identify and enhance building areas and broaden seasonal color display.
Use annuals and perennials as part of a larger composition in order to create 'rich' year-round plantings.
Coordinate accent plantings with established plant palette and building / program architecture.
Identify opportunities for introduction of garden area that might support event use or educational programs for campus users.
Careful consideration should be given to the location of any freestanding planters with annuals as irrigation and drainage are critical to plant care.

Lawns

One of the most memorable parts of the campus landscape today is the open grass areas – both mown and tall grass edges. The lawns are the core armature of the landscape supported by strong planted edges and dotted with individual canopy trees and tree groupings.

Guideline:
Continue to use the lawn areas as the primary framework element to the overall landscape development and character.

Recommendation:
Expand the open area on the campus through tree and shrub removal, pruning, and tree transplanting.
Identify priority mown grass lawn areas and enhance maintenance and irrigation year-round.
Mown lawn areas should be part of a complete integrate pest management system.

HARDSCAPE ELEMENTS

Pavement

Hardscape is a vital component in the landscape of the campus as it helps reinforces program spaces The pedestrian circulation system is the major system that ties the public open space system together and thus deserves specific attention to design and implementation of pavement systems. It is important that the paving systems be carefully conceived and detailed to reflect use, speed and intersection of users through materials, layout and dimension as a way to reinforce the hierarchy of the circulation system.

Guideline:
Establish a palette of materials that responds to the program and creates a consistent and coherent network of paths and spaces and common design theme for similar program areas (walks, terraces, nodes, etc.)

Recommendation:
Use broom finish concrete for main pathways with tooled edge.
Develop and hierarchy to pathways and pattern pedestrian circulation differently than roads, bikeways or trails to reinforce clarity of use.
Standardize materials for similar uses and create a set of detailed patterns.
Create a policy of using paving patterns as warning to pedestrians of transition points and shared circulation areas.
Use unit pavers or stone paving for specialty program areas related to the building entrances; as well as circulation nodes throughout the campus.

Site Furnishing

Site furnishings not only add function to the landscape, they play an important part of describing the 'place'. A consistent use of site furnishings across the common open space and campus areas should serve as a unifying element setting a consistent style, materials, scale and proportion, and general appearance.

Guideline:
Develop a comprehensive standard palette of site furnishings and integrate them into the pedestrian system, gathering areas / terraces and building entryways. Arrange

furnishings to support program requirements for specific spaces and reinforce the overall character of the campus environment and building aesthetic.

Recommendation:
Catalogue existing site furnishings and re-establish a family of furniture for standardization and distribution throughout the open space system.
Catalog should include:

- Benches
- Chairs and lounges
- Beach and pool furnishings
- Tables
- Trash receptacles
- Bike racks
- Shelters and Umbrellas

Infrastructure Element

Utility Corridors

Utilities above and below grade are an essential part of the function of a campus environment, and the planning and coordination of locations for utility services is important for both functional and aesthetic reasons.

Guideline:
Minimize the impact to above and below grade utilities have on the landscape and hardscape areas. Identify current 'corridors' and review planting strategies and programs to work around these existing conditions. Should new utilities or upgrades occur review opportunities to relocate the infrastructure in a way that better fits the open space plan and landscape concepts.

Recommendation:
Locate utilities underground when given the opportunity for visual improvement, reduction of storm damage potential and improved maintenance.
Consolidate utilities in to common corridors where possible to reduce footprint of disturbed area.
Locate utilities away from primary entryways, pedestrian routes, view corridors and recreation areas.
Locate manholes, electrical hand holes and irrigation equipment in areas that can be screened and does not impact management of turf or paving systems.

Where existing access areas are above grade seek to lower covers / boxes to improve visual quality of the open space system.

Drainage

Stormwater management is currently handled on a building 'site by site' basis with discharge going to the closest open area as sheet flow runoff or percolation beds. Paved areas in and around the campus are drained to sheet flow or occasionally inlets that flow to collection system for percolation. Overall drainage for the campus is accommodated in the low areas / wetlands which are potential amenity areas; as well as potential water reserves and wildlife habitat.

Guideline:
Develop a comprehensive drainage plan/collection system which can support sustainable water collection; but also becomes an important part of the overall landscape program.

Recommendation:
Look a long term opportunities to harvest rainwater from roof and pavement
Consider a cistern collection systems on a zoned basis for irrigation support in key areas.
Review sheet flow of water from pathways and terraces and identify any areas of wash out to determine need to re-grade or add collection devices.
Use permeable pavers for all new pavement in pedestrian areas to capture water and recharge ground water.
Look at the existing stormwater wetlands and ponds as a system to redefine connections that support a larger water management strategy in support of natural / wildlife areas.

Irrigation

In order to maintain a healthy landscape on the campus most ornamental plantings and heavy use turf areas require irrigation in the summer season. Capturing as much storm water and water from the pond is critical to the minimizing potable water consumption.

Guideline:
Update and expand a comprehensive irrigation management strategy that builds upon efforts to collect rain water for reuse through a series of cisterns on the campus in support of planting irrigation.

