EXHIBIT 6

PART 1 OF 2

DRAFT
Environmental
Impact Statement

For the:

Gyrodyne, LLC

Map of Flowerfield Subdivision Application

Hamlet of St. James, Town of Smithtown
Suffolk County, New York

November 2019

Cameron Engineering & Associates, LLP

DRAFT ENVIRONMENTAL IMPACT STATEMENT
for the
Gyrodyne LLC
Map of Flowerfield
Subdivision Application

74.98 acres between Mills Pond Road, NYS Route 25A/North Country Road, and
Long Island Rail Road Right-of-Way
Hamlet of St. James, Town of Smithtown, Suffolk County, New York

LEAD AGENCY: **TOWN OF SMITHTOWN PLANNING BOARD**
CONTACT: Russell K. Barnett, Environmental Protection Director
Department of Environment and Waterways
124 West Main Street
Smithtown, NY 11787
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APPLICANT: **GYRODYNE LLC**
CONTACT: Peter Pitsiokos, Esq.
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1 Flowerfield
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PREPARED BY: **CAMERON ENGINEERING & ASSOCIATES, LLP**
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Economic Analysis

(continued)

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Ecology

PW GROSSER CONSULTING
Mr. Thomas Melia, Senior Project Manager
630 Johnson Avenue, Suite 7
Bohemia, NY 11716-2618
(631) 589-6353
Environmental Testing

DATE OF ACCEPTANCE OF DEIS BY LEAD AGENCY: As per attached Transmittal letter

COMMENTS ON THIS DEIS ARE TO BE SUBMITTED TO THE LEAD AGENCY BY: As per attached Transmittal letter

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1.12. Air Quality

Potential Impacts of Proposed Subdivision – During construction, there will be multiple erosion and sediment control measures implemented and supervised by inspection personnel, which will minimize short-term construction phase impacts. The proposed subdivision represents fewer potential trips than an as-of-right all-medical-office use (no subdivision required), and it represents a smaller truck component than an as-of-right expanded light industrial alternative during weekday peak hours. Traffic mitigation will address existing "Level of Service F" congestion at certain intersections (most notably, on Stony Brook Road at Route 25A, at South Drive, and at Oxhead Road). Additionally, the proposed land uses will not create new point sources for air pollution. The subdivision is therefore not expected to create air quality impacts.

Proposed Mitigation – It is the Applicant's belief that no mitigation is required, apart from the erosion and sediment control measures to be inherently implemented as part of construction, because as-of-right uses generate more traffic, because mitigation will address existing LOS F operation at multiple intersections, and because there will be no new point sources for air pollution.

1.13. Noise

Potential Impacts of Proposed Subdivision – During construction, all Town noise ordinances will be followed to minimize short-term construction phase impacts. The proposed subdivision reduces the potential numbers of total weekday peak hour trips and truck trips compared to the as-of-right alternative (expanded light industrial use). The character of the potential land uses will produce periodic exterior noise, but generally little to no new sounds overnight or on weekends. The building setbacks are significantly far enough removed from Mills Pond Road, Route 25A, and existing off-site buildings that there is no anticipated significant increase in noise levels.

Proposed Mitigation – It is the Applicant's belief that no mitigation is required because the subdivision will reduce potential traffic generation compared to as-of-right development and because buildings will be set back far from the adjacent streets. The intended land uses do not typically generate activity/noise late at night, and the potential new office land use would be relatively inactive on weekends.

1.14. Visual Impacts

Potential Impacts of Proposed Subdivision – The Map of Flowerfield has been designed with minimal disturbance and visual change to the entire road frontage of Route 25A and Mills Pond Road. Along the 0.51 miles of road frontage of Route 25A, only 106 feet will be disturbed for the construction of a limited access (right turn-in and right turn-out) driveway into the Flowerfield campus.

Along Mills Pond Road, one existing site driveway will be widened and improved with disturbance limited to the immediate area. A key focus of analyzing potential visual impacts was determining to what extent future buildings would be visible from Route 25A and Mills Pond Road. Within the Flowerfield campus, the subdivision plan incorporates multiple "green" approaches as further described in this section. The site development

plans that will eventually be prepared for individual lots would be encouraged to build upon the below design approach, with extensive use of landscaping treatments and proper setbacks to create/maintain the visual buffers around existing/new buildings.

Proposed Mitigation – As shown in the visual simulation (provided in Appendix K), the applicant anticipates there will be new planting along portions of Route 25A, with an evergreen and ornamental tree screen behind existing trees. This is anticipated to maintain the existing visual character along this roadway. For most of the property frontage, the views will be almost indistinguishable between the current and post-subdivision conditions.

At the proposed Route 25A driveway, there will be an interruption or gap in the existing landscape. The proposed buildings will not be visible from the road, and the proposed plantings (a combination of mature deciduous and evergreen plantings) will provide an aesthetic infill of new plantings across and within the entrance area. The proposed campus signage is envisioned to be a natural stone material, blending into the landscape.

The lighting has not yet been designed, but in general terms, roadway/walkway lighting will be designed for safety, and supplemental lighting will highlight visually appealing elements of the architecture and landscaping.

Additionally, the proposed building heights will comply with Town ordinance limits, and setbacks will be at least 200 feet from Route 25A and 100 feet from Mills Pond Road.

1.15. Historic and Cultural Resources

Potential Impacts of Proposed Subdivision – There are several historic sites and historic districts within the vicinity of the site. The proposed buildings and setbacks are designed to respect the historic character of the area. The Institute of Long Island Archeology had conducted extensive Stage 1A, Stage 1B, and Stage 2 archaeological studies of the Flowerfield property for the 2008 proposed DEIS. This extensive survey's only finding was a stairway that might lead to intact cellar deposits.

Proposed Mitigation – The area delineated by the archaeological studies is within the 200-foot buffer along NYS Route 25A (North Country Road) near the Mills Pond Road/Route 25A intersection. The area delineated by the archaeological studies will not be modified, so the applicant believes no additional mitigation is necessary. All disturbances within the 200-foot Route 25A buffer will be located to the north and west of this location and limited to the construction of the proposed site driveway, drainage reserve areas and STP leaching areas. The drainage reserve areas and STP leaching areas will be screened by existing vegetation and supplemented with additional plantings. While there will be a change in visual character along the Route 25A Historic Corridor, the visual analysis demonstrates that the change is mitigated by extensive landscape re-vegetation, set back monument signs constructed of natural materials, and employment of a contextual design aesthetic.

1.16. Construction Impacts

Potential Impacts of Proposed Subdivision – Like any large construction project, the future construction associated with this subdivision would have short-term environmental impacts which can include soil erosion, noise, traffic disruption, and dust. Construction will not

necessarily occur on each new lot at the same time; a reasonable construction timeframe estimate is three to four years. Noise and vibration would be generated from construction and worker traffic, heavy equipment operation, and delivery vehicles. There would be far fewer site-generated trips associated with construction than there would be with the full build-out of the subdivision.

Proposed Mitigation – All construction will abide by the Town noise ordinance which prohibits "drilling, earthmoving, excavating, or demolition work between the hours of 6:00 p.m. and 7:00 a.m. the following day on weekdays or at any time on weekends or legal holidays.[9]" Heavy equipment operation or other construction activity that might be accompanied by "loud or disturbing noise" could be subject to further time restrictions, subject to the direction of the Building Department. A Stormwater Pollution Prevention Plan (SWPPP) will be utilized to control erosion and minimize the transfer of site debris onto local roads. Erosion and Sediment Control elements may include silt fences, hay bales, a gravel or crushed-stone construction entrance/exit with a wash-down area, and/or sandbags to protect inlets. Work Zone Traffic Control (WZTC) plans will be implemented to ensure continued two-way vehicle and pedestrian access around the property. Typical WZTC elements include wayfinding and advance lane/shoulder closure signage (e.g. "Shoulder Closed Ahead"), construction fencing, barricades (possibly with flashing beacons/temporary lighting), flaggers to help direct traffic, etc.

1.17. Project Alternatives

The following alternatives represent various land use combinations that demonstrate the range of potential redevelopment and the corresponding potential impacts.

The alternatives were developed, in part, based on the applicant's desire to maintain similar numbers of site-generated peak hour off-site trips. As a result, the same off-site traffic mitigation measures would accommodate any of the alternatives, which have similar off-site trip generation. In fact, traffic could be smaller for any alternative if the office space becomes general or R&D rather than medical office (which generates more traffic).

Of note, this study is not intended to specify an exact number of site trips during each peak hour. Rather, the off-site trips for the Proposed Action and for each alternative yield a reasonable order-of-magnitude range of off-site peak hour trips that result in similar traffic flow conditions. Unless a future application at the Flowerfield property deviates significantly from the numbers in this study (at least 5-10% more off-site trips than what is analyzed herein), it would not trigger a traffic-related reason for further, post-DEIS study.

Additionally, each alternative should be able to provide sufficient parking, with similar or reduced levels of shared and/or landbanked spaces compared to the Proposed Action (which the applicant believes maximizes both of these sustainable design techniques). The different alternatives have different building sizes. To compare alternatives with respect to parking, each 350 s.f. of increased/reduced building space corresponds to one parking space. "350 s.f. per space" is a standard, well-accepted average design ratio that includes

[9] Town Code §207-2(5), Construction Noise Prohibitions accessed via http://ecode360.com/15100108

room for the parking space, the adjacent drive aisle, end islands, and handicapped stalls and aisles. For example, if an alternative has 10,000 s.f. smaller buildings, it leaves room for ±28 more parking spaces since $^{10,000}/_{350} = 28.6$ (the result gets rounded down).

Alternatives 4 and 5, marked with an asterisk (*) do not represent the applicant's intent for the property: there would be little to no synergy with Stony Brook University, no complementary use with the Flowerfield catering hall, no assisted living housing options (which the Town's unadopted Draft CPU states is needed), and more off-site traffic generation or a higher truck component (and associated off-site impacts). These alternatives are discussed in this document solely as a frame of reference with respect to certain potential impacts of the proposed subdivision.

Alternative 6 represents a "public acquisition" alternative if the Town or County subdivides, acquires, and preserves the vacant area as public open space.

Alternative 7 (complies with the unadopted Draft CPU's 50% open space and 300-foot Route 25A buffer, subject to a Suffolk County Health Department variance for the setback of the STP expansion area from the LIRR tracks): 125-room hotel, 128,000 s.f. medical office, 240 assisted living units.

Alternative 8 represents the same land use mix as the Proposed Action with the railroad crossing re-opened between Gyrodyne and the Stony Brook University Research and Development Park, to analyze the possible/future use of the crossing. Gyrodyne has been actively coordinating the proposed re-opening of the railroad crossing. While significant progress has been made in this effort, including support from Stony Brook University, there is still a degree of uncertainty as to when this might be accomplished. Timing associated with LIRR and NYSDOT involvement and with one or more public hearings required to secure an approval results in an uncertain timeframe. Accordingly, Gyrodyne has modified the proposed Preliminary Subdivision Plan to clarify the railroad crossing as a "possible/future re-opening of railroad crossing".

Alternative 9 represents the Proposed Action and an STP with expanded capacity to accommodate flow from the St. James Avenue Business District (currently estimated at 69,600 gallons per day).

Alternative 10 represents a reduced-lot subdivision with six lots, less roadway surface area, a 115-room hotel, 183,150 s.f. of technology office space, and 280 assisted living units.

Table 1-1: Summary of Alternatives

Name	General Description
No Action	Continued use of the existing light industrial buildings and catering hall, with the remainder of the site left vacant
Proposed Action	9-Lot subdivision including the existing light industrial buildings and catering hall plus: • 150-room hotel • 130,000 s.f. of medical, general, or R&D-tech offices • 220 assisted living units

Name	General Description
Alternative 1	Subdivision including the existing light industrial buildings and catering hall plus: • 100-room hotel • 150,000 s.f. of medical offices • 150 assisted living units
Alternative 2	Subdivision including the existing light industrial buildings and catering hall plus: • 150,000 s.f. of medical offices • 50,000 s.f. of general offices • 192 assisted living units
Alternative 3	Subdivision including the existing light industrial buildings and catering hall plus: • 120-room hotel • 136,000 s.f. of medical offices • 250 assisted living units
Alternative 4*	No subdivision, retain the existing light industrial buildings and catering hall, plus: • 244,000 s.f. of medical offices
Alternative 5*	No subdivision, retain the existing light industrial buildings and catering hall, plus: • 382,500 s.f. of light industrial uses as of right
Alternative 6	Public Acquisition with Town or County subdividing property and preserving the vacant area as public open space
Alternative 7	Subdivision complying with the unadopted Draft CPU's 50% open space and 300-foot Route 25A buffer (subject to a Suffolk County Health Department variance for the setback of the STP expansion area from the LIRR tracks): • 125-room hotel • 128,000 s.f. medical office • 240 assisted living units
Alternative 8	Same 9-Lot subdivision as the Proposed Action, with the LIRR crossing re-opened
Alternative 9	Same 9-Lot subdivision as the Proposed Action, with an expanded capacity sewage treatment plant (STP).
Alternative 10	Reduced lot subdivision including three out of the four existing light industrial buildings and catering hall plus: • 115-room hotel • 183,150 s.f. of technology/office space • 280 assisted living units

1.18. Conclusions

The following conclusions are the opinion of the Applicant.

Based upon the analyses herein, and summarized in Table 1-2 starting on page 1-16, the Applicant believes the proposed subdivision is not expected to have significant impacts of the environment. The proposed plan has the advantages of providing synergy with Stony Brook University and the Flowerfield catering hall, a significant increase in tax revenues, and no impact on the local school system (by increasing tax revenues without adding school children).

Table 1-2: Comparison of Proposed Subdivision and Alternatives

Note: Where not specified, the office space could be General Office (e.g. professional office) or Medical Office (relating to medical diagnosis and treatment). Traffic and water-wastewater calculations are based on medical office to be conservative; general office use would reduce trips and water and sanitary compared to what is shown in this table

DESCRIPTION POTENTIAL IMPACT	No Action (Existing Condition) Existing Caterer and Light Industrial (to remain in the subdivision alternatives)	Proposed Action 150-room hotel, 130,000 s.f. office, 220 assisted living units	Alternative 1 100-room hotel, 150,000 s.f. office, 150 assisted living units	Alternative 2 150,000 s.f. medical office, 50,000 s.f. general office, 192 assisted living units	Alternative 3 120-room hotel, 136,000 s.f. office, 250 assisted living units	Alternative 4 244,000 s.f. medical offices	Alternative 5 382,500 s.f. light industrial	Alternative 6 Acquisition for Public Open Space	Alternative 7 125-room hotel, 128,000 s.f. medical office, 240 assisted living units	Alternative 8 150-room hotel, 130,000 s.f. office, 220 assisted living units (RR Crossing opened)	Alternative 9 150-room hotel, 130,000 s.f. office, 220 assisted living units (expanded STP capacity)	Alternative 10 115-room hotel, 183,150 s.f. general office, 280 assisted living units
LAND USE, ZONING, AND COMMUNITY CHARACTER												
Land Use	Industrial, caterer	Industrial, caterer, hotel, medical office, assisted living	Industrial, caterer, hotel, medical office, assisted living	Industrial, caterer, medical and general office, assisted living	Industrial, caterer, hotel, medical office, assisted living	Industrial, caterer, medical office	Industrial, caterer	Public Open Space	Industrial, caterer, hotel, medical office, assisted living	Industrial, caterer, hotel, medical office, assisted living	Industrial, caterer, hotel, medical office, assisted living	Industrial, caterer, hotel, tech/office, assisted living
Zoning	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI
Community Character: Compatibility with the adjacent land uses	No Change	Compatible with residences and Stony Brook University	Compatible with residences and Stony Brook University	Compatible with residences and Stony Brook University	Compatible with residences and Stony Brook University	Compatible with Stony Brook Medical	Not compatible with residences or Stony Brook University	Compatible with residences and Stony Brook University	Compatible with residences and Stony Brook University	Compatible with residences and Stony Brook University	Compatible with residences and Stony Brook University	Compatible with residences and Stony Brook University
Synergy with Stony Brook University	No Change	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes
Synergy with Caterer	No Change	Yes	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes
Improve the visual appearance and views of the area to the surrounding community	No Change	Improvement in visual appearance	Improvement in visual appearance	Improvement in visual appearance	Improvement in visual appearance	No improvement	No improvement	Improvement in visual appearance	Improvement in visual appearance	Improvement in visual appearance	Improvement in visual appearance	Improvement in visual appearance
Landscaping	34.84 acres	38.97 acres	39.26 acres	39.23 acres	38.92 acres	40.17 acres	40.17 acres	36.73 acres	39.20 acres	38.97 acres	38.97 acres	41.56 acres
Air Quality	No Change	No significant impact	No significant impact	No significant impact	No significant impact	No significant impact	Potential impact	No significant impact	No significant impact	No significant impact	No significant impact	No significant impact
Noise	No Change	Similar noise	Similar noise	Similar noise	Similar noise	Similar noise	More noise	Similar noise	Similar noise	Similar noise	Similar noise	Similar noise
COMMUNITY SERVICES AND UTILITIES												
Estimated Water Demand (Potable Water)	18,834 gpd	87,534 gpd	72,660 gpd	59,280 gpd	86,460 gpd	43,234 gpd	34,134 gpd	18,834 gpd	85,610 gpd	87,534 gpd	87,534 gpd	75,110 gpd
Estimated Water Demand (Irrigation)	6,000 gpd	11,000 gpd	9,000 gpd	9,000 gpd	9,000 gpd	8,000 gpd	11,000 gpd	7,000 gpd	11,000 gpd	11,000 gpd	11,000 gpd	12,000 gpd
Estimated Wastewater Flow/Treatment Method	18,834 gpd/Utilize On-site Septic System	87,534 gpd/Connect to New 100,000 gpd Treatment Plant	72,660 gpd/Connect to New 100,000 gpd Treatment Plant	59,280 gpd/Connect to New 100,000 gpd Treatment Plant	86,460 gpd/Connect to New 100,000 gpd Treatment Plant	43,234 gpd/Utilize On-site Septic System	34,134 gpd/Utilize On-site Septic System	18,834 gpd/Utilize On-site Septic System	85,610 gpd/Connect to New 100,000 gpd Treatment Plant	87,534 gpd/Connect to New 100,000 gpd Treatment Plant	157,134 gpd/Connect to New 171,000 gpd Treatment Plant	75,110 gpd/Connect to New 100,000 gpd Treatment Plant
Schoolchildren Range	0	0	0	0	0	0	0	0	0	0	0	0
New Full Time Employment (Construction Phase)	0	1,507	1,279	1,298	1,531	969	781	10	1,474	1,507	1,507	1,518
New Full Time Employment (Build-out)	0	1,078	1,078	1,171	1,106	1,349	731	6	1,065	1,078	1,078	1,085
School Tax	$ 270,000	$ 2,850,000	$ 2,420,000	$ 2,550,000	$ 2,930,000	$ 1,860,000	$ 760,000	$0	$ 2,880,000	$ 2,850,000	$ 2,850,000	$ 3,170,000

Note: Where not specified, the office space could be General Office (e.g. professional office) or Medical Office (relating to medical diagnosis and treatment). Traffic and water-wastewater calculations are based on medical office to be conservative; general office use would reduce trips and water and sanitary compared to what is shown in this table

DESCRIPTION POTENTIAL IMPACT	No Action (Existing Condition) Existing Caterer and Light Industrial (to remain in the subdivision alternatives)	Proposed Action 150-room hotel, 130,000 s.f. office, 220 assisted living units	Alternative 1 100-room hotel, 150,000 s.f. office, 150 assisted living units	Alternative 2 150,000 s.f. medical office, 50,000 s.f. general office, 192 assisted living units	Alternative 3 120-room hotel, 136,000 s.f. office, 250 assisted living units	Alternative 4 244,000 s.f. medical offices	Alternative 5 382,500 s.f. light industrial	Alternative 6 Acquisition for Public Open Space	Alternative 7 125-room hotel, 128,000 s.f. medical office, 240 assisted living units	Alternative 8 150-room hotel, 130,000 s.f. office, 220 assisted living units (RR Crossing opened)	Alternative 9 150-room hotel, 130,000 s.f. office, 220 assisted living units (expanded STP capacity)	Alternative 10 115-room hotel, 183,150 s.f. general office, 280 assisted living units
General Tax	$ 130,000	$ 1,310,000	$ 1,110,000	$ 1,170,000	$ 1,350,000	$ 860,000	$ 350,000	$0	$ 1,320,000	$ 1,310,000	$ 1,310,000	$ 1,455,000
Total Tax	$ 400,000	$ 4,160,000	$ 3,530,000	$ 3,720,000	$ 4,280,000	$ 2,720,000	$ 1,110,000	$0	$ 4,200,000	$ 4,160,000	$ 4,160,000	$ 4,625,000
Net New Total Tax	0	$ 3,760,000	$ 3,130,000	$ 3,320,000	$ 3,880,000	$ 2,320,000	$ 710,000	$0	$ 3,800,000	$ 3,760,000	$ 3,760,000	$ 4,225,000
TRANSPORTATION												
New AM Peak Hour Trips	0	357	345	385	354	409	260	0	343	357	357	318
New PM Peak Hour Trips	0	538	533	555	538	697	241	0	517	538	538	344
New Saturday Peak Hour Trips	0	324	295	260	319	294	157	0	310	324	324	256
Internal Trips with Stony Brook University	No	No	No	No	No	No	No	No	No	Yes	No	No
Existing industrial truck and vehicular traffic	AM hours: 60 to 170 trips including 13 to 49 (20% to 38%) trucks PM hours: 70 to 178 trips, including 14 to 31 (11% to 27%) trucks Saturday hours: 56 to 105 trips, 0 trucks	Same as No Action (Existing uses remain)	Same as No Action (Existing uses remain)	Same as No Action (Existing uses remain)	Same as No Action (Existing uses remain)	Same as No Action (Existing uses remain)	Same as No Action (Existing uses remain)	Same as No Action (Existing uses remain)	Same as No Action (Existing uses remain)	Same as No Action (Existing uses remain)	Same as No Action (Existing uses remain)	Same as No Action (Existing uses remain)
Additional Truck Trips (Post build-out)	0	±5% of the additional trips: 16 to 27	±5% of the additional trips: 15 to 27	±5% of the additional trips: 13 to 28	±5% of the additional trips: 16 to 27	±5% of the additional trips: 15 to 35	±30% of the additional trips: 47 to 78	No increase beyond maintenance trucks	±5% of the additional trips: 16 to 26	±5% of the additional trips: 16 to 27	±5% of the additional trips: 16 to 27	±5% of the additional trips: 13 to 17
Additional Industrial Traffic	0	0	0	0	0	0	47 to 78	0	0	0	0	0
NITROGEN LOADING												
Nitrogen Contribution (lb/acre/yr)	33.0	32.4	31.7	31.7	31.7	87.6	69.4	33.4	32.3	32.4	48.8	33.0