Recommendation:

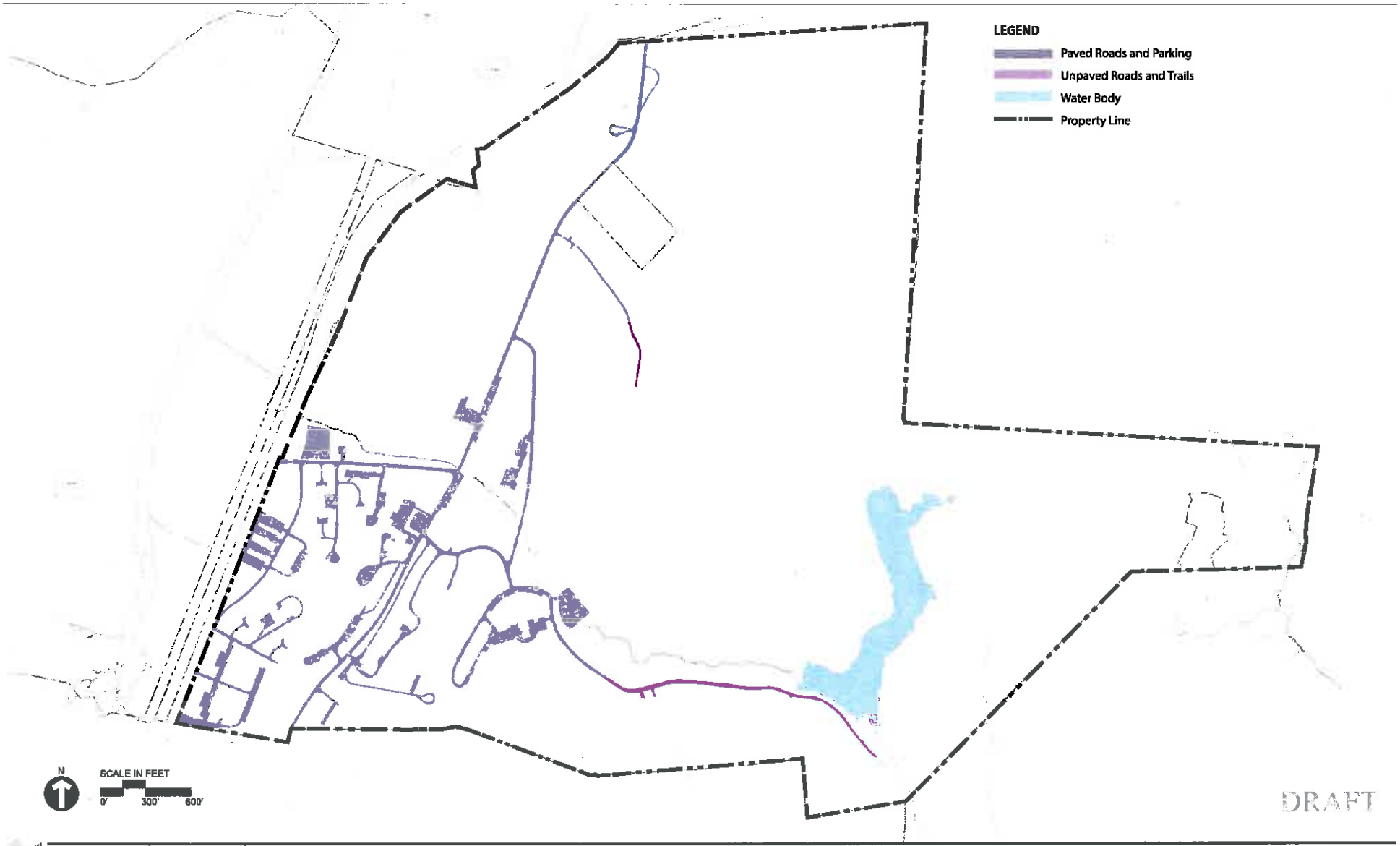
Investigate rainwater collection systems around the campus to support adjacent landscape.
Expand use of drip irrigation over sprinkler.
Use more native and xeriscape plant materials to reduce water need and demand.

Lighting

Lighting plays an important role in the security of the campus as well as an influence upon the aesthetic quality of the landscape – both in fixture style and lighting characteristics. There are multiple lighting fixture types on the campus which provide a basic element of lite connections. However, there is some concern that lighting in and around the campus will require upgrades and expansion.

Guideline:
Review current lighting equipment photometrics and incorporate new technologies to upgrade the quality of lighting on the campus and throughout the campus.

Recommendation:
Identify light levels desired and review equipment options. Identify areas that need improvement in light levels to enhance safety and security as building improvement phasing is implemented.
Review existing lighting equipment and photometrics. Replace current lighting equipment as opportunity allows to improve aesthetics, photometrics, and technology.
Identify alternatives to current light fixture types that support night sky strategies and energy conservation (including LED and Solar).