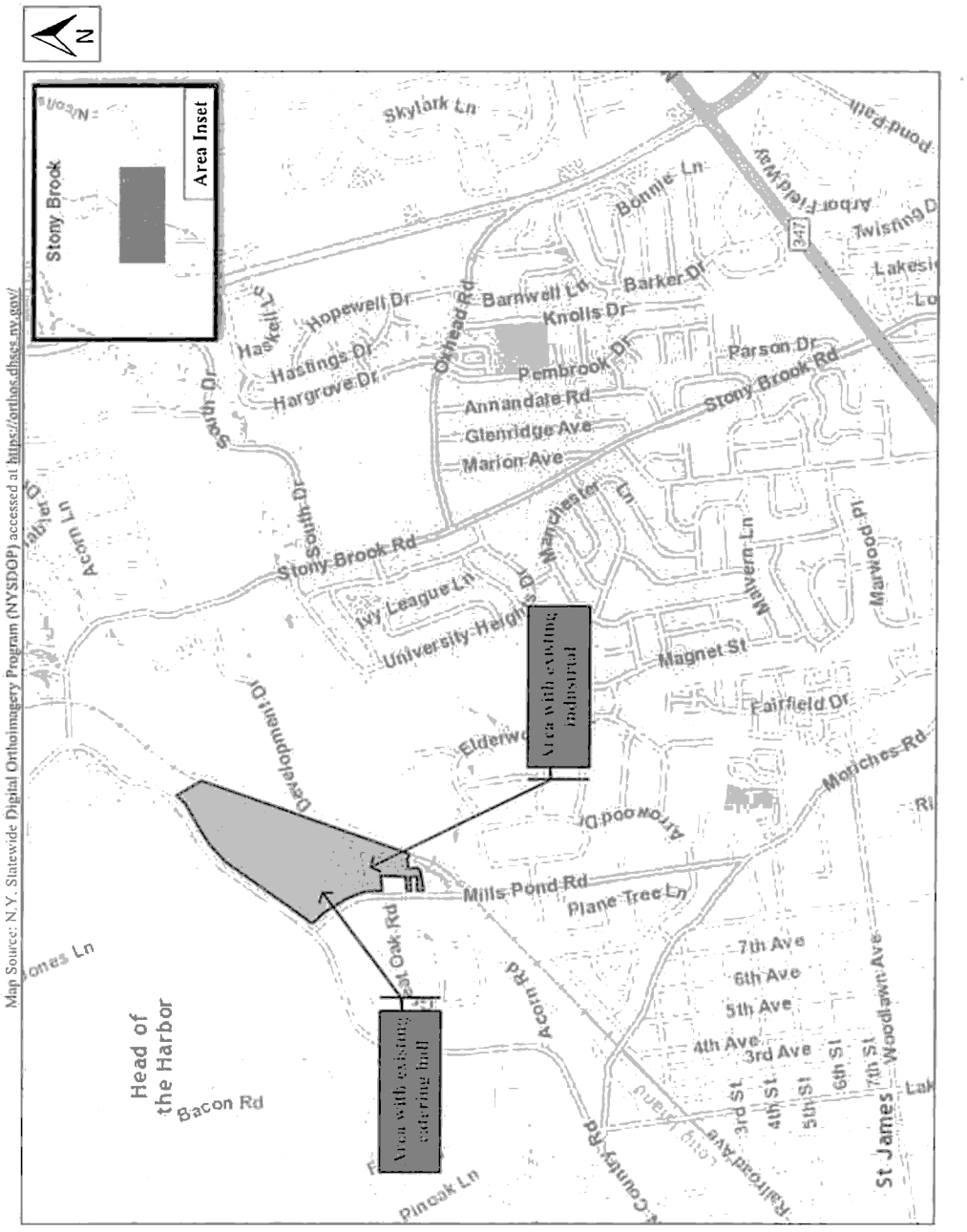


Figure 1-1: Location Map

Map Source: N.Y. Statewide Digital Orthoimagery Program (NYSDOP) accessed at https://orthos.dhses.ny.gov/

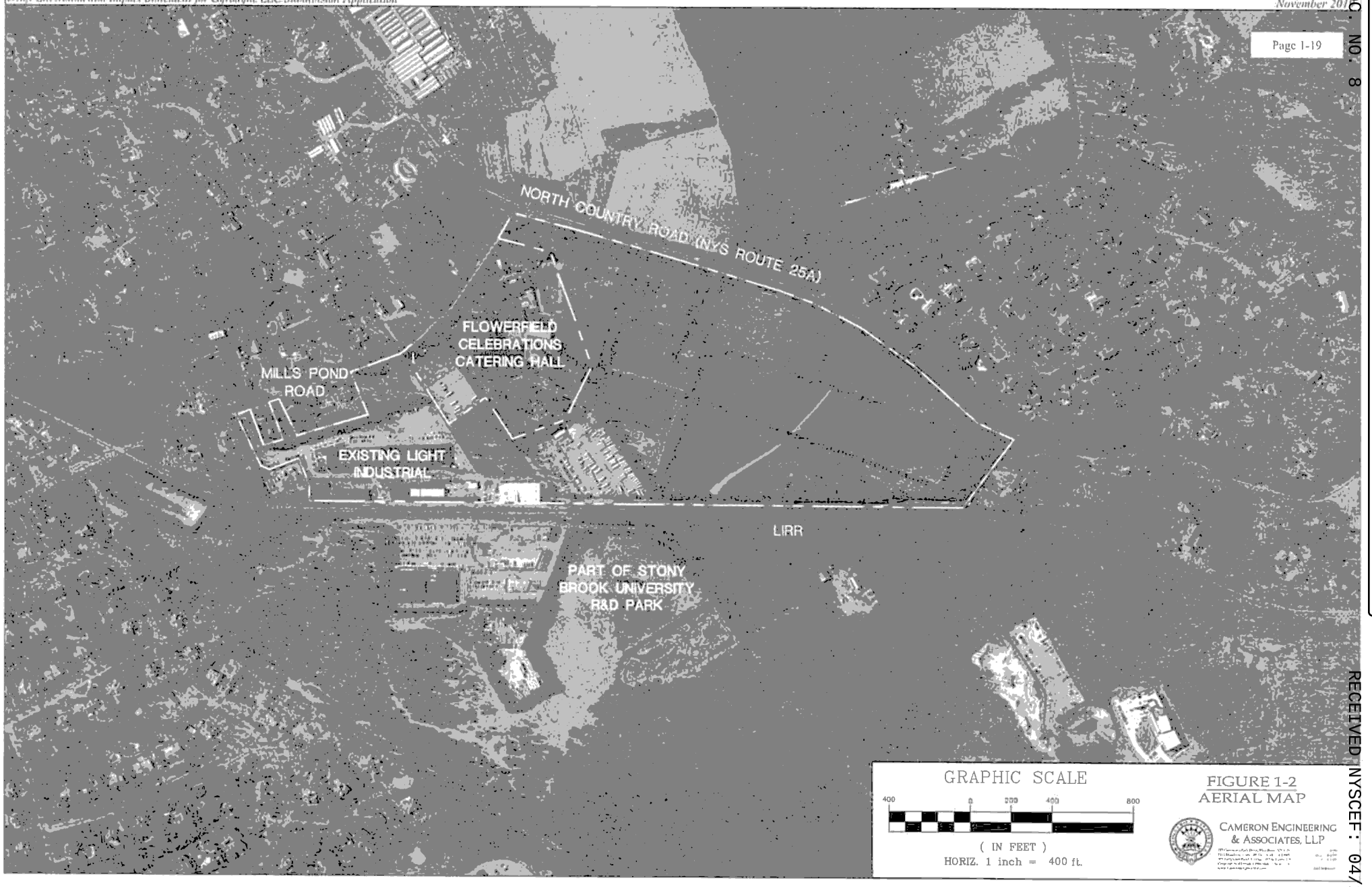


FIGURE 1-2
AERIAL MAP

CAMERON ENGINEERING & ASSOCIATES, LLP

KEY LOCATION MAP
(SCALE 1"=1000')

SITE DATA:

APPLICANT & OWNER'S INFORMATION:
FLOWERFIELD
(SEE TO OWNER'S) S.B.L. 84
SAINT JAMES, NY 11780

ZONING CLASSIFICATION

LI DISTRICT

MIN. LOT AREA:	60,000 SF
MIN. FRONT YARD	50 FEET
MIN. SIDE & REAR YARD	0 FEET
MIN. BUFFER TO RESIDENTIAL DISTRICT	100 FEET

R-40 DISTRICT

MIN. LOT AREA:	41,560 SF
MIN. LOT FRONTAGE AT SETBACK	175 FEET
MIN. ROAD FRONTAGE	175 FEET
MIN. FRONT YARD	50 FEET
MIN. REAR YARD	100 FEET
MIN. SIDE YARD WIDTH	AMY ONE 30 FEET, BOTH 80 FEET

AREA OF SITE:
74.84 AC

83.41 AC. IN ZONING DISTRICT LI
8.27 AC. IN ZONING DISTRICT R-40

TOTAL NUMBER OF PROPOSED LOTS: 8

NOTE:
DISTRICT SHOWN, SECTION 40, BLOCK 2, TAX LOT 4, TAX LOT 18.2, TAX LOT 12.4, TAX LOT 14, & TAX LOT 15

DISTRICTS:
SCHOOL DISTRICT - SMITHTOWN CENTRAL SCHOOL DISTRICT
WATER DISTRICT - ST JAMES WATER DISTRICT
FIRE DISTRICT - ST JAMES FIRE DISTRICT
POLICE DISTRICT - SUFFOLK COUNTY POLICE DEPARTMENT
POST OFFICE - ST JAMES

soil data:
CUT VOLUME: 250,000 CY
FILL VOLUME: 250 CY

net fill: 249,750 CUBIC YARDS

LEGEND:

PROPERTY BOUNDARY

PROPOSED LOT LINE

PROPOSED LOT NUMBER & PROPOSED LOT AREA — (7) 8.94 AC.

EASEMENT LINE

ROUTE MARKER SIGN

PROPOSED WATER MAIN

PROPOSED ROADWAY LIGHTS

PROPOSED SEWERED DWELLING UNIT

LIMITS OF SEWAGE TREATMENT PLANT EASEMENT

EXISTING WOODS EDGE

EXISTING WETLANDS LINE

PROPOSED ASPHALT PAVING AREA

EXISTING CONCRETE PAVEMENT TO REMAIN

ZONING DISTRICT BOUNDARY — R-40 / LI

STORMWATER TREATMENT AREA

PROPOSED SHED

SOIL BORING LOCATION

STRUCTURE TABLE

STRUCTURE NAME	RIM/GRATE ELEV.	PIPES:
DMH = 1	158.38	18" HDPE INV IN =171.97 (N) 18" HDPE INV OUT =171.21 (SE)
DMH = 2	158.31	18" HDPE INV IN =171.16 (NE) 18" HDPE INV OUT =171.01 (SW)
CB = 3	155.12	18" HDPE INV IN =169.98 (N) 18" HDPE INV OUT =171.86 (S)
CB = 4	160.29	18" HDPE INV IN =169.87 (S)
CB = 5	156.28	18" HDPE INV IN =169.67 (NE) 18" HDPE INV OUT =163.97 (SW)
CB = 6	154.35	18" HDPE INV IN =156.46 (E) 18" HDPE INV OUT =163.27 (SE) 18" HDPE INV OUT =160.86 (N)
DMH = 7	155.86	18" HDPE INV IN =168.88 (NW)
CB = 8	154.36	18" HDPE INV IN =168.66 (NE) 18" HDPE INV OUT =168.51 (SW)
CB = 9	150.77	18" HDPE INV IN =168.41 (NE) 18" HDPE INV OUT =168.26 (SW)
CB = 10	146.58	18" HDPE INV IN =168.16 (NE) 18" HDPE INV OUT =167.96 (SW)
CB = 11	144.87	24" HDPE INV IN =163.98 (E) 24" HDPE INV OUT =163.68 (SE) 24" HDPE INV OUT =161.88 (S)
CB = 12	154.77	18" HDPE INV IN =159.91 (E) 18" HDPE INV OUT =159.76 (SW)
CB = 13	154.76	18" HDPE INV IN =159.26 (SE)
CB = 14	154.90	18" HDPE INV IN =157.91 (NW) 18" HDPE INV OUT =157.81 (SW)
CB = 15	153.20	24" HDPE INV IN =147.79 (NE) 24" HDPE INV OUT =147.79 (SW)
CB = 16	151.39	18" HDPE INV IN =149.67 (NE) 18" HDPE INV IN =149.67 (NW) 18" HDPE INV OUT =149.57 (SW)
CB = 17	151.05	18" HDPE INV IN =149.22 (NE) 18" HDPE INV OUT =149.12 (SW)
CB = 18	151.10	18" HDPE INV IN =149.01 (NE) 18" HDPE INV OUT =148.91 (SW)
CB = 19	150.06	18" HDPE INV IN =148.85 (NE) 18" HDPE INV OUT =148.75 (SW)
CB = 20	149.70	18" HDPE INV IN =148.54 (NE) 18" HDPE INV OUT =148.44 (SW)
DMH = 21	154.59	12" HDPE INV IN =149.79 (NE) 15" HDPE INV OUT =149.59 (S)
DMH = 22	158.08	30" HDPE INV IN =150.58 (N) 30" HDPE INV OUT =150.58 (SE)
DMH = 23	158.08	30" HDPE INV IN =150.78 (NW) 30" HDPE INV OUT =150.58 (N)
DMH = 24	156.03	15" HDPE INV IN =152.83 (E) 15" HDPE INV OUT =152.63 (W)
DMH = 25	154.70	15" HDPE INV IN =152.50 (E) 15" HDPE INV OUT =152.30 (W)

STRUCTURE TABLE

STRUCTURE NAME	RIM/GRATE ELEV.	PIPES:
DMH = 26	160.00	18" HDPE INV IN =144.38 (NE) 18" HDPE INV OUT =144.28 (NW)
DMH = 27	149.70	18" HDPE INV IN =144.18 (NE) 18" HDPE INV OUT =144.08 (NW)
DMH = 28	146.98	18" HDPE INV IN =143.87 (SE) 18" HDPE INV OUT =143.86 (NW)
DMH = 29	149.69	18" HDPE INV IN =143.77 (SE) 18" HDPE INV OUT =143.57 (NW)
DMH = 30	150.08	18" HDPE INV IN =143.67 (SE) 18" HDPE INV OUT =143.37 (NW)
DMH = 31	146.08	24" HDPE INV IN =143.27 (SE) 24" HDPE INV OUT =143.27 (NW)
DMH = 32	149.88	18" HDPE INV IN =143.17 (SE) 18" HDPE INV OUT =143.07 (NW)
DMH = 33	149.68	18" HDPE INV IN =143.06 (SE) 18" HDPE INV OUT =142.86 (NW)
DMH = 34	148.90	18" HDPE INV IN =142.81 (SE) 24" HDPE INV OUT =142.51 (W)
SMH = 35	150.28	
SMH = 36	149.79	
SMH = 37	150.48	15" HDPE INV OUT =149.67 (W)
SMH = 38	150.24	15" HDPE INV IN =149.50 (N) 15" HDPE INV OUT =149.19 (SE)
SMH = 39	148.69	15" HDPE INV IN =147.89 (NW) 15" HDPE INV IN =148.83 (NE) 15" HDPE INV IN =149.88 (E)
DMH = 40	156.61	15" HDPE INV IN =149.72 (E) 15" HDPE INV OUT =149.52 (SW)
SMH = 41	151.00	15" HDPE INV IN =149.75 (N) 15" HDPE INV OUT =149.75 (NE) 15" HDPE INV OUT =149.75 (SE)
SMH = 42	159.27	12" HDPE INV IN =158.58 (SW)
SMH = 43	157.00	12" HDPE INV IN =156.90 (NE)
SMH = 44	154.21	15" HDPE INV IN =149.21 (E) 15" HDPE INV OUT =149.01 (SW)
SMH = 45	152.98	15" HDPE INV IN =149.78 (NE)
HEADWALL = 1	155.12	12" HDPE INV IN =150.58 (NW)
HEADWALL = 2	152.83	18" HDPE INV IN =150.79 (NE)
HEADWALL = 3	149.08	24" HDPE INV IN =146.68 (NW)
HEADWALL = 4	151.01	24" HDPE INV IN =148.81 (N)
HEADWALL = 5	148.88	24" HDPE INV IN =146.68 (NE)
HEADWALL = 6	148.74	24" HDPE INV IN =146.54 (NE)
EXISTING STRUCTURE	150.15	18" HDPE INV OUT =147.95 (W)

DRAINAGE CALCULATIONS

TOTAL DRAINAGE AREA AND IMPERVIOUS COVERAGE BREAK UP:

A. SUB-BASIN #1 (TRAIL 3):

SUB-BASIN TRIBUTARY AREA INCLUDE OF:

RESIDENT STORAGE:
LANDSCAPED AREA: 41,653 SF x 0.2 x 8"/12 = 13,884 CF
PAVED AREA: 11,225 SF x 1.0 x 8"/12 = 7,483 CF
TOTAL RESIDENT SUB-AREA STORAGE = 21,368 CF

PROPOSED STORAGE:
DRY DETENTION BASIN = 59,415 CF

B. SUB-BASIN #2 (MILLS POND):

SUB-BASIN TRIBUTARY AREA INCLUDE OF:

RESIDENTIAL STORAGE:
LANDSCAPED AREA: 363,644 SF x 0.2 x 8"/12 = 64,715 CF
PAVED AREA: 71,884 SF x 1.0 x 8"/12 = 47,923 CF
ROOF AREA: 34,217 SF x 1.0 x 8"/12 = 22,811 CF
TOTAL RESIDENT SUB-AREA STORAGE = 137,899 CF

PROPOSED STORAGE:
WETLAND POND STORAGE VOLUME = 76,000 CF

OVERFLOW VOLUME:
127,658 CF = 79,534 CY
OVERFLOW VOLUME IS CONVEYED TO DRAIN 1 AND 2. = 80 MW CF

C. SUB-BASIN #3 (TRAIL 3 &):

SUB-BASIN TRIBUTARY AREA INCLUDE OF:

RESIDENT STORAGE:
LANDSCAPED AREA: 284,788 SF x 0.2 x 8"/12 = 61,758 CF
PAVED AREA: 17,313 SF x 1.0 x 8"/12 = 10,261 CF
OVERFLOW VOLUME FROM SUB-BASIN #2 = 81,466 CF
TOTAL RESIDENT SUB-AREA STORAGE = 121,438 CF

DRAINAGE BASIN:
(10) - 1'(1) OPENINGS WITH 36" EFFECTIVE DEPTH
10 x 100.00 CF/OF x 20 VF = 34,311 CF
DRA 1 STORAGE VOLUME = 34,311 CF
DRA 3 STORAGE VOLUME = 87,240 CF
TOTAL DRAINAGE STORAGE VOLUME = 143,616 CF

D. SUB-BASIN #4:

SUB-BASIN TRIBUTARY AREA INCLUDE OF:

RESIDENT STORAGE:
PAVED AREA: 17,161 SF x 1.0 x 8"/12 = 10,241 CF
TOTAL RESIDENT SUB-AREA STORAGE = 10,241 CF

DRAINAGE STORAGE:
(9) - 1'(1) OPENINGS WITH 36" EFFECTIVE DEPTH
9 x 100.00 CF/OF x 20 VF = 19,000 CF
TOTAL DRAINAGE STORAGE VOLUME = 19,000 CF

NOTES:

1. HEREBY CERTIFY THAT THE WATER SUPPLY AND FOR SEWAGE DISPOSAL SYSTEMS FOR THIS PROJECT WERE PROVIDED AS OR UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH THE REQUIREMENTS OF THE SUFFOLK COUNTY SANITARY CODE ARTICLE 6 AND ARTICLE 11 OF THE ECL. PROPOSED CONFORMS TO THE SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES CONSTRUCTION STANDARDS AS OF THIS DATE.

JEREMY R. LaRUE LICENSE NO. 090618

2. I HEREBY CERTIFY THAT THE PLAT WAS MADE FROM AN ACTUAL BOUNDARY SURVEY COMPLETED ON APRIL 18, 2017 AND CONCRETE MONUMENTS WILL BE SET AS SHOWN.

JEREMY R. LaRUE LICENSE NO. 090618

3. I HEREBY CERTIFY THAT THE TOPOGRAPHY SHOWN, THE STREET GRADING AND DRAINAGE PLANS ARE THE RESULTS OF AN ACTUAL SURVEY COMPLETED ON APRIL 18, 2017.

JEREMY R. LaRUE LICENSE NO. 090618

4. THESE MAPS WHEN FILED IN THE OFFICE OF SUFFOLK COUNTY SHALL COMPLY WITH ALL OF THE REQUIREMENTS OF ARTICLE 9 OF THE REAL PROPERTY LAW OF THE STATE OF NEW YORK.

5. NO PERSON OR CORPORATION OR THE STREETS OR HIGHWAYS AS THEY APPEAR ON THIS MAP IS DEEMED TO BE THE PUBLIC PARK OR THE TOWN OF SMITHTOWN OR ANY OTHER RESPONSIBILITY OF THESE ROAD SHOWN.

BY: _____
OWNER

I HEREBY CERTIFY THAT THE LAND HEREINAFTER SHOWN HEREON CONFORMS TO THE OFFICIAL TAX RECORDS OF THE TOWN OF SMITHTOWN AND HAS BEEN APPROVED.

SUFFOLK COUNTY TREASURER OF SMITHTOWN N.Y. DATE

EXISTING EASEMENT DESCRIPTIONS

EXISTING EASEMENT 'A'
(TYPICAL EASEMENT SHOWN ON OLD SURVEY)

N 34°00'21" E 53.87'
S 40°40'49" E 43.39'
S 89°13'54" E 113.97'
S 46°33'11" E 28.11'
S 11°51'44" E 141.47'
S 26°31'36" E 81.92'
S 39°56'46" W 30.00'
S 39°27'14" W 31.38'
N 47°51'44" W 148.68'
N 48°51'14" W 38.19'
N 78°13'54" W 113.84'
N 40°46'05" W 32.69'
TO THE POINT OF BEGINNING

EXISTING EASEMENT 'B'
(DRAINAGE EASEMENT LIBER 11618, PAGE 529)

N 33°37'30" E 87.80
S 01°57'17" E 17.85
S 33°17'30" W 79.84'
S 41°42'40" E 61.21'
S 01°57'17" E 13.35'
N 41°42'40" W 68.21'
TO THE POINT OF BEGINNING

EXISTING EASEMENT 'C'
(UTILITY EASEMENT SHOWN ON OLD SURVEY)

N 41°18'40" W 17.28'
N 48°41'40" E 17.10'
N 48°28'31" E 39.13'
S 33°17'30" W 28.51'
S 79°53'54" W 16.86'
S 66°38'17" W 15.19'
TO THE POINT OF BEGINNING

EXISTING EASEMENT 'D'
(WATER EASEMENT SHOWN ON OLD SURVEY)

N 79°38'54" E 84.17'
S 66°38'17" E 24.98'
S 79°53'54" E 140.34'
S 77°17'17" W 20.00'
N 66°38'17" W 18.34'
N 12°46'09" E 16.19'
TO THE POINT OF BEGINNING

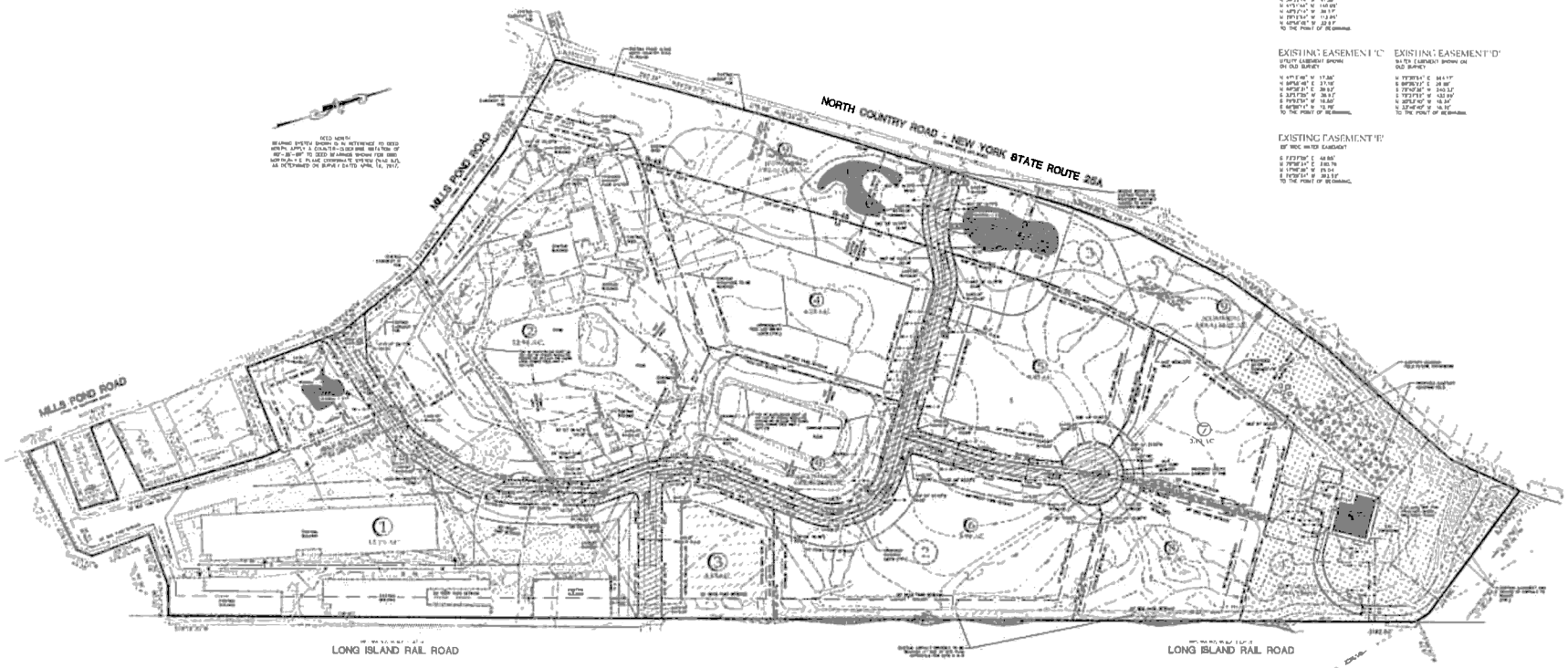
PROPOSED EASEMENT DESCRIPTIONS

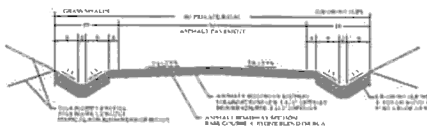
UTILITY EASEMENT 'U'

U1: S 20°56'00" E 34.91'
U2: S 11°51'44" E 141.47'
U3: S 33°10'18" E 28.42'
U4: SLIGHT BEARING TO THE LEFT RADIUS 60.00 LENGTH 80.99 CHORD BEARING N 82°51'55" W 74.94' TO THE POINT OF BEGINNING

WATER EASEMENT 'W'

W1: N 54°51'00" E 161.92'
W2: N 48°51'14" E 44.81'
W3: S 66°38'17" E 15.19'
W4: S 79°53'54" E 140.34'
W5: S 84°27'00" W 151.97'
W6: N 82°26'00" W 21.20'
TO THE POINT OF BEGINNING





TYPICAL ROADWAY SECTION
SCALE: N.T.S.

GRAPHIC SCALE
1" = 100'
1 inch = 100 ft.

SHEET 1 OF 1

November 2019

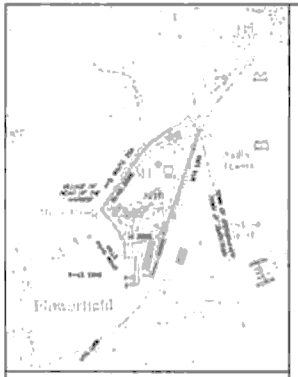
Figure 1-3
Page 1-20

PRELIMINARY SUBDIVISION MAP OF FLOWERFIELD

GYRODYNE, LLC
FLOWERFIELD
ST. JAMES, TOWN OF SMITHTOWN,
SUFFOLK COUNTY, NEW YORK

CAMERON ENGINEERING & ASSOCIATES, LLP

JERRY P. LaRUE
LICENSED LAND SURVEYOR



KEY LOCATION MAP
(NOT TO SCALE)

EXISTING AND PROPOSED DEVELOPMENT DATA

KEY NUMBER	LOT SIZE (ACRES)	LAND USE	BUILDING SIZE/AREA
1	10.78	EXISTING SINGLE-USE BUILDING	1,100 SQ. FT.
2	11.00	EXISTING GENERAL MILL	33,000 SQ. FT.
3	2.79	PROPOSED ADDITIONAL PARKING	N/A
4	6.03	PROPOSED SHED, WITH RESTAURANT	175,000 SQ. FT.
			100 ROOMS
5	4.93	PROPOSED MEDICAL OR R&D OFFICE	70,000 SQ. FT.
6	5.48	PROPOSED MEDICAL OR R&D OFFICE	70,000 SQ. FT.
7	3.19	PROPOSED ASSISTED LIVING	94,000 SQ. FT.
			110 UNITS
8	3.96	PROPOSED ASSISTED LIVING	94,000 SQ. FT.
			110 UNITS
9	0.69	EXISTING CHURCH, SHED AND SITE	9,800 SQ. FT.
TOTAL	54.98		

LANDSCAPE COVERAGE DATA

LOT NUMBER	LANDSCAPE AREA (ACRES)	LOT AREA (ACRES)	PERCENTAGE OF LANDSCAPED AREA
1	3.38	10.75	31%
2	6.36	10.89	58%
3	0.64	2.76	23%
4	2.74	9.03	30%
5	1.27	4.65	28%
6	1.50	5.90	25%
7	1.40	3.11	45%
8	1.29	3.04	42%
9	0.00	0.69	0%
TOTAL	18.97	54.98	35%

ENVIRONMENTAL RESOURCE	BASE PLAN/PROPOSED ACTION
[illegible]	NO IMPACTS
[illegible]	NO IMPACTS
TOPOGRAPHY (GRADING AND EXCAVATION AREA FROM BUILDING+PARKING FOOTPRINT)	137,730 S.F. NEW BUILDING FOOTPRINT INCLUDING NEW ON-SITE STP
VEGETATION AND WILDLIFE	HABITATS CONVERT TO MESOPHYTIC OR SUCCESSIONAL FORESTS
[illegible]	ON-SITE 1,100 GPD STP
TRAFFIC GENERATION	224 TO 338 TRIPS INCLUDING INTERNAL TRIPS
OFF-SITE TRAFFIC MITIGATION	MITIGATION ADDRESSES OFF-SITE IMPACTS @ EXISTING SIGNALIZED INTERSECTIONS
PARKING	1,588 SPACE REQUIRED SUFFICIENT ON-SITE PARKING INCLUDING SHARED & LAND-BANKED PARKING
COMMUNITY SERVICES	NO NEW SCHOOL, SEWERING, ADDED POLICE+FIRE+EMS AND UTILITY SERVICE NEEDS
WAGES AND ECONOMIC IMPACTS	1,027 CONSTRUCTION JOBS; 1,078 POST-CONSTRUCTION JOBS; TAX POSITIVE TO SCHOOL DISTRICT, TOWN, COUNTY
OPEN SPACE	4.96 ± ACRES, 9% OF THE SITE
AIR QUALITY	MINIMAL IMPACTS, ADDRESSED BY SWPPP AND STANDARD EROSION & SEDIMENT CONTROL
NOISE	NO SIGNIFICANT LONG-TERM IMPACTS
VISUAL IMPACTS	SHIELDED, SCREENED, 3-STORY BUILDING HEIGHTS, LENGTHY SETBACKS AVOID VISUAL IMPACTS, 249,150 S.F. NEW BUILDING AREA (INCLUDING ON-SITE STP)
HISTORIC AND CULTURAL RESOURCES	NO IMPACTS
WATER AND IRRIGATION	84,334 GPD
WASTEWATER	67,334 GPD
NITROGEN LOAD	[illegible] lbs of N/YEAR/ACRE

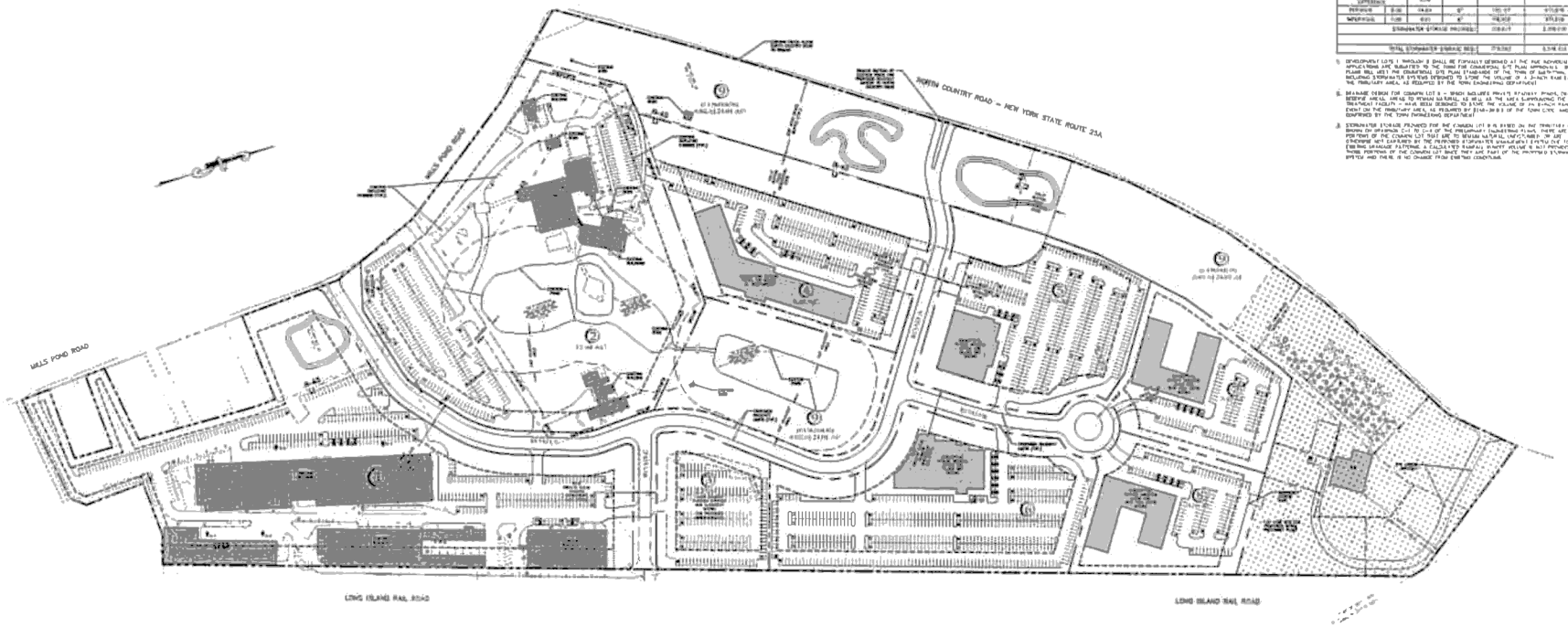
DRAINAGE CALCULATIONS

DESCRIPTION	C	A (ACRES)	I (IN/HR)	RUNOFF (CFS)	VOLUME (GALLONS)
LOT 1		10.75			
PERVIOUS	0.30	2.39	6"	14,000	84,084
IMPERVIOUS	0.90	8.37	6"	49,000	294,294
STORMWATER STORAGE REQ.				63,000	378,378
LOT 2		10.84			
PERVIOUS	0.30	9.98	6"	35,000	210,210
IMPERVIOUS	0.90	0.86	6"	5,000	30,030
STORMWATER STORAGE REQ.				40,000	240,240
LOT 3		2.76			
PERVIOUS	0.30	0.86	6"	5,000	30,030
IMPERVIOUS	0.90	1.91	6"	11,000	66,066
STORMWATER STORAGE REQ.				16,000	96,096
LOT 4		9.03			
PERVIOUS	0.30	6.16	6"	36,000	216,216
IMPERVIOUS	0.90	2.88	6"	17,000	102,102
STORMWATER STORAGE REQ.				53,000	318,318
LOT 5		4.65			
PERVIOUS	0.30	1.27	6"	7,000	42,042
IMPERVIOUS	0.90	3.38	6"	20,000	120,120
STORMWATER STORAGE REQ.				27,000	162,162
LOT 6		5.90			
PERVIOUS	0.30	1.50	6"	9,000	54,054
IMPERVIOUS	0.90	4.40	6"	26,000	156,156
STORMWATER STORAGE REQ.				35,000	210,210
LOT 7		3.11			
PERVIOUS	0.30	1.27	6"	4,574	27,478
IMPERVIOUS	0.90	1.84	6"	10,401	62,463
STORMWATER STORAGE REQ.				21,000	126,126
COMMON LOT #1		24.20			
PERVIOUS AREA (UPLANDS)		8.46			
PERVIOUS	0.30	14.84	6"	192,107	1,153,846
IMPERVIOUS	0.90	9.91	6"	128,307	770,916
STORMWATER STORAGE PROVIDED				320,415	1,924,762
TOTAL STORMWATER STORAGE REQ.				315,415	1,894,654

1. DEVELOPMENT LOTS 1 THROUGH 9 SHALL BE FORMALLY DESIGNED AT THE SITE ADVISORY APPLICATIONS ARE SUBMITTED TO THE TOWN FOR COMMERCIAL SITE PLAN APPROVAL BUT PLEASE NOTE, UNTIL THE COMMERCIAL SITE PLAN STANDARDS OF THE TOWN OF SMITHTOWN, INCLUDING STORMWATER SYSTEMS DESIGNED TO STORE THE VOLUME OF A 2-INCH RAIN EVENT ON THE PERMEABLE AREA, AS REQUIRED BY THE TOWN ENGINEERING DEPARTMENT.

2. DRAINAGE DESIGN FOR COMMON LOT 9 – WHICH INCLUDES PRIVATE PERIMETER ROADS, DRAINAGE AND STORMWATER FACILITIES – SHALL BE DESIGNED TO STORE THE VOLUME OF A 2-INCH RAIN EVENT ON THE PERMEABLE AREA, AS REQUIRED BY §160-30 B.3 OF THE TOWN CODE AND AS CONFIRMED BY THE TOWN ENGINEERING DEPARTMENT.

3. STORMWATER STORAGE PROVIDED FOR THE COMMON LOT 9 IS BASED ON THE PERMEABLE AREA AS SHOWN ON APPENDIX C-1 TO C-4 OF THE PRELIMINARY ENGINEERING PLANS. THERE ARE PORTIONS OF THE COMMON LOT THAT ARE TO REMAIN NATURAL, UNDISTURBED, OR ARE OTHERWISE NOT CAPTURED BY THE PROPOSED STORMWATER MANAGEMENT SYSTEM DUE TO EXISTING DRAINAGE PATTERNS. A CALCULATED RUNOFF VOLUME IS NOT PROVIDED FOR THOSE PORTIONS OF THE COMMON LOT SINCE THEY ARE PART OF THE PROPOSED STORMWATER SYSTEM AND THERE IS NO CHANGE FROM EXISTING CONDITIONS.



BASE PLAN / CONCEPTUAL DEVELOPMENT EXHIBIT

- 150-ROOM HOTEL
- 130,000 S.F. MEDICAL (OR GENERAL OR R&D) OFFICE
- 220 ASSISTED LIVING UNITS

J. VERDYNE, LLC
PREPARED FOR
ST. JAMES, TOWN OF
SMITHTOWN, SUFFOLK
COUNTY, NEW YORK

CAMMAN ENGINEERING
& ASSOCIATES, LLP

JERRY P. LaRUE

November 2019

GRAPHIC SCALE

Figure 1-4: Conceptual Development Exhibit

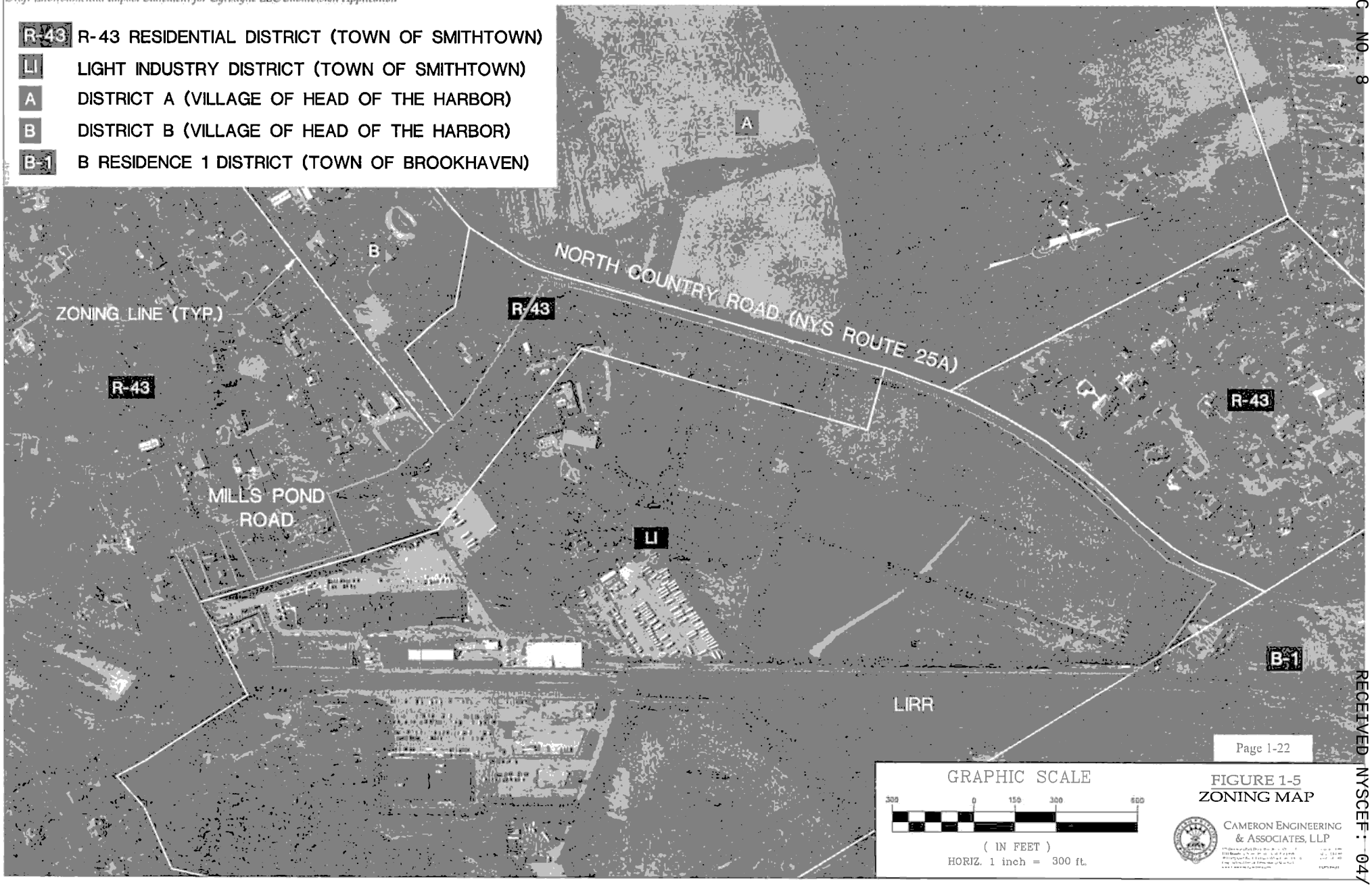


FIGURE 1-5
ZONING MAP

CAMERON ENGINEERING & ASSOCIATES, LLP

2. Project Description

2.1. Introduction

The Proposed Action consists of the Map of Flowerfield Preliminary Subdivision Plan - a sustainable, mixed-use campus plan for the Flowerfield property. The Map of Flowerfield Preliminary Subdivision Plan will subdivide the Flowerfield property into eight separate lots, with the ninth lot as common area under joint ownership. The property consists of 74.98 acres bounded by the Long Island Rail Road, Mills Pond Road, and NYS Route 25A (North Country Road). The State of New York acquired ±246 acres south of the railroad tracks via eminent domain in November 2005, and subsequently developed its acquisition as part of the Stony Brook University Research and Development Park.

The Flowerfield site was historically utilized as an industrial and commercial property. The majority of the site is zoned LI (Light Industrial), with small portions zoned R-43 (Residential). Currently, 18.20 acres of the site are occupied by various light industrial and commercial uses, and 12.56 acres are occupied by the Flowerfield Celebrations catering facility.