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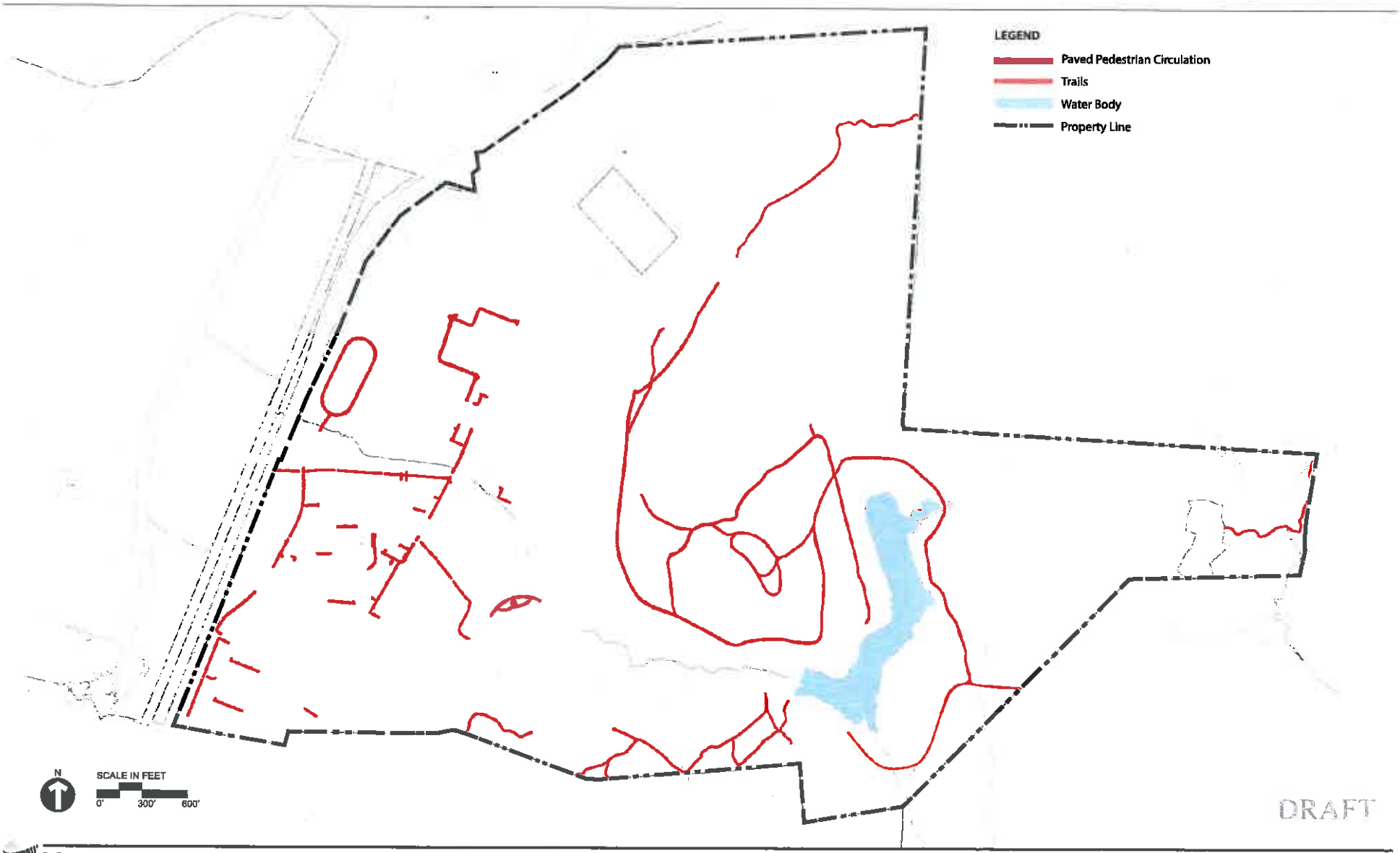
DRAFT OLIVET CENTER LONG RANGE MASTER PLAN
Dover, New York

Existing Vehicular Circulation and Parking

Exhibit
1



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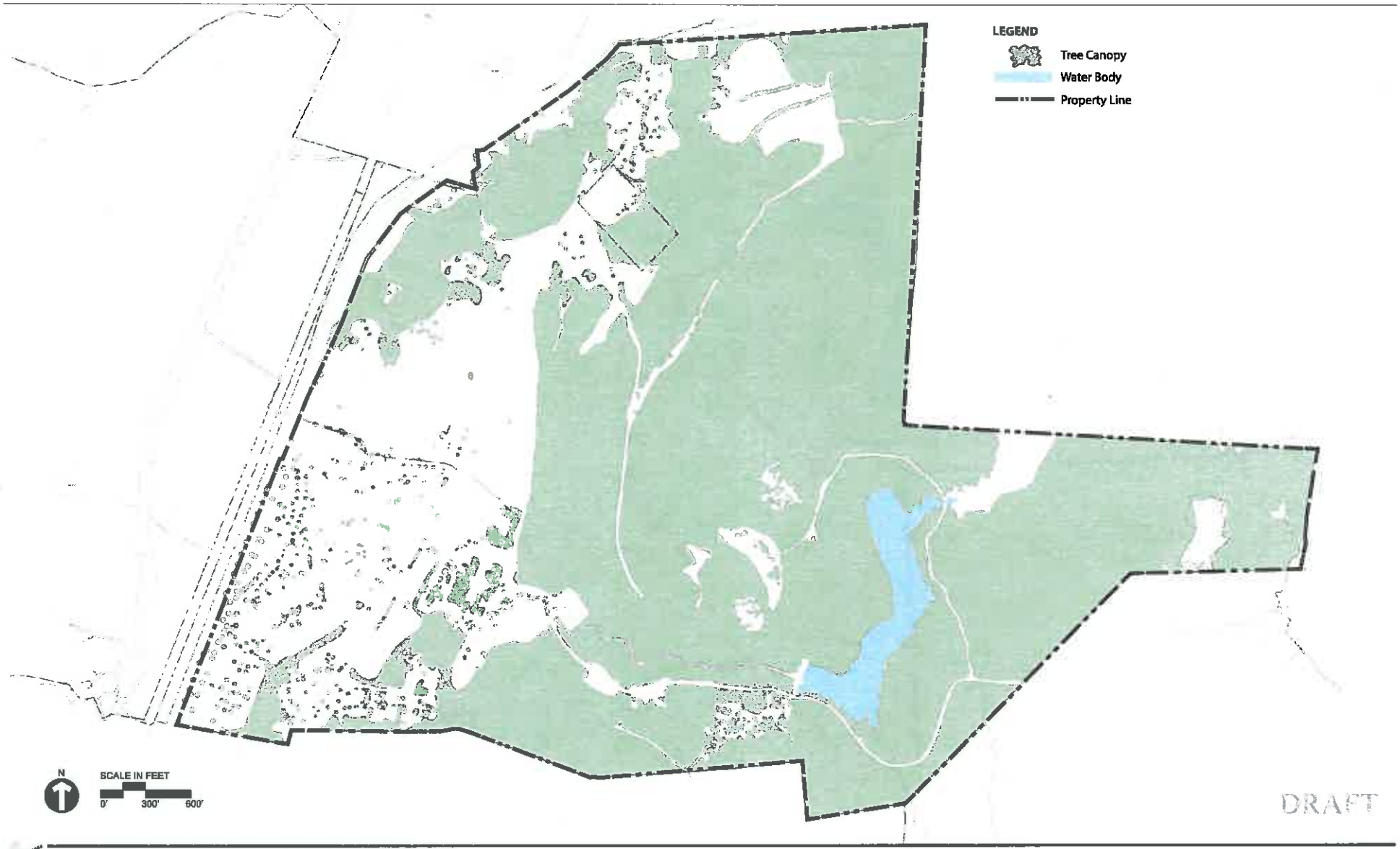
Existing Pedestrian Circulation