The proposed subdivision plan is intended to facilitate a mix of zoning-compliant land uses while remaining sensitive to the distinct attributes of the property and surrounding communities. The proposed plan is neither a maximum build plan nor a maximum subdivision yield plan. Rather, the vision for the Flowerfield property includes a significant amount of open space and significantly less intense development than what is permitted by-right under existing zoning. The subdivision approval process – which would ultimately regulate future development intensity at the Flowerfield site – will ensure that the site is developed in a responsible and sustainable manner. In addition, this approach would clearly outline environmental and infrastructure-related regulatory controls that would be established during the subdivision approval process. As identified throughout the planning stages of the proposed plan, special consideration has been given to the historic nature of both the NYS Route 25A corridor and nearby communities, including St. James, Head of the Harbor, and Stony Brook.

The proposed plan has also been designed to provide synergy and connectivity with neighboring uses – including Stony Brook University (and the Medical Center/Research and Development Park) and the existing Flowerfield catering hall. At this planning stage, there is no formal site plan and there is no specific developer (or group of developers) in place, so the eventual land use mix may change. However, the underlying sustainable design measures and open space would be preserved as part of the subdivision. The Proposed Action was selected as a feasible and optimal land use mix that complies with existing zoning, has synergy/compatibility with nearby land uses, addresses several goals of the draft Town of Smithtown CPU[10] and the corresponding September 2016 Planning

[10] The Draft CPU, which was never adopted, can be found at http://smithtownny.gov/comprehensiveplan. The Town Board issued an RFP to rewrite the Draft CPU. In the interim, this study fulfills the stated goals of the Planning Board resolution adopted September 21, 2016: "There should be some more flexibility for development of the Gyrodyne property. The essence of any development should: a. Support Stony Brook University, a major economic engine in the region; b. Provide a large buffer to maintain the natural and historic corridors; and c. Limit overall

Board resolution (see Appendix A), and minimizes peak hour trip generation to minimize the associated potential environmental impacts.

Existing uses – to remain:

- Lot 1: the existing light industrial uses
- Lot 2: the existing Flowerfield Celebrations catering hall

Potential new uses:

- Lot 3: envisioned as available for future parking that could be built in the future if necessary. It would serve potential overflow for the existing industrial uses on Lot 1. Of note, Towne Bus was a long-term office-space tenant at the Flowerfield property until the latter part of 2017; Lot 3 comprises much of the former area Towne Bus had used as a school bus depot. Towne Bus has since relocated (unrelated to this subdivision) so this document considers the bus depot parking area could be reconfigured with standard-size parking spaces and some open space.
- Lot 4: envisioned as a 150-room hotel with conference space and spa facilities. The hotel would serve the catering hall, on-site offices, Stony Brook University, and Stony Brook Medical.
- **Lots 5 and 6**: envisioned as 130,000 square feet of medical office, general office, or technical R&D office space that would support Stony Brook University, Stony Brook University Medical Center, and/or the University's Research and Development Park.
- Lots 7 and 8: envisioned as 220 assisted living units that could be developed separately or in one combined larger lot. There would be a synergy with the University Medical Center and with the subdivision's medical office space for residents' medical care.
- Lot 9: a commonly-owned and operated lot encompassing ±24 acres of open space, the internal road network, drainage, and a proposed sewage treatment plant (STP).

This DEIS has been prepared in accordance with the elements outlined in both the Town of Smithtown Positive Declaration and Final Scope (provided in Appendix A), as well as the Town's Standards for the Preparation of Draft and Final Environmental Impact Statements. New York State Department of Transportation (NYSDOT) also provided input on traffic and transportation related to the Proposed Action (NYSDOT Case #66334P 0800-04000-0200-013003).

As discussed above, the DEIS has also considered the goals and objectives of the Town's un-adopted Draft CPU and associated Planning Board resolution (November 2016), which aimed to provide guidance related to the goals and objectives of the Draft CPU. In addition, eight development alternatives have been developed to present a range of potential land use mixes for the Flowerfield site. The overall intent is not to prescribe

density to be less intensive than if the property were to be fully built out in compliance with existing LI zoning." See pages A-50 through A-52 for the resolution, shown with boxes around the relevant line items.

specific types of development or final land use mixes, but to assess and establish development thresholds for future development. If future development conforms with the thresholds set forth during the subdivision application process, it is possible that additional EISs would not be required for future individual site plans.

As outlined in the Final Scope, the Town also requested two specific alternatives for further analysis within the DEIS. The two alternatives requested by the Town include a public acquisition alternative (for preservation as public open space) and a subdivision layout that meets the specific design parameters outlined in the un-adopted Draft CPU (minimum 300-foot buffer and 50% of the total site area as open space).

Finally, the Final Scope requires analysis of the (previously) proposed use of the railroad crossing between Gyrodyne and the Stony Brook Research and Development Park. Gyrodyne has been actively coordinating the proposed re-opening of the railroad crossing. While significant progress has been made in this effort, including support from SBU, there is still a degree of uncertainty as to when this might be accomplished. Timing associated with LIRR and NYSDOT involvement and with one or more public hearings required to secure an approval results in an uncertain timeframe. Accordingly, Gyrodyne has modified the proposed Preliminary Subdivision Plan to clarify the railroad crossing as a "possible/future re-opening of railroad crossing". The updated Preliminary Subdivision Plan would not result in the re-opening of the railroad crossing. As such, Alternative 8 reflects conditions with the railroad crossing re-opened, to analyze the future potential use of the crossing.

In total, this DEIS analyzes ten distinct development alternatives, including the Proposed Action and No Action alternatives. The complete alternatives analysis is provided in Section 19 (Alternatives).

2.2. Location

The 74.98-acre Flowerfield site is located between NYS Route 25A (North Country Road) and the right-of-way of the Long Island Rail Road, on the east side of Mills Pond Road in the Town of Smithtown (shown on pages 1-18 to 1-22 in Figure 1-1, Figure 1-2, Figure 1-4, and Figure 1-5). The site is in the unincorporated Hamlet of St. James, within the Town of Smithtown, New York (Tax Map Nos. 0800-40-2-4, 13.3, 13.4, 14, and 15). At the present time, approximately 41 percent of the site (±30.76 acres) is used for a variety of commercial and light industrial uses. The remainder of the site is vacant.

2.3. Purpose and Need

The Proposed Action represents an important initial step in ensuring the responsible development of the Flowerfield site. This approach has been selected by Gyrodyne LLC as it provides an opportunity to develop the site in a manner that better aligns with the goals of the Town and establishes defined development thresholds. As opposed to a formal site plan application, which would propose specific uses and structures, this subdivision process will establish the framework for future development, including environmental thresholds and design standards. The Proposed Action and Alternatives provide a comprehensive guide for future development and the corresponding mitigation measures

for various land use mixes and layouts. The DEIS is intended to establish a range of potential impacts and associated mitigation for one or more categories (e.g. transportation and sewage treatment). Future applicants would be able to rely on this DEIS to obtain municipal approvals, so long as said development is within or vastly similar to the framework analyzed in this document.

The Proposed Action would allow new development on the site in a manner that is consistent with existing zoning, responds to current market trends and creates synergies to Stony Brook University and Stony Brook University Medical Center.

2.4. Subdivision Benefits

The proposed subdivision has a wide variety of tangible benefits, as summarized below.

Economic/Fiscal Benefits: The Proposed Action is expected to generate over 1,500 construction jobs, hundreds of permanent full-time jobs associated with the potential new land uses, and significant increases in tax revenue associated with construction and operation of new and improved buildings. The most significant tax benefit will be to the local school district, which will have zero additional school-age children but will receive portions of the added tax revenues associated with this subdivision. As identified in the Final Scope a complete fiscal and economic analysis is provided in Section 11.

Additionally, the site's close proximity to the Stony Brook Research and Development Park makes the Flowerfield property a prime location for new tenants or relocated tenants from Stony Brook University/Stony Brook Medical. This is also a primary recommendation in the un-adopted Draft CPU, as described below:

- Housing diversity for persons in need of assisted living
- Medical offices would have synergy with Stony Brook Medical
- A hotel/conference center would have synergy with the existing Flowerfield catering hall, Stony Brook University, CEWIT/R&D Park, and Stony Brook Medical

Environment/Sustainability: The proposed subdivision layout retains nearly 49% of total site area as open space - with walking trails, landscaping, and required buffers next to the NYS Route 25A corridor and interconnected throughout the 74.98-acre property. The buffer to NYS Route 25A will be 200 feet or more, reaching 300 feet towards the northwest portion of the property. The Proposed Action calls for the preservation of mature evergreens and existing understory vegetation along the perimeter of the property, helping to preserve the rural roadscape surrounding the site. Numerous existing evergreens and hedgerows would also be preserved throughout the interior of the campus.

Wastewater/Nitrogen Reduction: Currently, the project site has individual on-site wastewater treatment systems (OWTS) for each use/building. With the proposed subdivision in place, the proposed sewage treatment plant (STP) would achieve a substantial improvement in groundwater contaminant removal as compared to current conditions:

- There would be a significant reduction in total pounds of nitrogen discharged to groundwater compared to a full as-of-right build-out of the site.
- There would be an overall nitrogen reduction of ±89% when comparing wastewater influent to effluent.

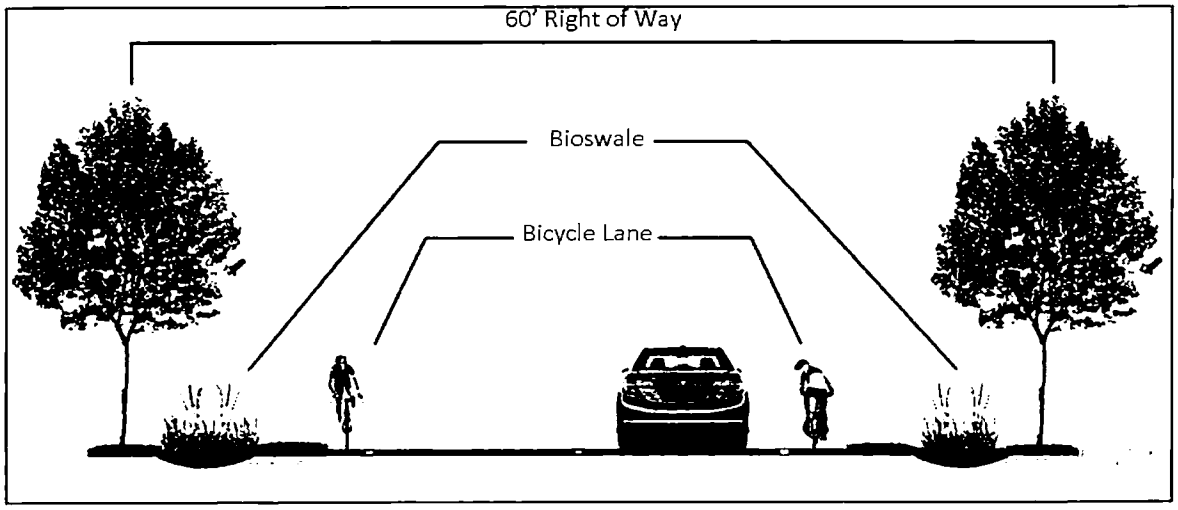
Traffic Safety: The proposed subdivision includes mitigation/improvement measures at several intersections that require improvements today (before any changes are made at the Flowerfield site) due to congestion or other traffic concerns.

The subdivision would include the following off-site improvements:

- A new traffic signal at the intersection of NYS Route 25A and Mills Pond Road, which NYSDOT agreed should be signalized in 2007 (see Appendix B page B-43).
- A signal, roundabout, or another improvement as directed by NYSDOT at the intersection of NYS Route 25A and Stony Brook Road (see Appendix F page F-318).
- Restriping within the existing right-of-way to add short northbound and southbound left turn lanes at the intersections of Stony Brook Road with South Drive and Oxhead Road, with left turn arrows at the existing signals, to address existing congestion (associated in large part with Stony Brook University).

Complete Streets: Today, much of the site is comprised of unmanaged landscaping surrounding paved parking lots. Some nearby residents reportedly use the Flowerfield site as a walking route or destination (as stated during the November 15, 2017 Planning Board hearing for this application). The proposed interior roads are designed to be wide enough for vehicles and bicycles, with appropriate landscaping to provide an attractive walking and cycling network within the property that does not exist today, plus just over two miles of new nature trails throughout the subdivision.

Figure 2-1: Proposed Interior Subdivision Road Cross Section



Stormwater Management: On-site stormwater management has been guided by Low Impact Development (LID) principles, which utilizes natural and landscaped features to protect water quality. The proposed design approach incorporates "green" infrastructure to help convey stormwater to on-site drainage reserve areas (DRAs) and to maximize the

vegetated area that allows for passive recharge. As shown in Figure 2-1 above, the proposed interior road cross sections include roadside turf swales.

Overall, the proposed subdivision will provide 265,297 cubic feet of stormwater storage, an excess of 18,464 cubic feet of storage volume. One of the DRAs can be enlarged in the future to provide an additional 28,697 cubic feet of storage, for a total of 47,161 cubic feet of excess storage, equivalent to 1.53 inches (±20%) above the required 8-inch design. This meets New York State's high-end projection of a 20% increase in precipitation change. See Section 8.3: Stormwater Collection, Treatment, and Recharge Proposed Mitigation.

Meets Town (un-adopted) Draft CPU Goals for the Gyrodyne (Flowerfield) Property: During most of the preparation process for the DEIS, the Town's Draft Comprehensive Plan Update was current. However, as of April 10, 2018, the Town Board adopted a resolution to fund a full revision of the Draft CPU, a process which is expected to take over a year. In the interim, the following considerations in the Town's Draft CPU and subsequent September 21, 2016 adopted Planning Board resolution, were considered in developing the Proposed Action:

1) "There should be some more flexibility for development of the Gyrodyne property."
   - This study considers a range of development options for the property.
2) "The essence of any development should support Stony Brook University, a major economic engine in the region;"
   - Medical offices will complement Stony Brook Medical. Doctors could lease office space at the Flowerfield site and have a very short commute between their offices and the hospital.
   - Assisted living units would be very close to Stony Brook Medical, which should be a strong selling point with respect to health and safety for future residents.
   - The hotel would be a place for people to stay, convenient to visit Stony Brook University and Stony Brook Medical.
   - If the office space is utilized for research and development, it will complement the Stony Brook Research and Development Park.
   - General office space would complement several aspects of the University.
3) "The essence of any development should provide a large buffer to maintain the natural and historic corridors;"
   - All of the potential subdivision layouts would abide by the required 200-foot minimum buffer along NYS Route 25A and required buffers to existing R-43 zoned parcels (which has the net effect of a 300-foot buffer along certain portions of NYS Route 25A). The existing setbacks/buffers along Mills Pond Road will remain.
4) "The essence of any development should limit overall density to be less intensive than if the property were to be fully built out in compliance with existing LI zoning."
   - The analyzed development scenarios are less intensive and generate less traffic and fewer trucks than as-of-right light industrial or medical office uses.

In addition to the Planning Board's stated goals, the Proposed Action fulfills other goals of the draft CPU which could remain in the new Master Plan document that will be prepared:

5) Related to economic development: Uses that complement Flowerfield Celebrations
   - A hotel would complement the existing catering hall because catering hall parties are often significant lifetime milestones (e.g. weddings) with out-of-town guests who require a hotel.
6) A need for maturing residents who wish to remain in the Town and age-in-place:
   - Assisted living facilities are age-restricted and generate less traffic per square foot than any other typical residential, commercial, or industrial land use[11] and they generate zero school-age children.

2.5. Operation

Each lot could be independently owned and operated, or adjacent lots could be jointly purchased and developed. Joint-lot development would not significantly alter the potential yield; it would simply allow more options for the design and orientation of new buildings, parking, landscaping, and utility connections. Only Lot 9 would need to remain separate, and commonly owned and operated, because Lot 9 would include the internal roads, drainage, and proposed STP.

The existing uses on Lots 1 and 2 would continue operating as they currently function. A new wastewater pumping station is proposed to be located on Lot 2. The pumping station would be sited on a 20' x 40' concrete pad, with most equipment located below ground. Above-ground equipment would be limited to a control panel and emergency generator. Overall height of the pumping station structure would be less than one story. The light industrial buildings would tend to be open during typical weekday business hours (generally between 8:00 a.m. and 6:00 p.m.), and the catering hall would continue to schedule peak activity on Friday evenings, on Saturdays, and on Sundays.

Lot 3 would be utilized for overflow parking for the existing or expanded uses.

While proposed uses on Lots 4-8 have been identified as the optimal land use mix and density for the Flowerfield site, it is noted that future development is not necessarily tied to this mix of uses.

The hotel on Lot 4 would be owned and operated by a licensed entity and would generally be open to receive/serve guests 24 hours a day, 7 days a week.

The office buildings on Lots 5 and 6 could be owned and operated/maintained by the same entity (potentially the University or its Medical Center), or it could be leased to any number of office/medical office tenants. The hours of operation will depend on the eventual type of office tenants. General business offices typically operate during standard weekday business hours between 8:00 a.m. and 6:00 p.m., while medical offices may also include a Saturday midday component (generally between 9:00 a.m. and 2:00 p.m.)

The assisted living buildings on Lots 7 and 8 would be owned and operated by a State-licensed entity. Residents would rent individual rooms on an annual or monthly basis, and the facilities would be open to visitors during set hours each day.

[11] Institute of Transportation Engineers (ITE) *Trip Generation Manual* 10th Edition, 2017. Data for residential, office, retail, and industrial land uses.

Each lot owner will have a pro-rated share of financial responsibility for maintaining the internal roads, drainage, landscaping, and STP on Lot 9. The owners would be fully responsible for the maintenance, landscaping, and irrigation on their individual lot(s). The STP would operate 24/7 and would have periodic maintenance/repair visits.

2.6. Covenants, Restrictions, and Easements

The proposed subdivision is subject to certain Covenants and Restrictions, Easements, Charges, and Liens governing various areas of the site. The existing Covenants, Restrictions, and Easements, attached hereto as Appendix C, as applicable to the subject parcels within the site, are not violated in the proposed subdivision, do not require relief, and will be maintained.

Consistent with the Town's request, a summary of the nature and effect of each of the applicable covenants, restrictions, and easements, including a verbatim copy of the body of each such document, is set forth below.

RESTRICTIVE COVENANT MADE BY GYRODYNE COMPANY OF AMERICA, INC. DATED OCTOBER 26, 1960 AND RECORDED OCTOBER 31, 1960 IN LIBER 4898 CP 482 [SEE PAGES C-6 TO C-10], PURSUANT TO RESOLUTION #509 OF THE TOWN OF SMITHTOWN TOWN BOARD DATED SEPTEMBER 15, 1960 AND RECORDED MARCH 8, 1978 IN LIBER 8398 CP 269 [SEE PAGES C-32 TO C-36], AND LAST SUPPLEMENTED BY MEMORANDUM OF AGREEMENT DATED APRIL 28, 1964 AND RECORDED DECEMBER 22, 1964 IN LIBER 5674 CP 11 [SEE PAGES C-11 TO C-31].

- As provided below, this Restrictive Covenant, as amended, prohibits the construction of any building or parking area within a defined 200-foot buffer located immediately adjacent to and south of North Country Road (State Route 25A). This Restrictive Covenant also mandates the buffer and screening of all parking areas located within 100 feet of the east boundary of SCTM District 0800 Section 40.00 Block 02.00 and Lots 004.000, 005.001, 005.002, 006.000 and 007.000. There are no existing buildings or parking areas within the defined 200-foot buffer located immediately adjacent to and south of North Country Road (State Route 25A). Likewise, the proposed subdivision and the alternatives do not propose to construct any buildings or parking areas within the defined 200-foot buffer located immediately adjacent to and south of North Country Road (State Route 25A).The site is, however, improved with a parking area east of and within 100 feet of the above-mentioned tax parcels. However, a 25-foot buffer exists between the east boundary of said parcels and the west boundary of the parking area, and within this buffer, adequate screening of the parking area is provided. The existing screening consists of a row of Norway Spruce and additional overgrowth, complying with this Restrictive Covenant. The Memorandum of Agreement dated April 28, 1964 and recorded December 22, 1964 in the Office of the Suffolk County Clerk in Liber 5674 Cp 11 supplements this Restrictive Covenant. The Memorandum of Agreement (i) establishes property rights for a number of neighboring property owners named in the action before the New York State Supreme Court, Index No. 73281/1961, and (ii) sets forth covenants and restrictions already encompassed within both the Restrictive Covenants dated October 26, 1960 and the recorded Town of Smithtown Resolution #509 dated September 15, 1960. Thus, the proposed subdivision and the

alternatives comply with the terms of this Restrictive Covenant and the above-mentioned supplemental documents.

RESTRICTIVE COVENANT

WHEREAS, by petition verified June 28, 1960, the undersigned, GYRODYNE COMPANY OF AMERICA, INC., a corporation having offices at Flowerfield, Town of Smithtown, Suffolk County, New York, made application to the Town Board of the Town of Smithtown for a change of zone of certain of its real property located in Flowerfield, Town of Smithtown, Suffolk County, New York, from "A" Residence District classification to "G" Industrial District (Light Industrial) classification, as defined in the Building Zone Ordinance and Map of the Town of Smithtown, and

WHEREAS, after public hearing held upon said application on July 12, 1960, the Town Board of the Town of Smithtown, by resolution duly adopted on September 15, 1960, granted the application of said GYRODYNE COMPANY OF AMERICA, INC. to the extent that the following described real property was placed within the "G" Industrial District (Light Industrial) zone and classification as defined by the Building Zone Ordinance and Map of the Town of Smithtown:

ALL that certain plot, piece or parcel of land situate lying and being at Flowerfield in the Town of Smithtown, Suffolk County, New York more particularly bounded and described as follows:

BEGINNING at a point formed by the intersection of the northerly line of land now or formerly of Annie E. Newton with the westerly line of the Long Island Railroad right-of-way;

Thence, along said northerly line of Annie E. Newton South 82°43'50" West a distance of 266.14 feet;

Thence, North 2°57'50" East a distance of 188.10 feet along the easterly boundary of land now or formerly of Semerad;

Thence, North 3°00'40" East a distance of 181.70 feet along the easterly boundary of land now or formerly of Lampe;

Thence, North 2°01'45" East a distance of 252.76 feet along the easterly boundary of land now or formerly of Robert Elderkin;

Thence, North 2°11'50" West a distance of 265 feet along the easterly boundary of land now of Jankowski;

Thence, North 18°58'50" West a distance of 349.88 feet;

Thence, North 0°28'20" West a distance of 678.25 feet to the southeasterly corner of land now or formerly of Louise Heisler;

Thence, along the northeasterly boundary of land now or formerly of Louise Heisler North 53°20'30" West a distance of 321.62 feet to the southerly side of North Country Road;

Thence along the southerly side of North Country Road the following six courses and distances:

1. North 35°33'40" East a distance of 790.80 feet;
2. North 38°50'30" East a distance of 178.77 feet;
3. North 45°48' East a distance of 272.39 feet;
4. North 54°24' East a distance of 321.35 feet;
5. North 60°51'50" East a distance of 412.47 feet;
6. North 43°20'40" East a distance of 192.72 feet;

Thence, South 34°06'20" East a distance of 390.15 feet to a point on a common boundary line between the Town of Smithtown and the Town of Brookhaven;

Thence, along said common boundary line South 11°46'40" East a distance of 40.94 feet to a point on the westerly line of the Long Island Railroad right-of-way;

Thence, along said westerly line of the Long Island Railroad right-of-way the following two courses and distances:

1. South 19°19'30" West a distance of 3,247.72 feet;
2. Along the arc of a curve bearing to the right having a radius of 1,399.14 feet, a distance of 136.20 feet, to the point or place of beginning, and

WHEREAS, the said resolution of the Town Board of the Town of Smithtown adopted on September 15, 1960, and the change of zone granted thereby were made upon two conditions, and

WHEREAS, the first of said condition requires that GYRODYNE COMPANY OF AMERICA, INC. execute and cause to be recorded in the Suffolk County Clerk's Office, a restrictive covenant providing that GYRODYNE COMPANY OF AMERICA, INC., its successors and assigns will not construct, erect or place any building on certain portions of its property frontage upon North Country Road, and

WHEREAS, the second of said conditions requires that any parking lot or parking area constructed by GYRODYNE COMPANY OF AMERICA, INC. upon certain portions of its property be screened from certain adjoining residential properties,

NOW, THEREFORE, in compliance with the conditions contained in the aforesaid resolution of the Town Board of the Town of Smithtown adopted on September 15, 1960, as aforesaid, GYRODYNE COMPANY OF AMERICA, INC. covenants:

1. That, at no time, will GYRODYNE COMPANY OF AMERICA, INC., its successors or assigns construct, erect or place any building on that portion of its real property located at Flowerfield, Town of Smithtown, New York, bounded:
   a. on the north by the southerly line of North Country Road (State Route 25A);
   b. On the south by an imaginary line drawn parallel to and two hundred (200) feet southerly from the southerly line of North Country Road (State Route 25A):
   c. on the west by land now or formerly of Heisler; and
   d. on the east by the current easterly boundary of property of GYRODYNE COMPANY OF AMERICA, INC.

2. That any parking lot or parking area constructed by GYRODYNE COMPANY OF AMERICA, INC., its successors or assigns, within one hundred (100) feet of the easterly boundary of lands now or formerly of Jankowski, Elderkin, Lampe and Semerad shall be screened from said properties by the installation and maintenance of ten (10) feet of lawn area immediately east of said easterly line of said properties, followed by the installation and maintenance of a natural screen of Norway Spruce immediately east of said ten (10) feet of lawn area and followed by the installation and maintenance of a five (5) foot area of lawn between the said Norway Spruce and the westerly most portion of the improved surface of the parking area, said combined lawn and planting area to be of a width equal to that of said parking area.

IN WITNESS WHEREOF, the said GYRODYNE COMPANY OF AMERICA, INC. has caused its corporate seal to be hereunto affixed and these presents to be signed by the duly authorized officer this 26th day of October, 1960.

GYRODYNE COMPANY OF AMERICA, INC.
-s-
By: Peter J. Papadakos, President

Special Meeting
Town Board
Town of Smithtown
September 15, 1960

A special meeting of the Town Board of the Town of Smithtown, Suffolk County, NY, was held at the Town Hall, Smithtown, New York on the 15th day of September 1960 at 9:30 A.M.

Members present:	Supervisor	Robert A. Brady
	Justices	Peter Nowick
		Floyd Sarisohn
	Councilmen	Otto H. Schubert
		Paul T. Given

A Waiver of Notice of Special Meeting was executed by the members of the Board and submitted to the Town Clerk for filing.

Councilman Given stated that one of the reasons for this meeting was to adopt a resolution approving the petition of Gyrodyne Company of America for an industrial classification. The Town Board has given a great deal of study to this application, and they are now ready to offer a decision.

The following resolution was offered by Councilman Given and seconded by Councilman Schubert.

WHEREAS, Gyrodyne Company of America, Inc., of Flowerfield, Town of Smithtown, Suffolk County, New York, by petition verified June 28, 1960, made application to this Board for a change of zone of certain of its real property located at Flowerfield, as said real property is more particularly described in said application, from "A" Residence zone classification to "G" Industrial (Light Industrial) classification, and

WHEREAS, a public hearing was held by this Board at 2:00 P.M. on July 12, 1960 at Town Hall, Smithtown, New York, following notice thereof duly published and posted as required by law, and

WHEREAS, this Board has fully considered the evidence submitted in support of said application and the evidence submitted in opposition thereto, and whereas this Board has determined that said application should be granted in part, subject to certain limitations,

NOW THEREFORE, be it and it hereby is

RESOLVED, that the application of Gyrodyne Company of America, Inc. be granted to the extent that the following described real property shall be placed within the "G" Industrial (Light Industrial) zone and classification.

ALL that certain plot, piece or parcel of land situate lying and being at Flowerfield in the Town of Smithtown, Suffolk County, New York, more particularly bounded and described as follows:

BEGINNING at a point formed by the intersection of the northerly line of land now or formerly of Annie E. Newton with the westerly line of the Long Island Railroad right-of-way;

Thence, along said northerly line of Annie E. Newton South 82°43'50" West a distance of 266.14 feet;

Thence, North 2°57'50" East a distance of 188.10 feet along the easterly boundary of land now or formerly of Semerad;

Thence, North 3°00'40" East a distance of 181.70 feet along the easterly boundary of land now or formerly of Lampe;

Thence, North 2°01'45" East a distance of 252.76 feet along the easterly boundary of land now or formerly of Robert Elderkin;

Thence, North 2°11'50" West a distance of 265 feet along the easterly boundary of land now of Jankowski;

Thence, North 18°58'50" West a distance of 349.88 feet;

Thence, North 0°28'20" West a distance of 678.25 feet to the southeasterly corner of land now or formerly of Louise Heisler;

Thence, along the northeasterly boundary of land now or formerly of Louise Heisler North 53°20'30" West a distance of 321.62 feet to the southerly side of North Country Road;

Thence along the southerly side of North Country Road the following six courses and distances:

1. North 35°33'40" East a distance of 790.80 feet;
2. North 38°50'30" East a distance of 178.77 feet;
3. North 45°48' East a distance of 272.39 feet;
4. North 54°24' East a distance of 321.35 feet;
5. North 60°51'50" East a distance of 412.47 feet;
6. North 43°20'40" East a distance of 192.72 feet;

Thence, South 34°06'20" East a distance of 390.15 feet to a point on a common boundary line between the Town of Smithtown and the Town of Brookhaven;

Thence, along said common boundary line South 11°46'40" East a distance of 40.94 feet to a point on the westerly line of the Long Island Railroad right-of-way;

Thence, along said westerly line of the Long Island Railroad right-of-way the following two courses and distances:

1. South 19°19'30" West a distance of 3,247.72 feet;

2. Along the arc of a curve bearing to the right having a radius of 1,399.14 feet, a distance of 136.20 feet, to the point or place of beginning, and

BE IT FURTHER RESOLVED, that the Building Zone Ordinance and Map of the Town of Smithtown be amended accordingly.

BE IT FURTHER RESOLVED that said change of zone is made upon and subject to the following two conditions:

1. That Gyrodyne Company of America, Inc., execute and cause to be recorded in the Office of the Clerk of Suffolk County a restrictive covenant to the effect that at no time will said Gyrodyne Company of America, Inc., its successors and assigns construct, erect or place any building on that portion of its real property located within an area bounded on the north by the southerly side of North Country Road, and on the south by an imaginary line drawn parallel to and 200 feet southerly from the southerly line of North Country Road, on the west by land now or formerly of Heisler, and on the east by the current easterly boundary of property of said Gyrodyne Company of America, Inc.
2. That any parking lot or parking area constructed by Gyrodyne Company of America, Inc., within one hundred (100) feet of the easterly boundary of lands now or formerly of Jankowski, Elderkin, Lampe and Semerad shall be screened from said properties by the installation and maintenance of ten feet of lawn area immediately east of said easterly line of said properties, followed by the installation and maintenance of a natural screen of Norway Spruce immediately east of said ten feet of lawn area and followed by the installation and maintenance of a five foot area of lawn between the said Norway Spruce and the westerly most portion of the improved surface of the parking area, said combined lawn and planting area to be of a width equal to that of said parking area.

MEMORANDUM OF AGREEMENT, made this 28th day of April, 1964, between GYRODYNE COMPANY OF AMERICA, INC., a corporation having its principal office and place of business at Flowerfield, Town of Smithtown, Suffolk County, State of New York New York, FIRST PARTY; THE CHASE MANHATTAN BANK, a banking corporation having its principal office and place of business at One Chase Manhattan Plaza, Borough of Manhattan, City and State of New York, individually and as agent under Credit Agreement dated as of December 30, 1960, between Gyrodyne Company of America, Inc., and The Chase Manhattan Bank, The Franklin National Bank of Long Island, New York Business Development Corporation and Bank of Smithtown, as amended by a supplemental agreement dated August 19, 1961, SECOND PARTY; OLIVER HAZARD PERRY, of 212 Dawley Road, Fayetteville, New York and AUDREY PERRY BURNIER, of 3543 Third Avenue, San Diego, California, THIRD PARTIES: MATHILDE L. PERRY of St. James, New York, FOURTH PARTY: the TOWN OF SMITHTOWN, FIFTH PARTY, and the INCORPORATED VILLAGE OF HEAD OF THE HARBOR, SIXTH PARTY;

WITNESSETH:

WHEREAS, the Town Board of the Town of Smithtown, by resolution adopted September 15, 1960 granted an application of FIRST PARTY to the extent that certain property owned by FIRST PARTY within the boundaries of which the property of FIRST PARTY hereinafter described is situated was reclassified by amendment of the Building Zone Ordinance and Map of the Town of Smithtown; and

WHEREAS, as a condition to the change of zone effected by said resolution of September 15, 1960 the Town of Smithtown required FIRST PARTY to execute and record a certain restrictive covenant recorded in the Smithtown County Clerk's Office on October 30, 1960, in Liber 4898, cp. 482; and

WHEREAS, thereafter an action was instituted in the Supreme Court, Suffolk County, entitled "John M. Perry, Mathilde L. Perry, Jean M. Dougherty, Louise Heisler, Katherine Jankowski, Neil Garguilo, Mary Garguilo, Robert B. Elderkin, Martha Elderkin, Janet S. Elderkin, Marie A. Bauer, John G. Sweek, Phyllis Sweek, Jay Gaines, Marcia Gaines, Benjamin Yablonski, Edwin

Yablonski, Carol L. Strauss, Mildred Smith, Josephine Smith, Malcolm E. Smith and the Incorporated Village of the Head of the Harbor, Plaintiffs, against Town of Smithtown and Gyrodyne Company of America, Inc., Defendants.", Index Number 73281/1961, praying judgment:-

Declaring amendment of the Building Zone Ordinance and Official Zoning Map of the Town of Smithtown, adopted September 15, 1960, unconstitutional, illegal and ineffective.

Restraining the Town of Smithtown and its officers, agents and employees from doing any acts pursuant thereto;

Restraining defendant Gyrodyne Company of America, Inc. from devoting any of its real property described in the resolution of the Town Board adopted September 15, 1960 to any uses not permitted by the Building Zone Ordinance of the Town of Smithtown in an "A" Residential District; and

Granting plaintiffs such other and further relief as may be just and proper together with the costs and disbursements of the action; and,

WHEREAS, SECOND PARTY, individually and as agent aforesaid is the holder of bonds of FIRST PARTY, secured by mortgages upon the property hereinafter described, which mortgages are dated and recorded respectively as follows:

Gyrodyne Company of America, Inc. to The Chase Manhattan Bank, individually and as agent under Credit Agreement dated as of December 30, 1960 between Gyrodyne Company of America, Inc. and The Chase Manhattan Bank, the Franklin National Bank of Long Island, New York Business Development Corporation and Bank of Smithtown, mortgage dated January 6, 1961, recorded January 20, 1961 in the office of the Clerk of Suffolk County in Liber 3561, mp 389.

Gyrodyne Company of America, Inc. to The Chase Manhattan Bank, individually and as agent under Credit Agreement dated as of December 30, 1960 between Gyrodyne Company of America, Inc. and The Chase Manhattan Bank, the Franklin National Bank of Long Island, New York Business Development Corporation and Bank of Smithtown, as amended, by Supplemental Agreement dated August 18, 1961, recorded August 22, 1961 in the office of the Clerk of Suffolk County in Liber 3688, mp 21.; and,

WHEREAS, the latter mortgage dated August 18, 1961 by language therein contained was consolidated with the mortgage recorded in Liber 3561, mp. 389 to form a single first mortgage lien; and

WHEREAS, the aforesaid action is now pending and the parties desire to declare their respective rights and legal relations and those of their successors and assigns in and with relation to the real property hereinafter described by mutual covenant running with said real property and thereafter to discontinue the aforesaid action thereby avoiding the expense thereof;

WHEREAS, JOHN M. PERRY, one of the plaintiffs in the aforesaid action, died on the 16th day of January, 1964, seized and possessed of real property situated on North Country road, St. James, Suffolk County, New York, acquired by deed dated July 17, 1917 and recorded in the office of the County Clerk of Suffolk County, in Liber 961 of Conveyances, page 205, January 3, 1918, and bounded and described as follows:

Parcel No. 1. Bounded on the north by land of Lydia M. Haight; and land of Ella B. Emmett; on east by westerly side of public highway from Main North Country Highway to Stony Brook Harbor, known as Shepherd Jones Lane; on the southeast by the middle of Main North Country Highway; on south by land belonging to Estate of George Powell, deceased; on west by land of Ella B. Emmett, containing about 21 acres, be the same more or less, being the same premises conveyed to Frederick S. Minott by Edmund N. Smith and wife by deed dated March 1, 1909 and recorded in the Suffolk County Clerk's Office, Liber 677, page 323;

Parcel No. 2. Thereof bounded on the north by land of Mary Pierson; on the east by the westerly side of the highway leading from the Main North Country Highway to Stony Brook Harbor, known as Shepherd Jones Lane; on the south by land of Edmund N. Smith; on west by land of Ella B. Emmett, containing 4 acres, be the same more or less, being same premises conveyed to Frederick S. Minott by Lydia M. Haight and Clarence M. Haight by deed dated February 24, 1909 and recorded in the Suffolk County Clerk's Office, Liber 677, page 321;

Parcel No. 3. Bounded on the north and east by the southerly and westerly side of a public highway leading from the Main North Country Road to Stony Brook Harbor, known as Shepherd

Jones Lane; south by the land of Lydia M. Haight; west by land of Ella B. Emmett, containing about 11 acres, be the same more or less, being the same premises conveyed to Frederick S. Minott by Mary F. and John A. Pierson by deed dated March 1, 1909 and recorded in the Suffolk County Clerk's Office, Liber 677, page 324;

WHEREAS, said JOHN M. PERRY left a last Will and Testament dated December 12, 1958 and admitted to private by the Surrogate's Court of Suffolk County on February 3, 1964 by which he devised any and all real property wheresoever situated of which he should die seized or possessed or to which he might be entitled at the date of his death or in which he might have any interest whatever and the improvements thereon; together with the appurtenances to his wife, MATILDE L. PERRY, FOURTH PARTY, during her lifetime with remainder to his issue in fee simple per stirpes; and

WHEREAS, OLIVER HAZARD PERRY and AUDREY PERRY BURNIER, THIRD PARTIES, constitute the issue of JOHN N. PERRY, deceased, and are now seized of the aforesaid real property in fee simple subject to a life estate of FOURTH PARTY; and

WHEREAS, FOURTH PARTY, is seized and possessed of real property situated on North Country Road, St. James, Suffolk County, New York, acquired by deed dated March 17, 1949 and recorded in the office of the County Clerk of Suffolk County in Liber 2942 of conveyances, page 463, April 26, 1949, and bounded and described as follows:

BEGINNING at locust stake in the northerly line of the land hereby conveyed, which stake is at the southwest corner of the farm of Edward N. Smith, running N. 83° 21' W 22.3' to a locust stake;

S 21° 22' W. 542.3 feet to a locust stake; thence S 42° 16' E 504.3 feet to highway leading from Smithtown to Stony Brook; thence northeast along highway to land of above named Edward N. Smith; thence west along land to point or place of beginning containing by estimation 9-1/2 acres of land, more or less, together with all interest in highway adjoining premises.

NOW, THEREFORE, in consideration of the mutuality hereof and other good and valuable consideration moving between the parties, the parties have agreed:

1. Upon the execution and delivery of this instrument, the aforesaid action shall be discontinued by consent without costs to any party as against any other party.
2. FIRST PARTY, its successors and assigns will at no time construct, erect or place any building other than a single-family dwelling or dwellings and buildings accessory thereto on that portion of its real property located at Flowerfield, Town of Smithtown, Suffolk County, New York, bounded and described as follows;

BEGINNING at a monument set in the southeasterly line of North Country road, where said line is intersected by the northeasterly line of land now or formerly of Louise Heisler; running from said point of intersection North 35° 33' 40" East, 790.80 feet along the southeasterly line of said road to a point on the southeasterly line of said road; thence North 38° 50' 30" East 178.77 feet still along the southeasterly line of said road to a point on the southeasterly line of said road; thence North 45° 48' East 272.39 feet still along the southeasterly line of said road to a point on the southeasterly line of said road; thence North 54° 24' East 321.25 feet still along the southeasterly side of said road; thence North 60° 51'50" East 236.78 feet still along the southeasterly side of said road to a point on the southeasterly line of said road; thence North 43° 20' 40" East, 192.72 feet still along the southeasterly side of said road to a point on the southeasterly side of said road, thence South 36° 28' 05" West, 943.62 feet to a point; thence South 45° 48' West, .59 feet to a point; thence south 38° 50'30" West .94 feet to a point thence South 35° 33'40" West, 787.96 feet to land now or formerly of Louise Heisler; thence North 53° 20' 30" West, along said land now or formerly of Louise Heisler, 300.05 to the point or place of beginning.

3. No parking lot or parking area shall be constructed or maintained by FIRST PARTY, its successors or assigns, within one hundred feet of the southeasterly line of North Country Road, except where the distance between the southeasterly line of North Country Road and the southeasterly boundary of the property hereinbefore described in paragraph 2 hereof is less than one hundred feet in which case no parking lot or parking area shall be constructed or maintained between the southeasterly side of Old Country Road and the southeasterly boundary of said property and, provided further, before devoting any portion of said property described in paragraph 2 hereinabove use as a parking lot, such parking lot or parking area

shall be screened from North Country Road by vegetation and maintenance of a natural screening of Norway Spruce immediately northeasterly along the line of the northwesterly boundary of such parking lot or parking area to full length thereof from west to east.

4. Any parking lot or parking area constructed by FIRST PARTY, its successors or assigns, within 100 feet of the easterly boundary of land now or formerly of Jankowski, Elderkin, Lampe and Semperad shall be screened from said properties by the installation and maintenance of ten (10) feet of lawn immediately east of the easterly line of said properties, followed by the installation and maintenance of a natural border of Norway Spruce immediately east of the ten (10) feet of lawn area and followed by the installation and maintenance of a five foot area of lawn between said Norway Spruce and the westerly most portion of the improved surface of the parking area, said combined lawn and planting area to be of a width equal to that of the said parking area.

DECLARATION OF COVENANTS AND RESTRICTIONS MADE BY GYRODYNE COMPANY OF AMERICA, INC. DATED AS OF 8/1/2002 AND RECORDED 8/22/2002 IN LIBER 12204 CP 947 [SEE PAGES C-37 TO C-44].

- This Declaration of Covenants and Restrictions establishes four restrictions applicable to defined portions of the site. First, this Declaration prohibits the construction or maintenance of any building or parking area in the area identified as Parcel 1 on Schedule B of this Declaration. Parcel 1, similar to the above-described Restrictive Covenant dated October 26, 1960, as amended, is located immediately adjacent to the south boundary of North Country Road (State Route 25A) and the east boundary of Mills Pond Road, falling within the 200-foot buffer established by the above-described Restrictive Covenant dated October 26, 1960. The area of the site identified as Parcel 1 is not improved with any existing buildings or parking areas. Likewise, the proposed subdivision does not propose to improve this area of the site with any buildings or parking areas. This Declaration also prohibits the construction or maintenance of buildings or parking areas not otherwise authorized in the R-43 district zone in the area identified as Parcel 3 on Schedule B. Parcel 3, located immediately adjacent to the east boundary of Mills Pond Road and south of Parcel 1, is improved with an existing two-story dwelling and carport, which are permitted uses in the R-43 District zone. No further improvements are proposed in the area identified as Parcel 3. Further, this Declaration limits the permitted use of Parcel 2, as identified on Schedule B, to the operation of a restaurant used as a catering facility. In compliance with the Declaration, Parcel 2, located immediately adjacent to and south of Parcel 1, and immediately adjacent to and east of Parcel 2, is improved with a single-story structure used as a catering facility. Finally, this Declaration establishes noise restrictions on the Swim Club (no longer in existence) and on all other facilities occupying Parcel 2. The catering facility, the sole facility on Parcel 2, has and will continue to comply with the noise restrictions established by this Declaration. Thus, the existing improvements on the property, as well as the proposed subdivision and the alternatives, comply with this Declaration of Covenants and Restrictions.

DECLARATION OF COVENANTS AND RESTRICTIONS

This Declaration of Covenants and Restrictions (the "Declaration") dated as of the 1st day of August, 2002 by GYRODYNE COMPANY OF AMERICA, INC. having offices at 102 Flowerfield, St. James, New York 11780 hereinafter referred to as the "DECLARANT'.

WITNESSETH:

WHEREAS, the DECLARANT is the owner in fee simple of certain real property situate. lying and being at Flowerfield in the Town of Smithtown, County of Suffolk and State of New York

being more particularly bounded and described on Schedule "A" and as shown on the map constituting Schedule "B" hereto attached and made a part hereof (the "Premises"); and

WHEREAS, upon petition by DECLARANT, by resolution (the "Rezoning Resolution") adopted on the 12th day of November 1996, the Town Board of the Town of Smithtown, classification of that portion of the Premises designated as "Parcel 1" from LI to R-43 and that portion of the Premises designated as "Parcel 2" from R-43 to LI, and

WHEREAS, as a condition of such resolution, the applicant was required to record in the Suffolk County Clerk's Office covenants with respect to the use of the Premises in order for the resolution to take effect.