Exhibit
2



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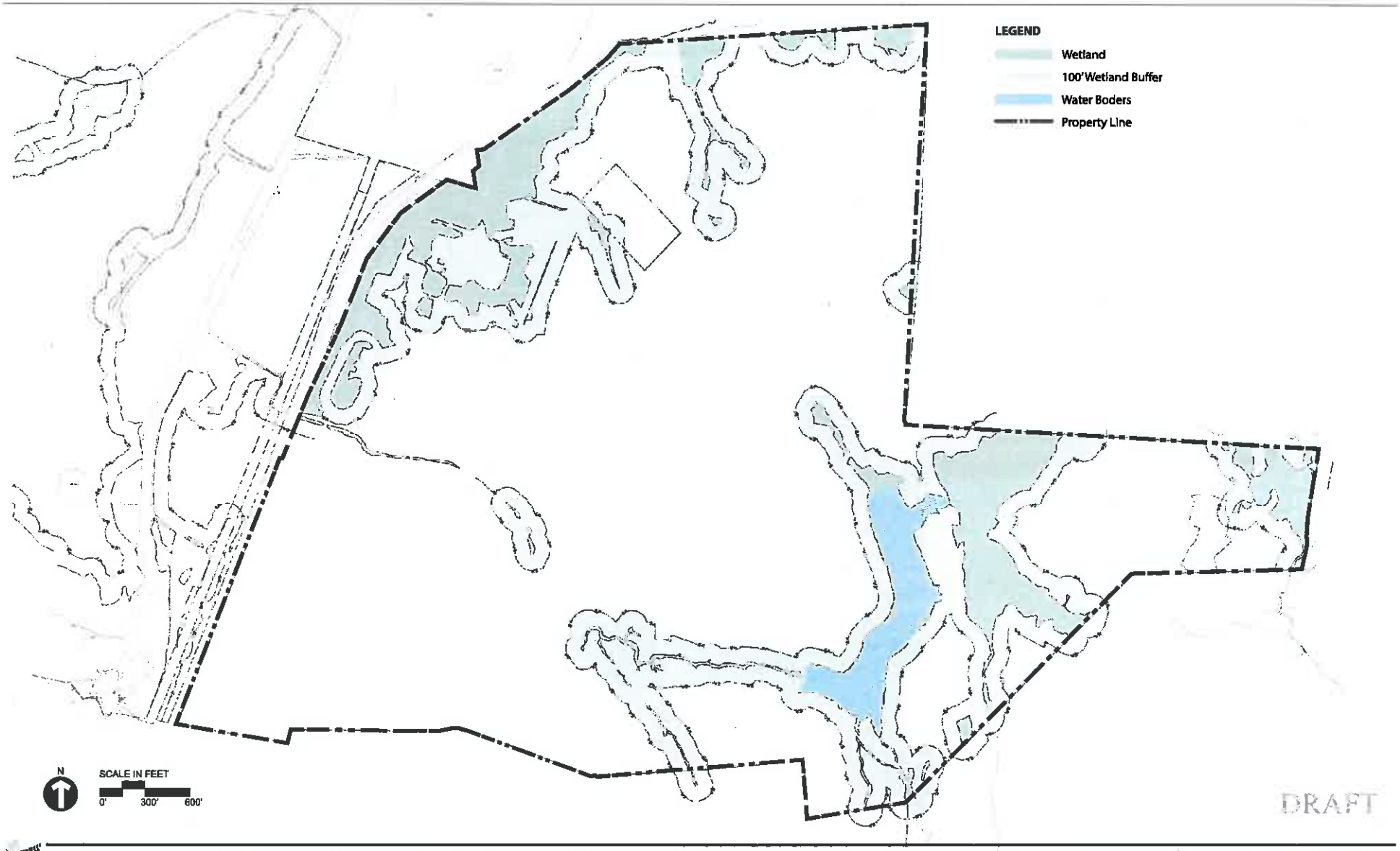
Existing Tree Canopy