NOW, THEREFORE, DECLARANT, in compliance with the condition of the resolution, hereby declares that the Premises are and shall be held, transferred, sold, conveyed and occupied subject to the covenants, conditions and restrictions hereinafter set forth.

1. No building or parking area shall be constructed or maintained within any portion of Parcel 1.
2. No building or parking area, except as authorized in the R-43 zoning classification, shall be constructed or maintained within any portion of Parcel 3.
3. The use of that portion of the Premises designated as Parcel 2 shall be limited to the operation of a restaurant used as a catering facility only and any other use of Parcel 2 will be prohibited unless authorized by the Town Board of the Town of Smithtown.
4. The maximum noise levels generated by the Swim Club and/or any facilities occupying any portion of Parcel 2 of the Premises shall not exceed the following limits: (a) between the hours of 7:00 am and 10:00 p.m. daily: 55dBA; (b) between the hours of 10:00 p.m. and 7:00 a.m. daily: (50dBA). The foregoing limits shall not be exceeded by any noise levels measured at or within the real property line of the receiving of the property.

This DECLARATION and the rights and obligations created hereunder shall be perpetual and shall run with the land and be binding upon and inure to the benefit of the heirs, successors and assigns of the DECLARANT.

IN WITNESS WHEREOF, the DECLARANT has executed and acknowledged this Declaration the 8th day of August 2002.

GYRODYNE COMPANY OF AMERICA, INC.
By: Steven Maroney

PROPERTY DESCRIPTION

ALL that certain plot, piece or parcel of land situate, lying and being at St. James in the Town of Smithtown, County of Suffolk and State of New York being more particularly bounded and described as follows:

Parcel 1

Beginning at a point at the Intersection of the Northeasterly side of Mills Pond Road and the Southeasterly side of North Country Road (N.Y.S Route 25-A); running thence Northeasterly from said point of beginning along the Southeasterly side of North Country Road (N.Y.S Route 25-A) the following three (3) courses and distances:

1) N 33° 27' 20" E 292.34'
2) N 34° 29' 31' E 275.98'
3) N 35° 33' 42" E 713.63' to a point;

running thence from said point through land of Gyrodyne of America S 53° 20' 28' E 200.00' to the Southerly side of this parcel; running thence Southwesterly along the Southerly side of the herein described parcel and still through land of Gyrodyne of America S 35° 35' 42" W 1,320.70' to the Northeasterly side of Mills Pond Road; running thence Northwesterly along the Northeasterly side of Mills Pond Road N 41° 15' 40" W 188.25' to the intersection of the Northeasterly side of Mills Pond Road and the Southeasterly side of North Country Road (N.Y.S Route25-A) and the point or place of beginning, containing within said bounds 5.87 acres.

Parcel 2

Commencing at the point of intersection of the southeasterly side of North Country Road (State Route 25A) with the northeasterly side of Mills Pond Road;

Thence south 53 ° 20' 30" east a distance of200' to the point or place of BEGINNING.
Thence, from said point of beginning, south 53° 20' 30" east a distance of 121.62'.
Thence south 00° 12' 00" west a distance of 730.34'.
Thence north 36° 44' 03" west a distance of 554.76;
Thence north 33° 27' 20" east a distance of 429.52' to the point of place of BEGINNING

Parcel 3

Beginning at a point on the Northeasterly side of Mills Pond Road 188.25' Southeast of the Southeasterly side of North Country Road (N.Y.S Route 25-A), as measured along the Northeasterly side of Mills Pond Road; running thence Northeasterly and Southeasterly through lands now or formerly of Gyrodyne of America N 350 35' 42' E 182.96' and S 360 43' 58' E 573.45 to the Northerly side of Parkside Avenue; running thence Westerly along the Northerly side of Parkside Avenue S 75° 17' 30" W 201.40' to the Northeasterly side of Mills Pond Road; running thence Northwesterly along the Northeasterly side of Mills Pond Road N 33° 48' 40" W 364.57' and N 410 15' 40' W 78°.53' to the point or place of beginning, containing within said bounds 2.06 acres.

ELECTRIC EASEMENT TO LONG ISLAND LIGHTING COMPANY DATED 7/21/1911 AND RECORDED 8/24/1915 IN LIBER 913 CP 48 [SEE PAGES C-1 TO C-2]; PARTIALLY RELEASED BY AGREEMENT DATED 8/4/1966 AND RECORDED 8/17/1966 IN LIBER 6013 CP 339 [SEE PAGES C-3 TO C-5].

- This electric easement grants the Long Island Lighting Company the "right to erect and maintain lines or wire for the transmission of electric current for light, heat and power, including the necessary poles, cross arms, wires, cables, guys, anchors and appurtenances." A partial release of the easement, provided below by Agreement dated August 4, 1966 and recorded August 17, 1966, solely impacts the property located east of the proposed subdivision site. Specifically, the partial release applies solely to the easement area extending from Stony Brook Road east to the adjoining boundary lines of the Town of Brookhaven and Town of Smithtown. The proposed subdivision and the alternatives will not impact this electric easement, as maintained.

THIS AGREEMENT, made this twenty-first day of July, 1911, between JOHN LEWIS CHILDS, party of the first part, and the LONG ISLAND LIGHTING COMPANY, a domestic corporation, hereinafter called the "ELECTRIC LIGHT COMPANY", party of the second part, WITNESSETH, that in consideration of the sum of one ($1.00) dollar by each to the other in hand paid, the receipt whereof is hereby mutually acknowledged, and of the covenants and agreements herein contained, the parties hereto, for themselves, their successors and assigns, hereby covenant and agree as follows: FIRST. The Party of the first part grants to the Electric Light Company the right to erect and maintain lines or wire for the transmission of electric current for light, heat and power, including the necessary poles, cross arms, wires, cables, guys, anchors and appurtenances, upon and along the private road leading from a point situated about three hundred (300) feet more or less, north of the Oxhead Road where the same crosses the Stony Brook to Ronkonkoma Road; thence in a westerly direction to what is commonly called McKittrick's Crossing. SECOND. The Electric Light Company hereby agrees to erect only straight, selected poles and that all work necessary to erect and maintain the hereinbefore mentioned lines shall be done under the direction and supervision of the party of the first part, or his agent. THIRD. The Electric Light Company agrees not to place upon any pole more than two cross arms for its wires and cables. FOURTH. The Electric Light Company further agrees that in the event of the property being sold, transferred, or in any way disposed of by the party of the first part to transfer the poles, wires and appurtenances to the nearest street or highway leading across the property in the hereinbefore mentioned directions as shall be designated by the then owner or owners, or at the option of the party of the first part in case of such sale or transfer, the Electric Light Company hereby agrees to either transfer said poles, wires and appurtenances to along the southerly boundary line or the

property of the party of the first part or purchase a strip of land ten (10) feet wide along such southern boundary line at a pro rata price per acre, which was paid or received for such sale, on which to place such construction. FIFTH. The Electric Light Company is to assume all risk or liability for damage by reason of said pole, line, wires constructed across said property. IN WITNESS WHEREOF, The party of the first part has hereunto subscribed its name by its District Manager, who is duly authorized the role by its Board of Directors and affixed hereto its corporate seal by like order.

THIS AGREEMENT, made this 4th day of July, 1966, between the LONG ISLAND LIGHTING COMPANY, a New York corporation duly organized and existing under and by virtue of the laws of the State of New York, having an office at 250 Old Country Road, Mineola, Nassau County, New York, and SPRUCEDALE BUILDING CORPORATION, a domestic corporation having a place of business at 6090 Jericho Turnpike, Commack, New York and LEVITT AND SONS, INCORPORATED, a domestic corporation having a place of business at 325 Nesconset Highway, Hauppauge, New York.

WHEREAS by virtue of a certain agreement dated July 21, 1911 and recorded in the Suffolk County Clerk's office on August 24, 1915, in Liber 913 of Conveyances at Page 48, JOHN LEWIS CHILDS granted to the LONG ISLAND LIGHTING COMPANY certain electric transmission easements as described in said easement agreement, said easements being over and along property situate at Stony Brook, in the Towns of Brookhaven and Smithtown, Suffolk County, New York and lying between Stony Brook or Gould Road on the East and the Rail Road crossing formerly known as McKittrick's Crossing on the west, and

WHEREAS by Mesne Conveyances title to a portion of the lands affected by said grant of easement has been acquired by SPRUCEDALE BUILDING CORPORATION, LEVITT AND SONS, INCORPORATED and others, and,

WHEREAS, the parties hereto desire that the portion of said land and easement as set forth in said agreement hereinabove referred to owned by them be released from said easement and the parties have agreed that the LONG ISLAND LIGHTING COMPANY release said portion of the easements as granted by said agreement dated July 21, 1911 as hereinabove referred to.

NOW THEREFORE, in consideration of the sum of One Dollar ($1.00) and other good and valuable considerations, the receipt of which is hereby acknowledged, the LONG ISLAND LIGHTING COMPANY does herby release, abandon and surrender to said SPRUCEDALE BUILDING CORPORATION and LEVITT AND SONS, INCORPORATED, that portion only of said easement rights obtained by LONG ISLAND LIGHTING COMPANY by virtue of said agreement hereinabove referred to dated July 21, 1911 and recorded as aforesaid, said portion being hereby released being that portion of said easement lying between Stony Brook or Gould Road on the east and the boundary line between the Town of Smithtown and the Town of Brookhaven on the west.

It is the intention of the LONG ISLAND LIGHTING COMPANY to release only the said portion of the easement granted by said agreement dated July 21, 1911, it being expressly agreed that the remaining portion of said easement lying west of said boundary line between the Town of Smithtown and Town of Brookhaven shall remain in full force and effect.

IN WITNESS WHEREOF, the LONG ISLAND LIGHTING COMPANY has caused these presents to be signed on the day and year first above written.

DRAINAGE EASEMENTS MADE BY GYRODYNE CO. OF AMERICA, INC. TO THE TOWN OF SMITHTOWN DATED 10/25/1996 AND RECORDED 12/19/1996 IN LIBER 11806 CP 976 [SEE PAGES C-45 TO C-49], AND DATED 6/10/1997 AND RECORDED 7/8/1997 IN LIBER 11839 CP 509 [SEE PAGES C-50 TO C-53].

- This drainage easement, dated October 25, 1996, is located at the northeast corner of the intersection of Mills Pond Road and North Country Road (State Route 25A), with a total

area of 0.046 acres. The sole purpose of this easement is to provide the Town a right of way over real property to "construct, lay, relay, repair, operate, maintain and remove storm drainage pipe or pipes and other drainage appurtenances." The proposed subdivision and the alternatives do not impact this drainage easement, as maintained.

GRANT OF DRAINAGE EASEMENT

TEMPORARY EASEMENT made this 25 day of October, 1996, between GYRODYNE CO. OF AMERICA. INC., with offices at 7 Flowerfield, Suite 28, St. James, NY 11780, and TOWN OF SMITHTOWN, a municipal corporation, having its offices at the Town Hall, 99 West Main Street, Smithtown, New York, party of the second party:

WITNESSETH:

That the party of the first part for good and valuable considerations and the payment of the sum of ONE DOLLAR ($1.00) lawful money of the United States, paid by the party of the second part to the party of the first part, the receipt whereof is hereby acknowledged, DO HEREBY CONSENT, grant, convey and release to the party of the second part, its successors and assigns, a twenty year easement commencing 25 October, 1996, and right-of-way under, over, through and across the lands hereinafter described, situated at St. James In the unincorporated area of the TOWN OF SMITHTOWN, Suffolk County, Now York, in, under and upon which to construct, lay, relay, repair, operate, maintain and remove storm drainage pipe or pipes and other drainage appurtenances which will be maintained by and at the expense of the TOWN OF SMITHTOWN, with the right to set up, operate, repair and maintain the same and with a right of ingress and egress to and from said easement and right-of-way for such purposes. The said twenty year easement shall run with the land for the term of the easement. The real property over which said temporary easement is granted, conveyed and released hereby to the party of the second part is as follows:

SEE SCHEDULE "A" ATTACHED

At the conclusion of the temporary easement period, 25 October 2016, GYRODYNE or its successor shall accept the in-place drainage system in an "as is, where is" condition, with no further expense to the TOWN OF SMITHTOWN, provided that all links (weir) between the pond at Mills Pond end the Gyrodyne property have been severed and sealed.

IN WITNESS WHEREOF, the party of the first part has duly executed this garment, and the party of the first part has caused this agreement to be executed on its behalf by its duly authorized officer and its corporate seal to be hereunto affixed, the day and year first above written.

TOWN OF SMITHTOWN	GYRODYNE CO. OF AMERICA INC.
Patrick Vecchio, Supervisor	Dimitri F. Papadakos, President

PROPERTY DESCRIPTION

ALL that certain plot, piece or parcel of land located at St. James in the Town of Smithtown, County of Suffolk and State of New York being more particularly bounded and described as follows:

Beginning at a point formed by the Intersection of the easterly side of Mills Pond Road with the southerly side of N.Y.S Route 25A);

Running thence along the southerly side of N.Y.S. Route 25A North 33° 27' 20" E 97.60' to a point;

Thence S 1° 27' 07' E 17.28' to a point;
Thence S 33° 27' 20' W 70.68' to a point;
Thence S 41° 15' 40' E 64.31' to a point;
Thence S 1° 27' 07' E 23.41' to the easterly side of Mills Pond Road;
Thence along the easterly side of Mills Pond Road N 41° 15' 40" W 68.56' to the southerly side of N.Y.S. Route 25-A at the point or place of beginning.

Containing within said bounds 1,980 sq. ft. or 0.046 acres.

S.C.T.M. Dist 0800 40 02 p/o 13

GRANT OF DRAINAGE EASEMENT

EASEMENT made this 10th day of June 1997, between GYRODYNE CO. OF AMERICA. INC., with offices at 7 Flowerfield, Suite 28, St. James, NY 11780, and TOWN OF SMITHTOWN, a municipal corporation, having its offices at the Town Hall, 99 West Main Street, Smithtown, New York, party of the second party:

WITNESSETH:

That the party of the first part for good and valuable considerations and the payment of the sum of ONE DOLLAR ($1.00) lawful money of the United States, paid by the party of the second part to the party of the first part, the receipt whereof is hereby acknowledged, DOES HEREBY CONSENT, grant, convey and release to the party of the second part, its successors and assigns, a perpetual easement and right-of-way under, over, through and across the lands hereinafter described, situated at St. James In the unincorporated area of the TOWN OF SMITHTOWN, Suffolk County, Now York, in, under and upon which to construct, lay, relay, repair, operate, maintain and remove storm drainage pipe or pipes and other drainage appurtenances which will be maintained by and at the expense of the TOWN OF SMITHTOWN, with the right to set up, operate, repair and maintain the same and with a right of ingress and egress to and from said easement and right-of-way for such purposes. The said perpetual easement shall run with the land. The real property over which said easement is granted, conveyed and released hereby to the party of the second part is as follows:

SEE SCHEDULE "A" ATTACHED

This easement supersedes prior easement dated October 25, 1996, and recorded in the Suffolk County clerk's Office on December 19, 1996, in Liber 11806, at page 976.

IN WITNESS WHEREOF, the party of the first part has duly executed this garment, and the party of the first part has caused this agreement to be executed on its behalf by its duly authorized officer and its corporate seal to be hereunto affixed, the day and year first above written.

GYRODYNE CO. OF AMERICA INC.
Dimitri F. Papadakos, President

SCHEDULE "A"
DRAINAGE EASEMENT DESCRIPTION

ALL that certain plot, piece or parcel of land located at St. James in the Town of Smithtown, County of Suffolk and State of New York being more particularly bounded and described as follows:

Beginning at a point formed by the Intersection of the easterly side of Mills Pond Road with the southerly side of N.Y.S Route 25A);

Running thence along the southerly side of N.Y.S. Route 25A North 33° 27' 20" E 97.60' to a point;

Thence S 1° 27' 07' E 17.28' to a point;

Thence S 33° 27' 20' W 70.68' to a point;

Thence S 41° 15' 40' E 64.31' to a point;

Thence S 1° 27' 07' E 23.41' to the easterly side of Mills Pond Road;

Thence along the easterly side of Mills Pond Road N 41° 15' 40" W 68.56' to the southerly side of N.Y.S. Route 25-A at the point or place of beginning.

Containing within said bounds 1,980 sq. ft. or 0.046 acres.

S.C.T.M. Dist 0800 40 02 p/o 13

2.7. Design and Layout

The proposed mixed-use campus plan has been carefully laid out to be compatible with the surrounding area and preserve the existing landscape character. The subdivision layout was designed to enhance the buffer along Route 25A and to the R-43 zoned property, and to provide a pedestrian greenway throughout the site. The applicant is cognizant of the community's and the Town's desire to maintain the wooded and natural buffer along NYS Route 25A. Therefore, other than improvements to the existing curb cut, the subdivision plan will maintain the area as an open, 200-foot wide buffer. In total, the proposed mixed-use campus plan provides for approximately 49% of the total site area as open space (approximately 36.5 acres).

The design intent is also to create green spaces connecting the lots. About two (2) miles of walking trails and nature trails are designed within the expansive open space areas to be preserved. These open space areas will be open to the public. Additionally, several parking areas shall be designated as land banked parking to increase the green area on the property.

The proposed interior roads will have dedicated bike lanes, vegetated swales and tree-lined corridors to provide a campus environment and character, also providing traffic calming benefits and connectivity benefits to the surrounding road network. The dedicated bike lanes proposed on the campus roads will have direct connectivity to bike routes on NYS Route 25A and Mills Pond Road. Similar to existing hedgerows on the property, proposed tree plantings will frame open space areas and provide "classic" tree canopies framing the interior roadways.

The proposed landscape plantings will utilize indigenous trees, shrubs and groundcovers and strategically augment the existing landscape along the proposed campus roadways, campus entrances and reinforcement of buffers along NYS Route 25A and Mills Pond Road. Most existing trees will be protected and remain in place. Within the campus property, hundreds of mature evergreen trees and hedgerows will be preserved. The proposed plant list will include a mix of both native plants and ornamental plants. No invasive plantings will be introduced. The interior street tree plantings and foundation plantings will consist of both nursery-grown ornamental and native plantings. The introduction of native/indigenous plantings (trees, shrubs and groundcovers) is proposed to promote wildlife and reduce dependence on irrigation, fertilizers, and pesticides.

The proposed campus layout and landscaping plan has been developed using Low Impact Development (LID) principles – particularly to aid in stormwater management and the protection of local water quality. Wherever possible, natural areas will be maintained or improved. Integrated LID principles include the use of roadside vegetated swales, naturalized detention areas and catch basin inserts to provide additional filtration prior to groundwater recharge.

In addition, approximately 20 acres of successional field, meadow and the fresh water ponds will remain in place. The northerly pond area will be utilized as a major component of both the landscape and stormwater management system. Based on the estimated full development of the subdivision lots, a total of 45.17 acres (60.2% of the site) will consist of natural or managed landscaped areas.

High-level planning considerations that factored into the proposed layout include:

Lot 1 existing light industrial buildings: The access from Mills Pond Road is retained as an easement through Lot 1 to avoid dividing the lot across the access way

Lot 2 existing catering hall: No changes proposed, with the exception of a wastewater pumping station

Lot 3 landbanked parking: Accessed via a "Road C" connection to Lot 1 to serve as overflow parking, if needed

Lot 4 hotel: Vehicle/pedestrian connection to the Flowerfield catering hall for cross access and shared parking; drop-off area in front of the main door for hotel guests; the longest facades around the building face the vegetated Route 25A buffer and the existing ponds

Lots 5 and 6 medical or R&D office: The front of each building is oriented towards the same central landscaped green space/plaza

Lots 7 and 8 assisted living: The front of each building (designated by the inner portion of the "U" shape) is oriented towards the same central landscaped green space/plaza

Lot 9 common areas and interior roads: Two-lane interior roads (one lane in each direction) are provided for on-site traffic. The subdivision layout provides 60-foot road right-of-way, sufficient width for two travel lanes, bicycle lanes, and fire truck access (26 feet required, according to the latest Fire Prevention Code). The internal roads will also have roadside vegetated swales for stormwater flow and management. Interior cul-de-sacs have been laid out with 35-foot minimum inner radii, which is large enough to accommodate a UPS delivery truck[12] or similarly sized truck[13].

New York State Integrated Pest Management (IPM) Program

In addition to the proposed native and indigenous plantings associated with the Proposed Action, the overall landscape maintenance approach is an important consideration to mitigating potential environmental impacts associated with synthetic fertilizer applications and overuse of pesticide applications. Open space within Lot 9 will be managed by one landscape contractor. This provides for the opportunity to set minimum qualifications for the landscape contractor to be experienced with the implementation of Integrated Pest Management (IPM) principles and utilizing Organic Land Care Best Management Practices.[14] This type of qualification and commitment to land care management would be regulated through a property owners association. These principles and best management practices will provide an alternative to standard applications of fertilizers, pesticides and herbicides. Fertilizer and pesticide treatments would be limited and applied in a preventive measure and only on an as-needed basis as determined by a qualified landscape contractor. It is recommended that, at a minimum, Lot 9 (common area) require an IPM program as part of the site's ongoing monitoring and maintenance program.

2.8. Parking

Based on the Town of Smithtown Zoning Code, the various potential land uses will require 2,346 parking spaces, distributed among the various lots as follows:

Table 2-1: Required Parking

Lot	Land Use	Required Parking[15]
Lot 1	132,719 s.f. existing industrial-commercial	660
Lot 2	Existing Catering Hall (capacity for 874	1 per 4 people = 218.5 (219)
Lot 3	Landbanked Parking	0

[12] UPS Freight Fleet Guide accessed via http://ltl.upsfreight.com/shipping/instructions/Index.aspx?p=FINFO
[13] American Association of State Highway and Transportation Officials (AASHTO) *A Policy on Geometric Design of Streets and Highways, 5th Edition (2004) Exhibit 2-2: Minimum Turning Radii of Design Vehicles*
[14] New Jersey Agricultural Experiment Station. Organic Land Care Best Management Practices Manual. April 2017 https://njaes.rutgers.edu/pubs/publication.php?pid=E357
[15] Town of Smithtown zoning ordinance § 322-62 (Nonresidential Parking Schedule)
[16] Flowerfield catering hall Certificate of Occupancy provided to Cameron Engineering – see Appendix L page L-1

Lot	Land Use	Required Parking[15]	
Lot 4	Proposed 150-room Hotel with Restaurant	1.25 per room = 187.5 (188)	Lot 3 total: 379.2 (380)
	Proposed 10,000 s.f. day spa/fitness center	1 per 150 s.f. = 66.7 (67)	
	Proposed 500-seat Conference Center	1 per 4 seats = 125	
Lot 5	Proposed 55,350 s.f. Medical or R&D Office	1 per 150 s.f. = 369	
Lot 6	Proposed 74,650 s.f. Medical or R&D Office	1 per 150 s.f. = 498	
Lot 7	Proposed Assisted Living: 110 units	1 per unit = 110	
Lot 8	Proposed Assisted Living: 110 units	1 per unit = 110	
Lot 9	Proposed Common Area and STP	0	
Total Required Parking		2,346 spaces	

The Preliminary Subdivision Plan depicts how each lot would provide sufficient parking to satisfy Town code, using a mix of paved, land-banked, and shared parking. As shown below, Lot 1 will have access to 660 or more spaces because Lot 2 (a catering hall) utilizes little or no weekday daytime parking. Lot 2 will have more parking than required by code.

When one considers the paved parking, land-banked parking, and shared spaces that can serve two or three uses at different times, the site will function as if it has more than sufficient parking site-wide than what will be needed. Landbanked and shared parking are described in the Traffic Study and in Sections 9.3 (Parking) and 12.2.1 (Design Measures to Preserve Open Space).

Table 2-2: Provided Parking

Existing Lots

Lot	Land Use	Required Spaces	Total Provided
1	Mixed-Use Buildings	660 with full occupancy	441 (Shared parking satisfies remaining demand – see Table 9-3 on page 9-9)
2	Catering Hall	219	355 during evenings and weekends
Total Parking: Existing Uses		879	796

		Proposed New Lots	Proposed Parking	
Lot	Land Use	Required Spaces	Paved and Striped	Land-banked
3	Landbanked Parking	0	0	181
4	Hotel w/Restaurant	188	258	0
	Day Spa/Fitness	67		
	Conference Center	125	0	0
5	Medical / R&D Office	369	308	61
6	Medical / R&D Office	498	418	80
7	Assisted Living	110	110	0
8	Assisted Living	110	110	0
9	STP*	0		
Total Parking: New Uses		1,467	1,204	322

** Note: this excludes 2 spaces provided next to the STP since these spaces will be for maintenance vehicles only and will not be available to the public*

As explained in detail in Section 9, spaces in some lots will be shared with adjacent lots to satisfy parking demand without paving every individual required parking space. Total paved parking is 796 + 1,204 = 2,000 spaces, excluding 2 spaces by the STP that will not be available to the public. There will also be 322 land-banked spaces that could be paved in the future if they are needed.

2.9. Access Improvements

The proposed subdivision will make use of the existing site driveways on Mills Pond Road and NYS Route 25A. It will modify the existing NYS Route 25A driveway (also called the "Fairgrounds" driveway), and it will add a right-turn-only driveway on NYS Route 25A near the middle of the Gyrodyne frontage. See Figure 2-2: Site Access on page 2-25.

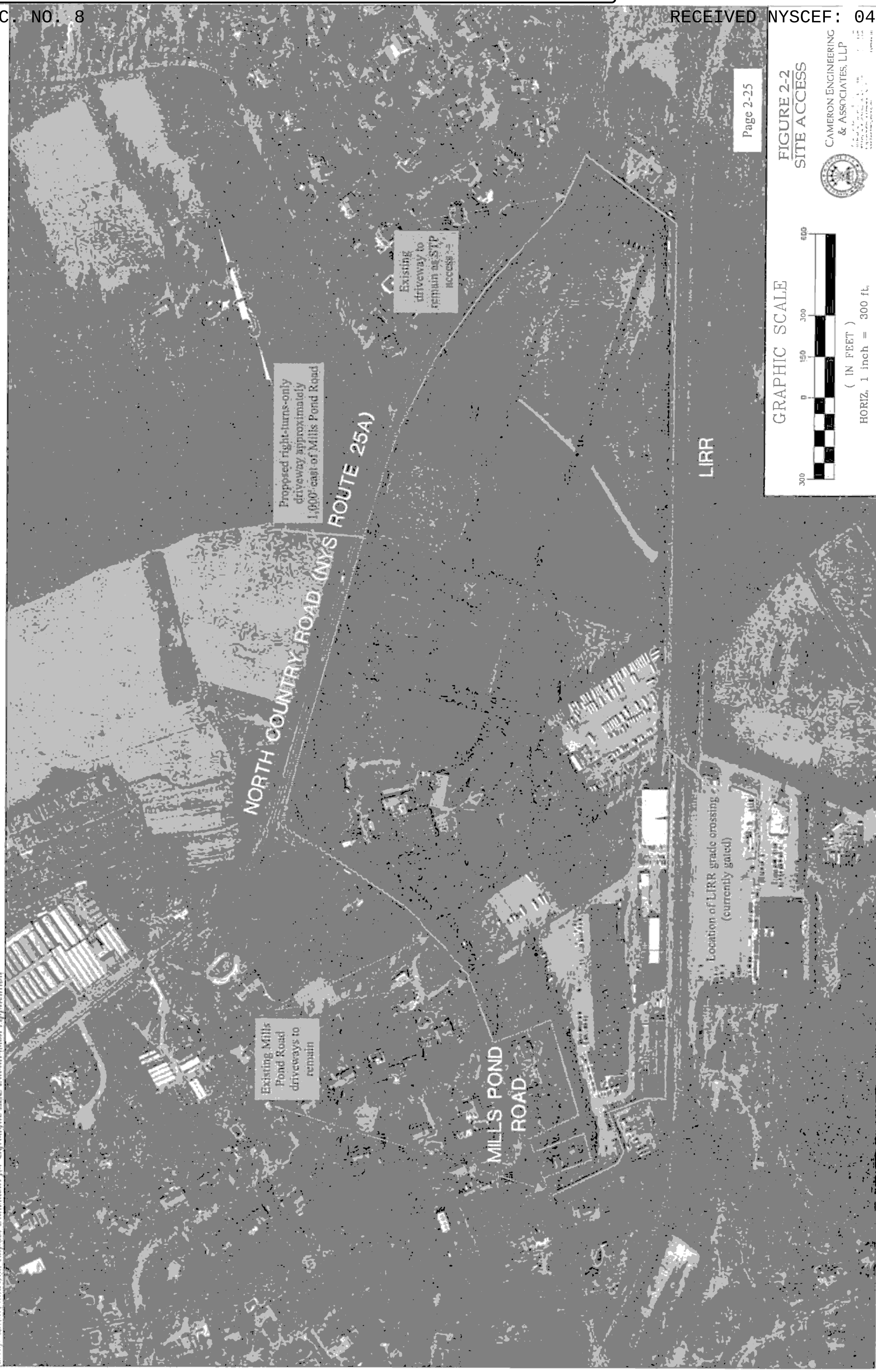
The main driveway will be the existing northernmost site access on Mills Pond Road at Parkside Drive (the most direct access to Flowerfield Celebrations). The two other Mills Pond Road driveways to the south mainly serve the existing light industrial uses. All three driveways on Mills Pond Road will remain as unsignalized T-intersections, each with one lane for entering traffic, one exiting lane for left and right turns combined, and stop signs controlling the exit maneuver onto Mills Pond Road.

The other main driveway will be a new driveway on NYS Route 25A approximately halfway between Mills Pond Road and the existing NYS Route 25A "Flowerfield Fairgrounds" driveway (which is roughly 600 feet east of Ashleigh Drive). Based on past direction from NYSDOT associated with earlier applications at this property[17], this new driveway will be configured as a right turns-only unsignalized T-intersection.

The existing easternmost driveway will remain an unsignalized T-intersection with stop sign control. It will serve the on-site sewage treatment plant and will also provide another egress from Lots 7 and 8 for drivers who want to head east after they exit. This existing low-volume driveway will likewise be configured for right turns in and out only, per NYSDOT direction associated with the prior DEIS and subsequent applications.

Gyrodyne has been actively coordinating the proposed re-opening of the railroad crossing between the Flowerfield site and the Stony Brook R&D Park. While significant progress has been made in this effort, including support from Stony Brook University, there is still a degree of uncertainty as to when this might be accomplished. Timing associated with LIRR and NYSDOT involvement and with one or more public hearings required to secure an approval results in an uncertain timeframe. Accordingly, Gyrodyne has modified the proposed Preliminary Subdivision Plan to clarify the railroad crossing as a "possible/future re-opening of railroad crossing". The updated Preliminary Subdivision Plan would not result in the re-opening the railroad crossing.

[17] NYSDOT correspondence to Cameron Engineering, provided in Appendix B: Correspondence, dated September 30, 2007 and October 29, 2010.


Page 2-25
FIGURE 2-2
SITE ACCESS
CAMERON ENGINEERING & ASSOCIATES, LLP
GRAPHIC SCALE
(IN FEET)
HORIZ. 1 inch = 300 ft.
LIRR
NORTH COUNTRY ROAD (NYS ROUTE 25A)
MILLS POND ROAD
Existing driveway to remain as STP access
Proposed right-turns-only driveway approximately 1,000' east of Mills Pond Road
Existing Mills Pond Road driveways to remain
Location of LIRR grade crossing (currently gated)

2.10. Circulation

There will be a new internal road system to provide access to each lot and to connect the site driveways. The internal roads (to be privately owned and maintained) will be designed to accommodate internal traffic while preventing non-site traffic from "short-cutting" through the property. The driveways will be modified as necessary with respect to lane width, grading, and signage, to accommodate site traffic. The internal roads will have directional signage to route drivers to local streets.

2.11. Sustainability, Use and Conservation of Energy

It is premature to identify each specific "green" strategy while the subdivision process is ongoing. Specific environmentally friendly construction/design elements will be developed for Town approval during the site plan and building permit process. The latest subdivision plan includes shared parking between adjacent lots, as well as more than 180 land-banked parking spaces that will remain green unless they are truly needed. This will minimize the potential heat island effect from paving existing green space.

The applicant anticipates that future property owners will be encouraged to evaluate and develop a range of strategies as they develop their individual lots, such as:

- Minimizing the area of each lot to be disturbed
- Considering native, drought-tolerant vegetation to minimize irrigation needs
- Considering Low Impact Development (LID) principles for stormwater management
- Considering siting and architectural designs to maximize passive daylighting
- Considering rainwater harvesting to reduce stormwater run-off
- Considering solar panels
- Considering high-efficiency plumbing fixtures and HVAC equipment
- Considering LED lighting fixtures
- Considering use of local/regional materials, renewable materials, and recycled content
- Considering indoor air quality management practices during and after construction
- Considering low emitting materials (paints, coatings, solvents, adhesives, carpets, etc.) that minimize off-gassing
- Considering high R-value materials for building envelopes, glass, ducts, pipes, etc.

Energy for Construction

The construction process would consume energy in the fabrication of the materials used to construct the new buildings and infrastructure (approximately 75%) and during the delivery and assembly of construction materials (approximately 25%).

Complete Streets-Bicycle Accommodations

The proposed interior road cross section includes striped bicycle lanes to provide designated cycle paths as well as to visually narrow the remainder of the travel way, which is considered an interior traffic calming measure to encourage lower travel speeds. Bicycles will be able to connect to the "Share the Road" bicycle route on Route 25A.

2.12. Permits and Approvals Required

Following the completion of SEQRA, various permits or approvals would be required for the Proposed Action to be carried out. Table 2-3 below indicates the Subdivision phase's required approvals; Table 2-4 follows on page 2-27 with the approvals that will be required during the site plan phase (post-subdivision).

Table 2-3: Permits and Approvals (Subdivision Phase)

Agency	Type of Permit or Approval
Town of Smithtown Planning	Subdivision
Town of Smithtown Engineering Department	Stormwater Pollution Prevention Plan (SWPPP)
Suffolk County DHS	Subdivision, On-Site Sewage Treatment Plant (STP)
Suffolk County Planning	Subdivision Referral (complete as of 2018)
NYSDEC	Freshwater Wetlands Permit, SPDES Permit for On-site STP
NYSDOT	Highway Work Permits

Table 2-4: Permits and Approvals (Post-Subdivision Phase)

Agency	Type of Permit or Approval
Town of Smithtown Town Board	Site Plans for individual lots
Town of Smithtown Engineering Department	Stormwater Pollution Prevention Plans (SWPPPs) for individual lots
Town of Smithtown Building Department	Building Permit, Sign Permit
Town of Smithtown Board of Zoning Appeals	Modification of steep slopes (if applicable on individual site plans)
St. James Water District	Connect new uses to public water system
NYSDEC	Freshwater Wetlands Permit, General Permit for Stormwater Discharges from MS4s
Town of Brookhaven	Off-site traffic improvements involving Stony Brook

In addition, in the event that there is a future re-opening of the railroad crossing, approvals will be needed from NYSDOT/MTA/LIRR. In addition, these agencies may require public hearings prior to granting any approval for re-opening the railroad crossing.

2.13. Construction and Schedule

Duration of Construction

No construction is anticipated on Lot 1 or Lot 2, with the exception of a wastewater pumping station. The newly subdivided lots 3 through 9 would have new buildings, parking, roads, landscaping, and utility infrastructure, with the building on Lot 9 consisting of the proposed STP.

Construction duration and schedules cannot be determined at this preliminary stage. These features depend in large part on the eventual sale dates of each lot, and on whether the

entities buying from Gyrodyne, LLC purchase one lot or multiple lots. Additionally, market conditions at the time(s) of sale will dictate the need for and the duration of market absorption of the assisted living units and/or office tenants. Based on the lot sizes (±2.15 to ±6.03 acres) and the ability to site a single building on each lot according to the Subdivision Plan, each lot could foreseeably be built and developed in a single phase. It is also possible that each lot could be developed separately, or that multiple lots could be developed at the same time with some degree of overlap. The STP on Lot 9 will be built prior to the occupancy of any new land use associated with this subdivision.

On the Preliminary Subdivision Plan, the amount of "cut" material to remove from the property is just under 38,000 cubic yards for the roads, drainage reserve areas (DRAs), and STP leaching areas. At this preliminary stage, 30-yard and 40-yard trucks are being considered for these tasks (67% 40-yard trucks). The time required for this task is controlled by the volume of material to be removed, adjusted with a 5% "fluff" factor to account for the fact that moving the material will introduce air voids, and the material will not be packed down for transport. As shown in Appendix M (page M-2) the net calculated total is 37,124 cubic yards (37,897 cubic yards of cut and 773 cubic yards of fill). For the purposes of this calculation, the proposed DEIS considers 38,000 cubic yards of cut to be conservative:

- 38,000 cubic yards + 5% fluff = 39,900 cubic yards of space needed
- 67% 40-yard truck size and 33% 30-yard truck size represents an average truck size of 36.7 cubic yards
- The total cut volume could take 988 trips:
  - (38,000 cubic yards x 1.05) / 36.7 average cubic yards per truck = 1,088 trips
- These trip numbers are then increased by 10% to be conservative and to account for individual days when conditions may not permit work (i.e., holidays, inclement weather, potential truck breakdowns):
  - 1,088 x 1.1 = 1,197 total trips
- 30-yard trucks can be loaded in approximately 15 minutes, and 40-yard trucks can be loaded in approximately 30 minutes. This works out to an average of 25 minutes per truck (2-3 truckloads per hour in any one area). If there are ten working hours per day, there will be 24 truck hauls per day, so these tasks will require roughly 50 days:
  - 1,197 total trips / 24 trips per day = 50 days

This document considers construction occurring between 2019 and 2020. It is the applicant's opinion that shifts in this timeframe will not impact the findings in this DEIS because the annual ambient growth rate is small (less than 0.5 percent per year – see Appendix F page F-37).

Daily Construction Schedule

Construction activities (e.g. grading and excavation) would be confined to weekday hours between 7:00 a.m. and 6:00 p.m. to abide by Town noise ordinance requirements (see Section 14.2 on page 14-1). Idling of heavy equipment will be restricted to five minutes per hour during the weekday hours of 8:00 a.m. to 6:00 p.m., also to abide by the Town noise ordinance.

3. Geology

3.1. Existing Conditions

Long Island's geology is especially important because it relates to the entire population's source of drinking water. Because all of Nassau and Suffolk County drinking water is derived from groundwater, the geological formations which retain the groundwater are collectively referred to as a "sole-source aquifer." These aquifers are recharged by rainfall, and consequently, all activities that occur at the surface have the potential to impact the quantity and quality of the aquifers' recharge.

Long Island ultimately rests on bedrock, which is impermeable rock composed of schist and gneiss. The bedrock under Suffolk County varies in depth from 400 feet below sea level at Lloyd Neck to 2,200 feet below sea level in the south-central part of the county. The bedrock is overlain by Cretaceous sediment called the Raritan formation and the Magothy formation.

The Lloyd Aquifer rests on bedrock and is isolated from the shallower Magothy Aquifer by a 100-foot thick layer of clay. The Lloyd aquifer and the overlying clay are part of the Raritan formation, which consists of fine- to coarse-grained sand and gravel.

The Magothy formation consists of sand, silt, and clay fluvial deposits with scattered clay lenses. Part of the Magothy formation is overlain by Jameco gravel, which is believed to have been deposited by glaciers of the Kansan stage. These deep gravel deposits are mainly in the southwestern part of Suffolk County and their extent is unknown. Elsewhere, the Magothy formation is overlain by marine clay identified as Gardiner's clay. This formation is thought to be an interglacial deposit, possibly of the Sangamon interglacial stage. In still other parts of Suffolk County, the Magothy is overlain directly by upper Pleistocene deposits.

3.2. Potential Impacts of Proposed Subdivision

Only the surface glacial deposits would be impacted by new development at the Flowerfield site. Grading activity would result in removal and deposition of material throughout the site (see following sections on Soils and Topography). However, this only affects surface deposits, so there is no anticipated impact to deeper geological layers.

3.3. Proposed Mitigation

Mitigation for the effects of site grading is discussed in the following sections on Soils and Topography.

4. Soils

4.1. Existing Conditions

The Web Soil Survey of Suffolk County[18] characterizes the soils of Suffolk County and separates them into "series" and "phases." Series are broken down into phases based on differences in texture of the surface soil and in slope, stoniness, or some other difference that affects the use of the soil by man. A total of seven soil types were identified on the project site including soils from the Carver Series (CpE), the Haven Series (HaB), the Raynham Series (Ra), the Riverhead Series (RdA, RdB, RhB), and the Scio Series (SdB).

Figure 4-1 on page 4-5 maps the locations and extents of each of these soil types on the Flowerfield site. The following details the attributes of the series and soils.

Carver Series

The Carver series consists of deep, excessively drained, coarse-textured soils. These soils range from nearly level to steep and are found throughout Suffolk County on rolling moraines and broad outwash plains. Slopes range from 0 to 35 percent.

In a representative profile, the surface has a thin layer of leaf litter and partly decayed organic matter. Below the surface is a surface layer of dark gray sand that is about 3 inches thick. The subsurface layer is gray or light-gray loose sand to a depth of 8 inches. The subsoil is loose sand to a depth of about 22 inches. The upper part of the subsoil is brown and the lower part of the subsoil is strong brown. The substratum, to a depth of 60 inches, is loose sand that contains some gravel. It is light yellowish-brown to brownish-yellow to a depth of 31 inches. Below this 31-inch depth, the substratum is light yellowish-brown.

Carver soils have very low available moisture capacity. Natural fertility is very low. Permeability is rapid throughout.

> CpE - Carver and Plymouth Sands, 15 to 35 percent slopes - These soils are almost exclusively on moraines, except for a few steep areas on side slopes along some of the more deeply cut drainage channels on outwash plains. On morainic landforms, these areas are large and slopes are generally complex. On the outwash plains, the areas are in long, narrow strips parallel to the drainage channels. Soils may be any combination of Carver and Plymouth series. The Carver soil has a profile described as representative of that series, except that the gravel content is greater. The Plymouth soil has a profile described as representative of that series, except that its texture is sand rather than loamy sand, and it also has a higher gravel content.
>
> CpE soils cover approximately 2.3 percent (i.e., 1.7 acres) of the 74.98-acre site.

Haven Series

The Haven series consists of deep, well-drained, medium-textured soils that formed in a loamy or silty mantle over stratified coarse sand and gravel. These soils are present throughout the county, but most areas with Haven series soil are on outwash plains

[18] USDA Natural Resources Conservation Service Web Soil Survey accessed May 3, 2017 via https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

between the two terminal moraines. Slopes range from 0 to 12 percent, but they are generally flatter at 1 to 6 percent.

In a representative profile, a thin layer of leaf litter and decomposed organic matter is on the surface in wooded areas. Below this is the surface layer of dark grayish-brown loam that is about 3 inches thick. The subsoil is dark brown to strong brown friable loam to a depth of about 19 inches. The lower part, to a depth of 28 inches, is yellowish-brown, friable gravelly loam. The substratum, to a depth of 55 inches, is yellowish-brown to brownish-yellow loose sand and gravel.

Haven soils have high to moderate available moisture capacity. Natural fertility is low. Internal drainage is good. Permeability is moderate in the surface layer and subsoil, and it is rapid or very rapid in the substratum.

HaB - Haven Loam, 2 to 6 percent slopes – This soil is on outwash plains and moraines, commonly along shallow, intermittent drainage channels. Slopes are short. In larger areas, this soil is mostly undulating. It has the profile described as representative of the series. The HaB soils cover approximately 5.3 percent (i.e., 4.0 acres) of the 74.98-acre site.

Raynham Series

The Raynham series consists of deep, poorly drained to somewhat poorly drained, medium-textured soils that formed in loam, very fine sandy loam, or silt loam. This soil generally is around tidal marshes and creeks of the south shore and in areas around the headwaters of the Peconic River. Slopes are less than 3 percent, and in many places, the areas are concave. Native vegetation consists of red maple and blackgum and high bush blueberry. Some white oak and pitch pine also grow.

Ra - Raynham Loam - This is the only Raynham soil mapped in the County. This nearly level soil is found in low-lying areas beside marshes and creeks. In many places, it forms a transition between poorly drained areas and better-drained areas on uplands. It is on outwash plains and moraines. Areas are generally small and irregular. Included with this soil in mapping are wet spots of Berryland soils and a very poorly drained silt loam soil. Also included are soils with a water table at a similar depth as Raynham soils, but which lack the Raynham soil's gray color, which have slightly coarser subsoil, and which have sand and gravel below a depth of 30 inches. The hazard of erosion is slight on this Raynham soil. The Ra soils cover approximately 1.3 percent (i.e., 1.0 acre) of the 74.98-acre site.

Riverhead Series

The Riverhead Series consists of deep, well drained, moderately coarse-textured soils that formed in a mantle of sandy loam or fine sandy loam over thick layers of coarse sand and gravel. These soils occur throughout the County in rolling to steep areas on moraines and in level to gently sloping areas on outwash plains. These soils range from nearly level to steep, though they are generally nearly level to gently sloping.