Exhibit
3



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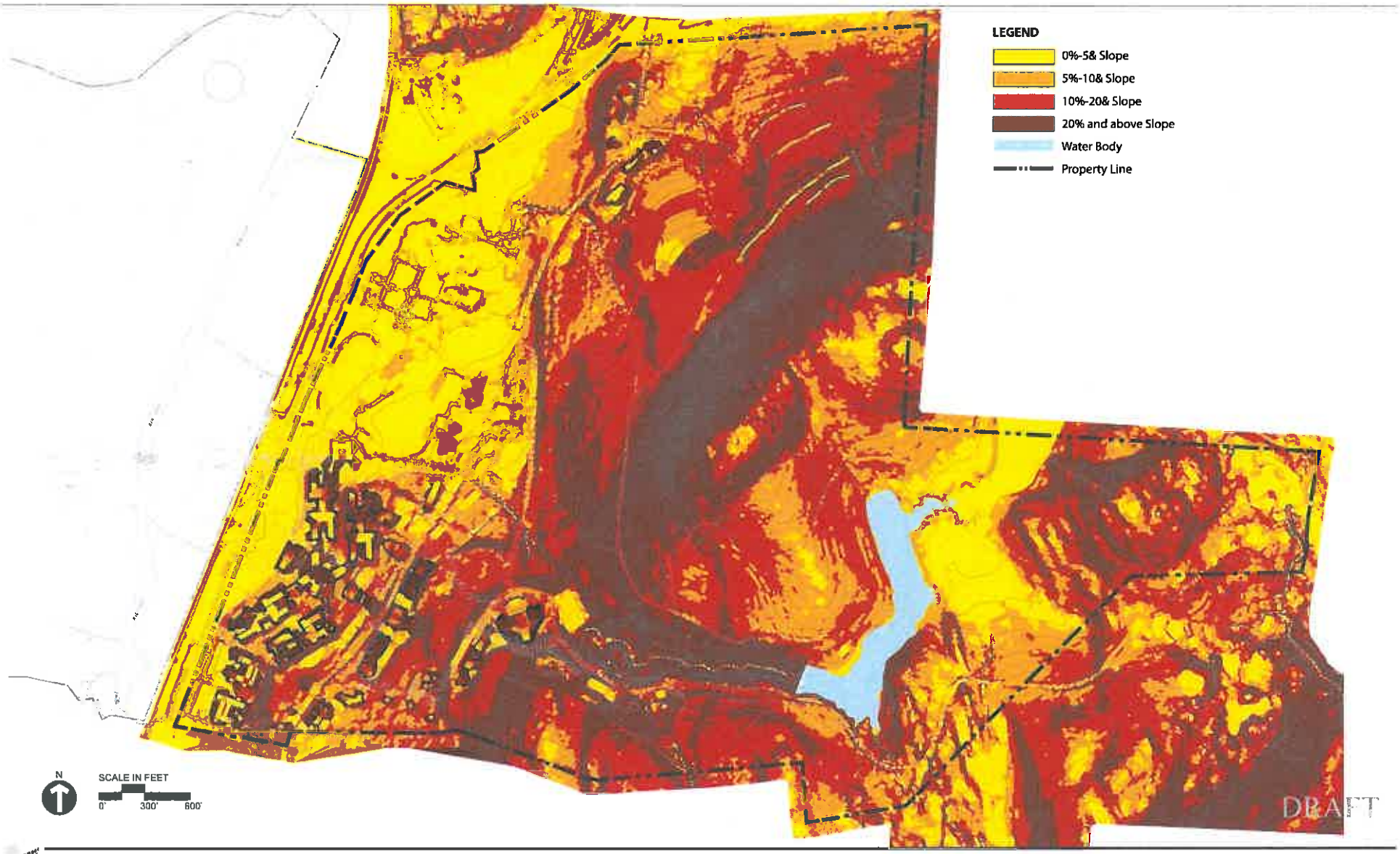
Existing Wetlands and Setbacks

Exhibit
4



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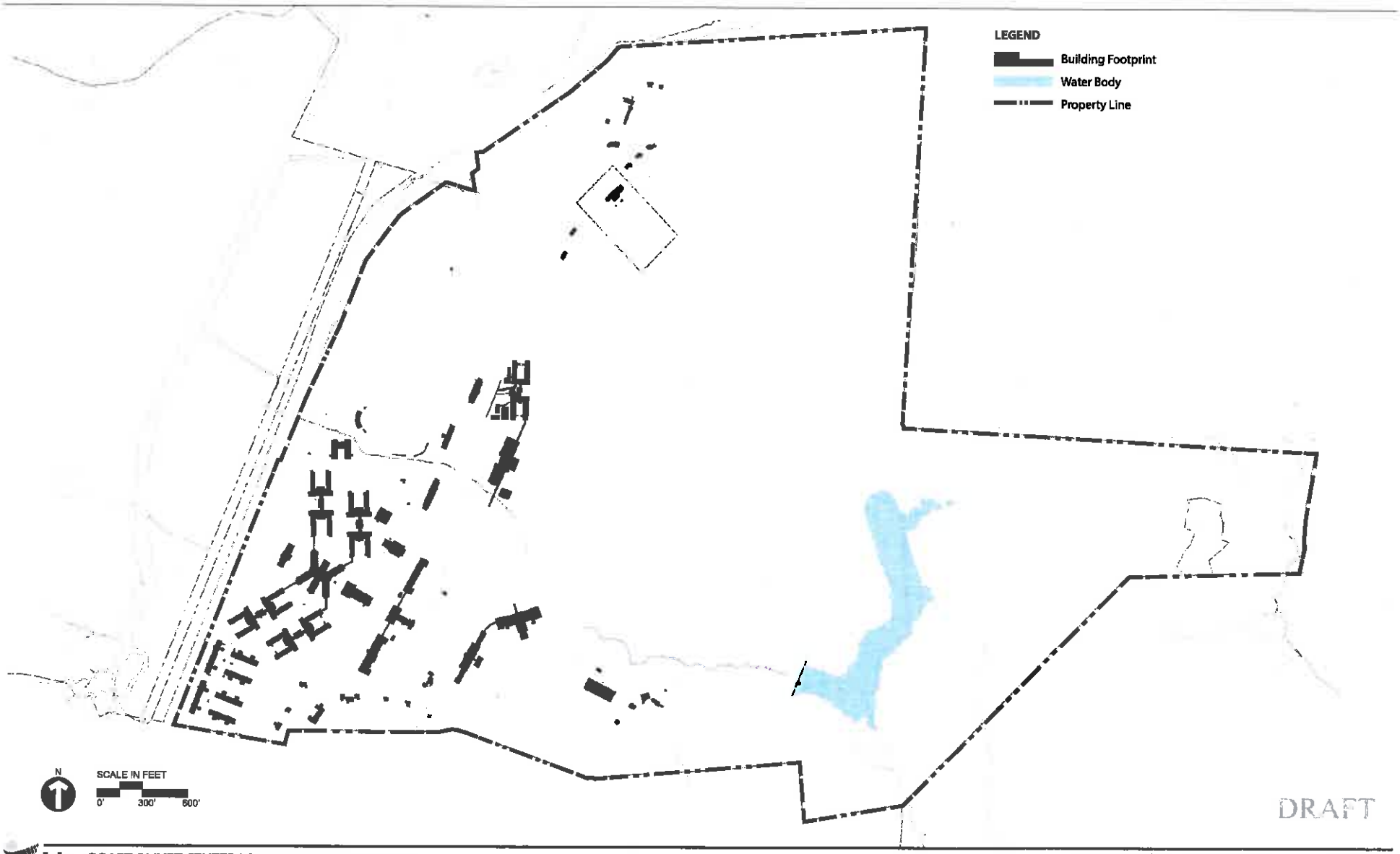
Existing Slope Analysis

Exhibit
5



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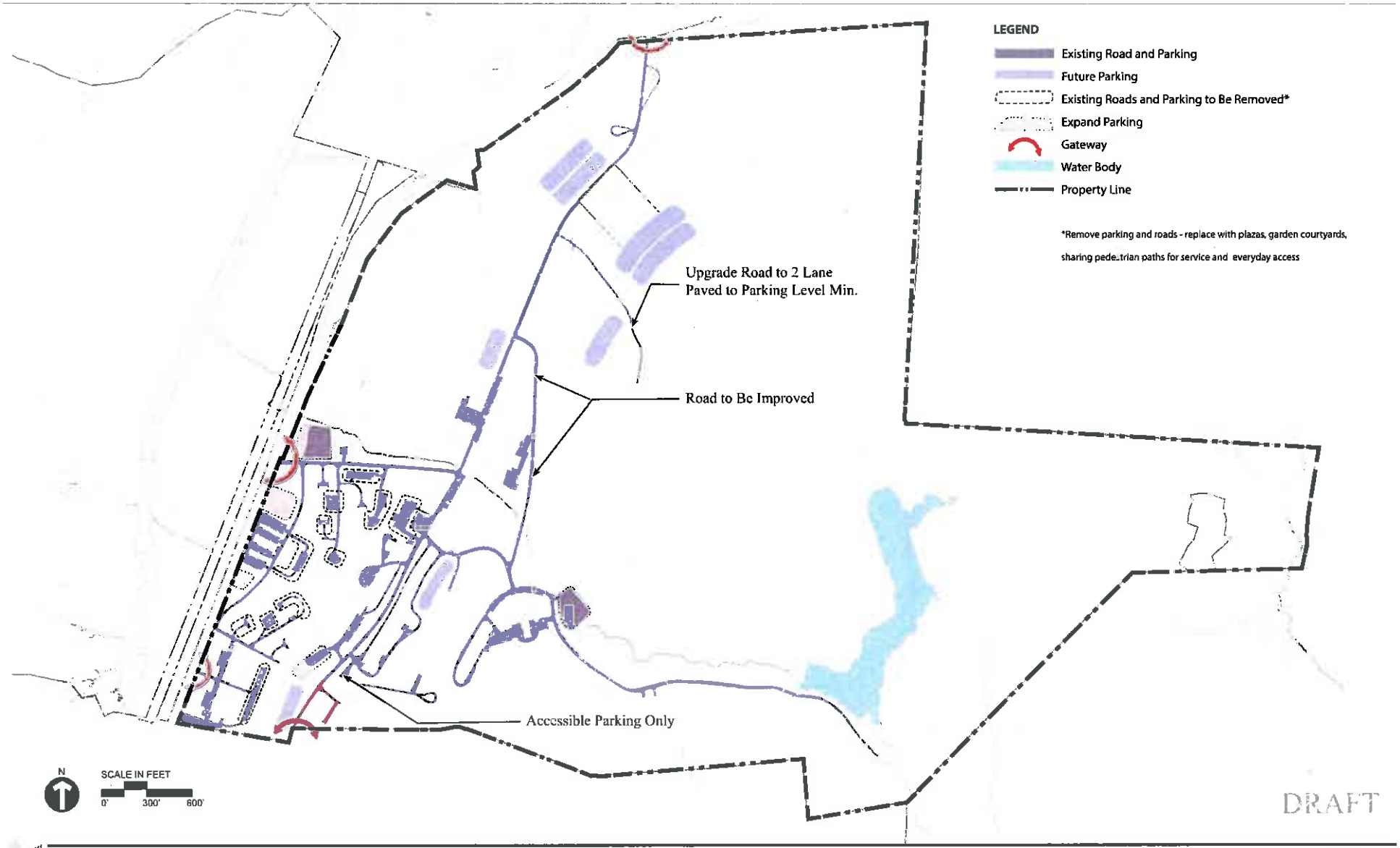
Existing Buiding Figure Ground

Exhibit
6



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Roads and Parking Framework

Exhibit
7

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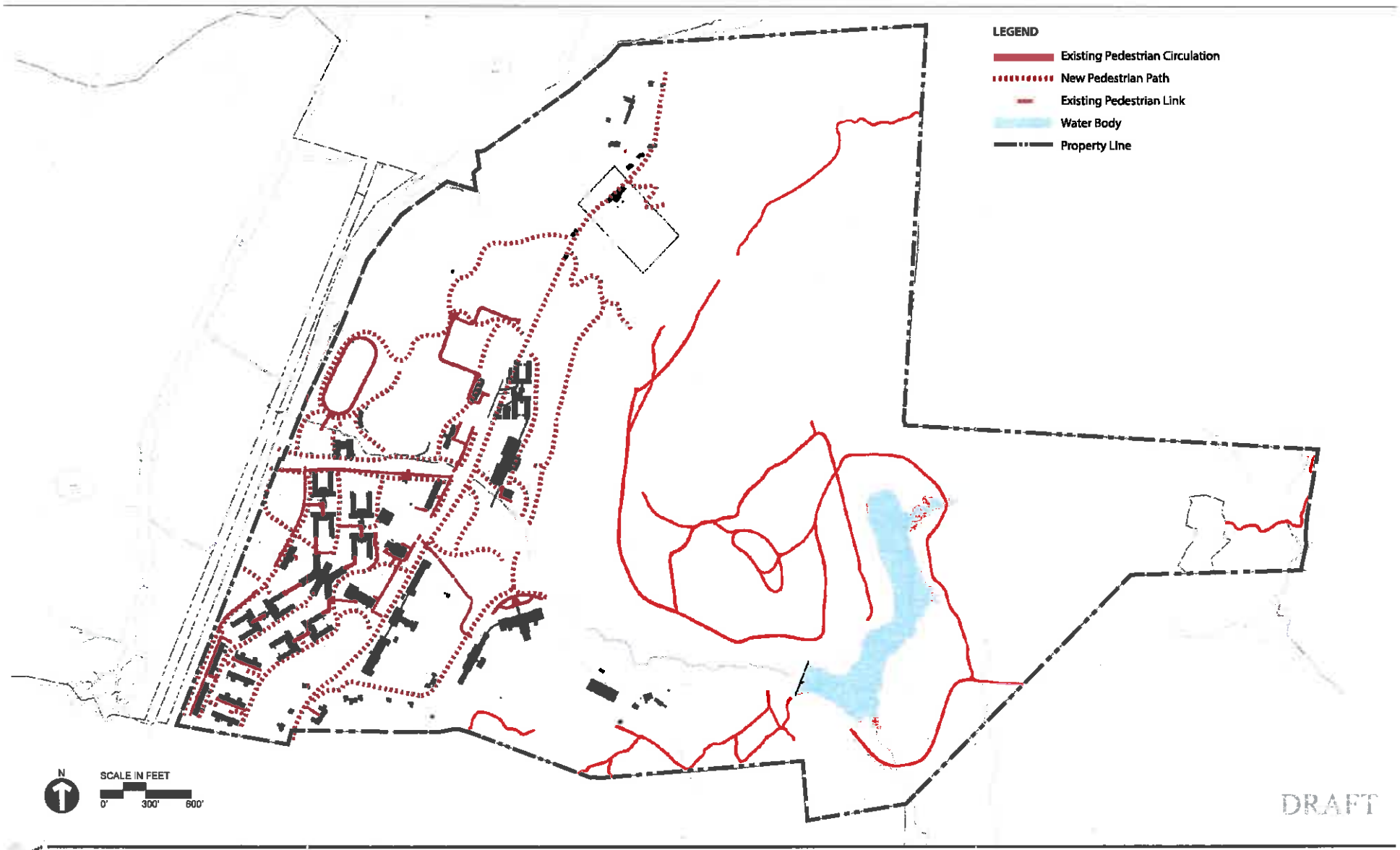
Potential Building Site

Exhibit
8



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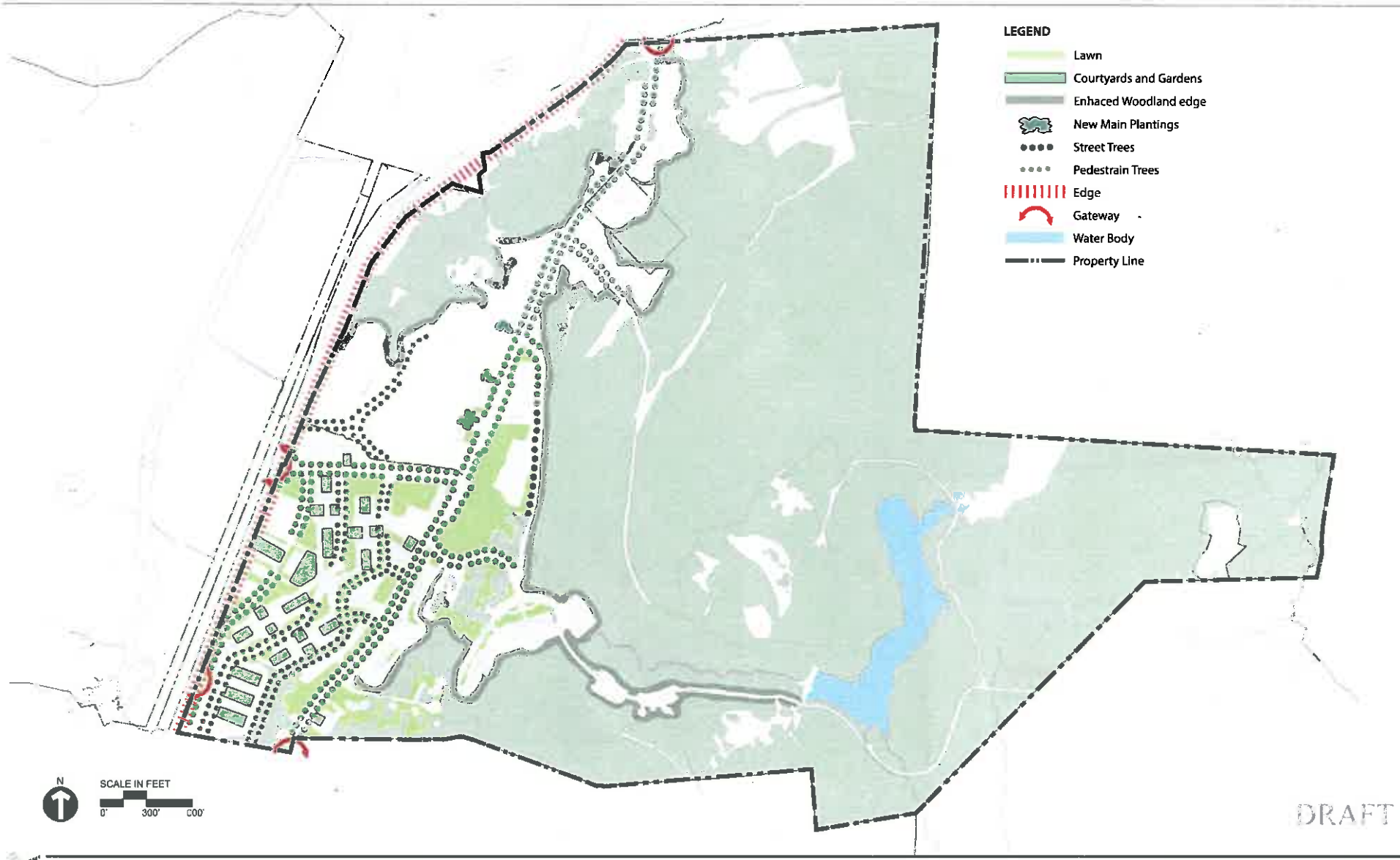
Pedestrian Pathing Framework

Exhibit
9



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Landscape Framework

Exhibit
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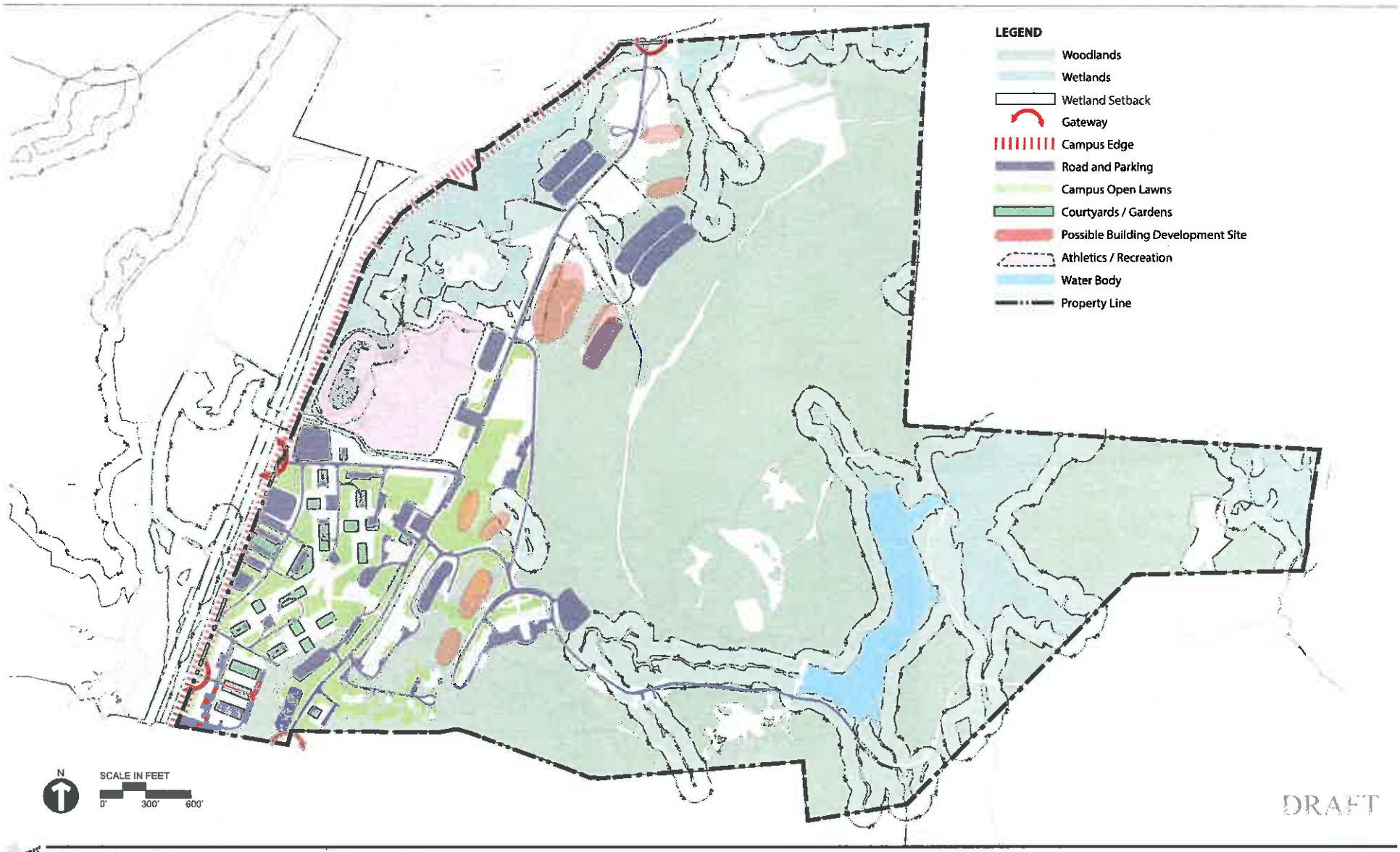

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Landscape Zones

Exhibit
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