In a representative profile, the surface layer is brown to dark brown sandy loam about 12 inches thick. The upper part of the subsoil, to a depth of about 27 inches, is strong brown, friable sandy loam. The lower part of the subsoil is yellowish-brown, very friable loamy

sand to a depth of about 32 inches. Below is yellowish-brown, friable gravelly loamy sand to a depth of about 35 inches. The substratum is very pale brown and brown loose sand and gravel or sand to a depth of 65 inches.

Riverhead soils have moderate to high available moisture capacity. Internal drainage is good. Permeability is moderately rapid in the surface layer and in the subsoil, and it is very rapid in the substratum. Natural fertility is low.

RdA – Riverhead Sandy Loam. 0 to 3 percent slopes – This soil had the profile described as representative of the series. It is generally on outwash plains, and the areas are large and uniform. Where this soil occurs on outwash plains, it generally has slope characteristics of this landform. Slopes are undulating in places. A few small, irregular areas are on moraines. The RdA soils cover approximately 14.3 percent (i.e., 10.7 acres) of the 74.98-acre site.

RdB – Riverhead Sandy Loam, 3 to 8 percent slopes – This soil is on moraines and outwash plains. It generally is in areas along shallow, intermittent drainageways. Slopes generally are moderately short, but large areas on moraines are undulating. The profile of this soil is similar to the one described as representative of the series, though the surface layer is likely to contain a slightly larger amount of gravel. The RdB soils cover approximately 25.6 percent (i.e., 19.2 acres) of the 74.98-acre site.

RhB – Riverhead and Haven Soils, graded, 0 to 8 percent slopes – This soil consists of areas of Riverhead sandy loam, Haven loam, or both. The areas have been altered by grading operations for developmental purposes. Originally, the Riverhead and Haven soils each had the profile described as representative of its respective series, but grading operations have left a man-made profile that is significantly different. The RhB soils cover approximately 42.5 percent (i.e., 31.9 acres) of the 74.98-acre site.

Scio Series

The Scio series consists of deep, moderately well drained, medium-textured soils that formed in a mantle of very fine sandy loam, loam, or silt loam over coarse sand and gravel or compact glacial till. These soils are throughout the County on moraines and outwash plains. They are generally in low lying areas between poorly drained to somewhat poorly drained Raynham soils and better drained Haven soils. Slopes range from 0 to 6 percent, but are generally from 0 to 2 percent. Slopes are concave in many places.

In a representative profile, a thin layer of leaf litter and decomposed organic matter is on the surface in wooded areas. Below this mat is a surface layer of silt loam about 7 inches thick. It is very dark brown in the upper part and brown to dark brown at a depth of about 4 inches. The subsoil extends to a depth of about 28 inches. It is yellowish-brown, friable silt loam that is mottled below a depth of about 19 inches. The substratum, to a depth of about 38 inches, is firm, mottled, yellowish-brown silt loam. Below, to a depth of 61 inches, is firm, gray to light gray, fine, sandy loam till that has streaks and splotches of strong brown.

Scio soils have moderate to high available moisture capacity. In the till substratum phase, permeability is moderate in the surface layer and in the upper part of the subsoil and it is moderately slow in the lower part of the subsoil and in the substratum. In the sandy

substratum phase, permeability is moderate in the surface layer and in the subsoil and it is rapid in the substratum.

SdB – Scio Silt Loam, Sandy Substratum, 2 to 6 percent slopes – This soil is throughout the County on moraines and outwash plains. It is on gentle side slopes of depressions or in areas between well drained Haven soils and lower lying areas of somewhat poorly drained soils. Areas are generally small. Its profile is representative of the series. The SdB soils cover approximately 8.4 percent (i.e., 6.3 acres) of the 74.98-acre site.

Soil Limitations

Soil limitations[19] are shown in Table 4-1 below (page 4-4) and in Figure 4-1 on page 4-5. With the exception of CpE and Ra soils (which are not in the areas to be developed), there are only slight to moderate limitations.

Table 4-1: Soil Limitations

Soil	Sewage Disposal Fields	Homesites	Streets and Parking Lots	Lawns and Landscaping	Pipelines
CpE	Severe	Severe	Severe	Severe	Severe
HaB	Slight	Slight	Moderate	Slight	Moderate
Ra	Severe	Severe	Moderate	Moderate	Severe
RdA	Slight	Slight	Slight	Slight	Moderate
RdB	Slight	Slight	Moderate	Slight	Moderate
RhB	Slight	Slight	Moderate	Slight	Moderate
SdB	Moderate	Moderate	Moderate	Slight	Moderate

[19] United States Department of Agriculture (USDA) Natural Resources Conservation Service Soil Survey Manual - Chapter Six, accessed via https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ref/?cid=nrcs142p2_054256

Soil Map—Suffolk County, New York
(Gyrodyne Soil Map)

Figure 4-1: Existing Soil Conditions

Map Scale: 1:6,360 if printed on A portrait (8.5" x 11") sheet.

Meters: 0 50 100 200 300

Feet: 0 300 600 1200 1800

N

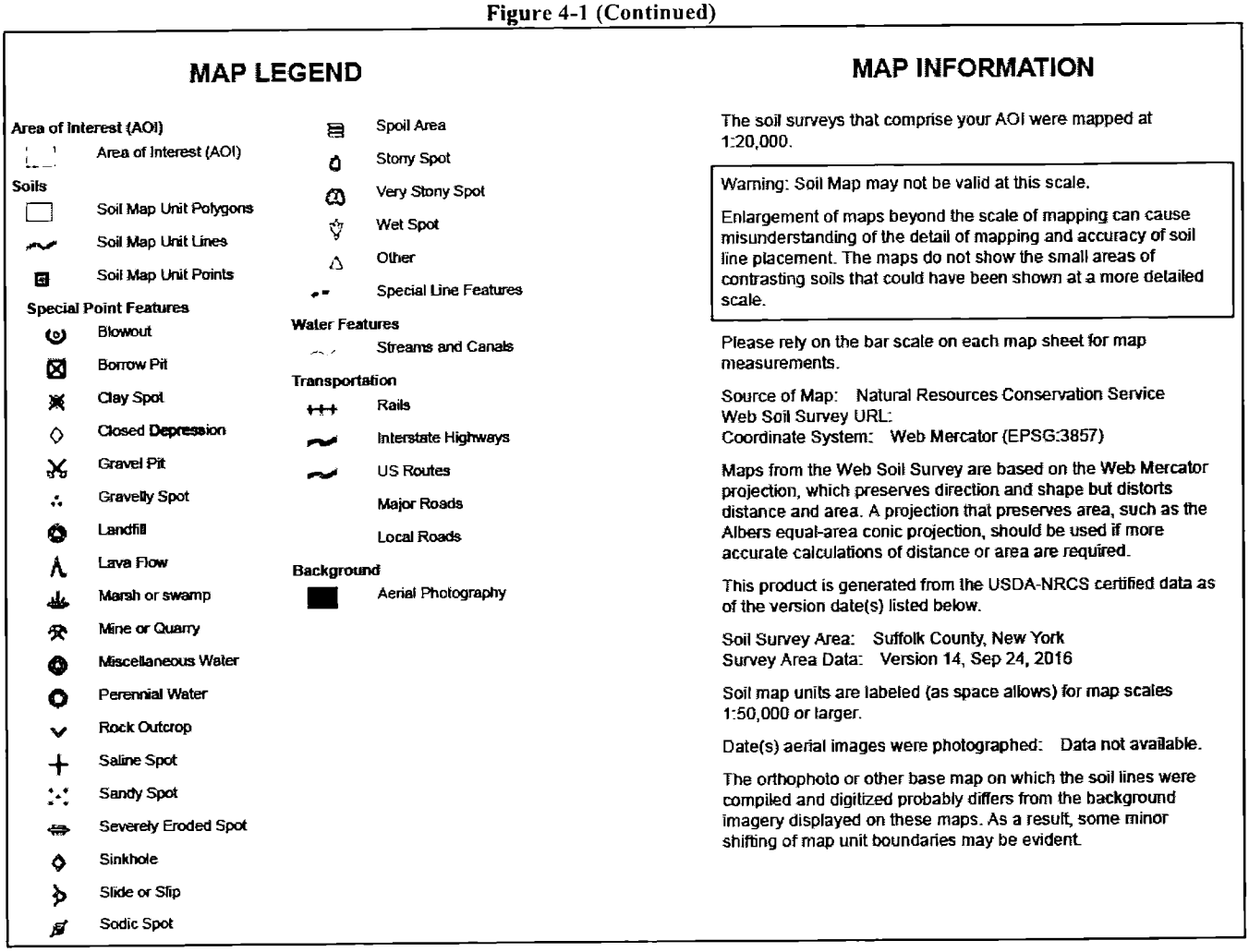
Map projection: Web Mercator Corner coordinates: WGS84

USDA Natural Resources Conservation Service

Web Soil Survey
National Cooperative Soil Survey

Note: USDA sourced the soil types and the street names on this map.

Figure 4-1 (Continued)



4.1.1. Past Agricultural Use

Since the property had been used for agricultural purposes, a Surface Soil Sampling Report was conducted by P.W. Grosser Consulting, Inc. (PWGC) in 2006 (see Appendix I page I-46), followed by Soil Management Plan in 2007 (see Appendix I page I-47). The purpose of these studies was to determine if there would be any special soil handling requirements associated with the proposed subdivision. In accordance with the Suffolk County Department of Health Services (SCDHS) guidance document *Standard Operating Procedures for Subdivisions, Developments, and Other Constructions Projects with Potentially Contaminated Soils* (Draft, February 2006), PWGC investigated the site to address the potential environmental concerns related to new development on this former agricultural site. The investigation included twenty-eight soil borings and forty-seven soil samples that were submitted to a NYS Department of Health-certified laboratory. All forty-seven samples underwent metals analysis and twenty-eight surface samples underwent polychlorinated pesticide analysis. In accordance with SCDHS guidelines, the sample results were compared to the United States Environmental Protection Agency (EPA) Soil Screening Levels (SSLs) with the exception of arsenic, which was compared to the County's Soil Screening Action Level (SSAL) of "6 parts per million" (ppm). This SSAL is based on the County's soil screening data for arsenic, which is a smaller, more restrictive threshold than other recommended clean-up objectives: the New York State Department of Environmental Conservation (NYSDEC) recommends "7.5 ppm" and the NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 Eastern U.S. background soil concentration range of 3 to 12 ppm.

No pesticides were found above the SSLs. Arsenic was found at concentrations above the 4 ppm SSAL in multiple samples collected at "0 to 2 inches below grade" and at "4 to 6 inches below grade." No other metals were found above the SSLs.

The arsenic concentrations found in all the samples were within the Eastern United States range (3 to 12 ppm). Arsenic was found in one sample deeper than six inches, and since the arsenic was primarily found in the surface soils above the SSAL, it was believed that the higher arsenic concentrations were related to past pesticide use.

In 2017, the Phase I ESA (see Appendix I page I-1) performed at the site (summarized below in Section 4.1.2) found that concentrations of metals and pesticides in surface soils at the site were generally below current NYSDEC Unrestricted Use Soil Cleanup Objectives. As the 2006 soil sampling data (see Appendix I page I-46) and 2007 soil sampling data (see Appendix I page I-47) illustrate that pesticides and metals in surface soils do not appear to significantly exceed current NYSDEC Unrestricted Use Soil Cleanup Objectives, PWGC does not consider the historical usage of the site for agricultural purposes to be a Recognized Environmental Condition (REC).

4.1.2. Past Industrial Use and Studies

This site has been studied multiple times between 1993 and 2017 – with remediation reports completed in 2018. The 2017 Phase I ESAs, Phase II ESAs and 2018 Remediation Reports are provided in Appendix I: Phase I-Phase II Environmental Site Assessments.

Of note, reports which pre-date November 2005 include the current subject property plus the parcel south of the LIRR tracks that was acquired by New York State for the University R&D Park.

- 1993 Phase I Environmental Site Assessment (ESA)
- 1997 Review of Environmentally Sensitive Land Report
- 2003 Phase I ESA (Executive Summary reviewed for this document)
- 2004 Phase II ESA (partial copy reviewed for this document)
- 2006 Surface Soil Sampling Report
- 2007 Soil Management Plan
- 2008 Industrial Area Sampling Report
- 2010 Phase I ESA
- 2011 Underground Injection Control (UIC) Structure Remediation Report
- 2013 Phase I ESA (Executive Summary reviewed for this document)
- 2017 Phase I ESAs
- 2017 Phase II ESAs
- 2018 Remediation Reports

In 2008, PWGC prepared an Industrial Sampling Report to document the findings of the soil sampling investigation (see Appendix I page I-48). The investigation was performed in accordance with the March 12, 2008 work plan which had been submitted to the Town of Smithtown.

Industrial Area Sampling Report (Appendix I p. I-48)

The 2008 scope of work consisted of sampling the primary leaching structures of the on-site sanitary systems associated with the active industrial buildings. Six surface soil samples were collected and analyzed for Volatile Organic Compounds (VOCs) and Semi-VOCs (SVOCs) to assess whether the soils surrounding the industrial area have been impacted by the site's industrial uses.

On-Site Sanitary Systems

PWGC sampled the primary leaching structures of the nine on-site sanitary systems. PWGC inspected each of the systems in order to determine which structure was the primary structure. In cases where multiple structures were in a primary configuration, PWGC chose the primary structure based upon piping heights.

PWGC utilized a stainless steel hand auger to collect a sediment sample from the base of each structure. At the site, PWGC observed an additional leaching structure at the southwest corner of Building 2, which had not been identified at the time the March 2008 work plan was prepared. The structure was sampled and identified as BLDG 2–SW. All samples were submitted to a New York State Department of Health certified laboratory and analyzed for VOCs, SVOCs, and Metals as per the Suffolk County Department of Health (SCDHS) SOP 9-95.

A summary of the findings by parameter are as follows:

- VOCs and SVOCs – Analytical results revealed levels of VOC and SVOC compounds in each of the samples, however, each of the detected compounds were well below their respective SCDHS action levels.

- Metals – Analytical results for metals revealed that five of the ten structures (systems 7, 8, 9, 10, and 12) contained elevated levels of metals. The elevated metals compounds include mercury, cadmium, chromium, copper, and silver.

Surface Soil Sampling

To determine if the current and former industrial uses of the property have impacted the surrounding surface soils, PWGC collected surface soil samples from six locations that were previously sampled for metals and pesticides. The six sampling locations were those which were located in the vicinity of the industrial area. A shallow soil sample (0-6" below grade) was collected at each location utilizing a decontaminated hand auger, and the samples were analyzed for VOCs and SVOCs, since metals and pesticides were already analyzed for these samples.

Analytical results of this sampling was compared to the NYSDEC-recommended Soil Cleanup Objectives (RSCOs) contained in TAGM Memo #4046. No VOCs were found in the six surface soil samples. No SVOCs were found in four of the six samples. The two other samples (SB-27 and SB-28) contained levels of SVOCs which exceeded their respective TAGM RSCOs for one or more compounds. Each of the elevated compounds was detected at concentrations which slightly exceeded their RSCO. Based upon the location of the sample locations near roadways and parking areas, the detected SVOC compounds are likely related to road runoff rather than the former/current industrial uses of the property.

2017 Phase I ESA (prepared by PW Grosser Consulting-PWGC) (Appendix I p. I-1)

The scope of the Phase I ESA included a visual inspection of the site and surrounding areas, interviews, a review of historical information and aerial photographs (including Sanborn fire insurance maps and a historical telephone directory), and a review of pertinent local, state, federal and facility records. The research identified reported listings for the site and off-site properties within the ASTM-designated radius. Databases included federal and state lists of known or suspected contaminated sites, lists of known handlers or generators of hazardous waste, lists of known waste disposal facilities, and lists of above-ground and underground storage tanks (ASTs and USTs).

For the Phase I, upon evaluating the findings associated with this property, PWGC identified seven RECs (Recognized Environmental Conditions), one HREC (Historical REC), and no CRECs (Controlled REC). Based on the identified RECs, PWGC recommended a Phase II ESA that was to include:

- A geophysical survey to identify potential USTs and/or confirm that potential historical USTs have been removed from the catering facility's main building and nearby house.
- Collection and analysis of soil samples from UST and/or former UST locations identified by the geophysical survey to confirm there was no petroleum release.
- Tightness testing and/or soil borings in the vicinity of the House B UST to evaluate whether leakage has occurred.
- Characterization sampling of the catering facility main building's sanitary systems and the industrial area's sanitary systems and storm drains.

The Phase I noted that with plans for an on-site STP, SCDHS will require the existing on-site sanitary systems to be properly closed (including sampling of on-site sanitary systems)

and all buildings to be connected to the STP. As the industrial area's sanitary systems were previously sampled and remediated, PWGC asked if SCDHS would delay additional sampling until the STP is completed. SCHDS provided an email response[20] on June 27, 2017 that the sanitary systems and storm drains should be included as part of a Phase II ESA, and that only structures determined to be impacted by the Phase II ESA may require re-sampling prior to abandonment when the STP is completed.

Previous environmental investigations at the site identified low-level metals in soils throughout former agricultural areas. Based on these findings, SCDHS required a Soil Management Plan to specify engineering controls and monitoring requirements for these soils during redevelopment. The metals concentrations detected prior to development of the Soil Management Plan are generally below NYSDEC Unrestricted Use Soil Cleanup Objectives. Additionally, SCDHS never formally adopted the guidance document on which the Soil Management Plan was based. In its June 29, 2017 email[20], SCDHS indicated that they no longer regulate soil management as part of subdivision approval, and that responsibility falls on local townships (i.e. the Town of Smithtown). It therefore appears the 2007 Soil Management Plan is no longer required.

Although ASTs appear to be in good condition with no evidence of leakage, the total number of ASTs observed does not appear to reconcile with the number of ASTs included on the SCDHS Petroleum Bulk Storage (PBS) registration. While this was not considered a REC, PWGC recommended an updated PBS registration submitted to SCDHS to properly update the County's records.

Next, though not part of the ASTM E1527-13 scope, PWGC stated that ACM (asbestos containing material) and/or lead-based paint (LBP) may be present due to the ages of the buildings on-site. Proper asbestos/lead surveys should be done prior to building demolition or renovation, and abatement should be done for any identified ACM and/or LBP.

2017 Phase II – Gyrodyne Industrial Area - prepared by PWGC (App. I page I-1040)

The scope of the Phase II followed the Phase I's recommended characterization sampling of the sanitary systems and storm drains on this lot.

Per SCDHS, characterization sampling included primary sanitary structures (e.g., septic tanks and primary cesspools), storm drains remediated in 2011, and additional storm drains identified by field screening. This included seventeen sanitary structure samples and four drywell samples collected per SCDHS. Other structures were paved over or had large concrete covers that prevented access (noting the inaccessible Building 1 structure was not impacted during the 2011 remediation event).

The four existing on-site buildings are serviced by nine separate sanitary systems:

Table 4-2: Lot 1 Sanitary Systems

Building	No. of sanitary systems	Sanitary System Components
1	Two	2 primary cesspools, 1 solid bottom septic tank, 5 secondary cesspools
2	One	1 septic tank, 1 primary cesspool, 1 secondary cesspool

[20] See Appendix I Phase I ESA's Appendix F for emails to and from Suffolk County Department of Health Services.

7	Five	3 septic tanks, 2 solid bottom septic tanks, 7 primary cesspools, 2 distribution boxes, 4 secondary cesspools, and 3 tertiary cesspools
8	One	1 septic tank, 1 solid bottom structure, and 1 primary cesspool

Drywell soil samples were field screened per two SCDHS criteria[21] based on elevated photo ionization detector (PID) readings and/or visual or olfactory evidence of impact. The laboratory analysis tested for VOCs (Volatile Organic Compounds), SVOCs (Semi-Volatile Organic Compounds), and Metals. Results were compared to the SCDHS Action Levels in SCDHS Article 12-SOP 9-95: Pumpout and Soil Cleanup Criteria (August 2010).

Sanitary Structure results: VOCs were detected at concentrations exceeding their respective SCDHS Action Levels in a total of 13 of 17 sanitary structures: primarily toluene, with additional petroleum compounds detected in many structures. There were no chlorinated VOCs (CVOCs) detected (e.g. tetrachloroethene (PCE) or trichloroethene (TCE)). One structure had an SVOC concentration exceeding the respective SCDHS Action Level. Four structures had metals (mercury, chromium, and silver) detected at concentrations exceeding their respective SCDHS Action Levels.

Drywell results: SVOCs were detected at concentrations exceeding their respective SCDHS Action Levels in 2 of 4 samples; the identified compounds are associated with typical parking lot runoff. VOCs and metals were not detected at action-level concentrations.

Recommendations: The fifteen structures with identified concentrations above SCDHS levels require remediation, in accordance with SCDHS SOP 9-95. This should include:

- Submission of the Phase II ESA to SCDHS review.
- SCDHS will issue a letter detailing their remedial requirements for the site. The Department may have additional requirements such as characterization sampling of additional cesspools and/or additional parking lot storm drains.
- Removal of impacted sediment from each impacted structure until clean endpoint samples can be obtained, after removing any liquids present.
- Once structures are remediated and acceptable endpoint samples are obtained, submit a Remediation Report to SCDHS for review; once SCDHS requirements are met, the Department will issue a No Further Action letter for the site.

2017 Phase II – Gyrodyne Catering Facility - prepared by PWGC (App. I page I-848)

The scope of the Phase II followed the Phase I recommendations: a geophysical survey to identify USTs (in-place or removed); collection and analysis of soil samples from UST locations to confirm no-occurrence of a petroleum release; soil borings near the House B UST to identify potential petroleum release; and characterization sampling of the catering facility's main building sanitary systems.

Geophysical survey: The geophysical survey comprised the exterior areas around the main building and three of the four accessory structures (a fourth structure's exterior area was inaccessible). Metal detector and ground penetrating radar (GPR) were used.

[21] The two SCDHS criteria for screening comprised structures with impact present during the 2011 remediation event (two drywells), or where evidence of impact was identified based on field screening (one drywell had elevated PID and petroleum sheen, one drywell had petroleum odor).

- The House B UST was marked out for soil borings to be installed safely around it.
- Two Main Building sanitary systems were connected to both kitchens.
- Two structures near one of the kitchens are connected directly from the building and to the vented cover in the grassy area. These structures do not appear to connect to other structures in the area. No septic tank or other pretreatment structure appears to be associated with these pools.
- GPR identified disturbed subsurface soils near the main building, indicating a potential former excavation area and a potential former UST. No anomalies were present.
- A buried drywell, connected to a storm water drain, was located on the east side of the main building.
- No metallic anomalies or potential USTs were identified in the surveyed areas.

Soil borings and Laboratory analysis: PWGC installed three borings in critical areas: two near House B's UST and one near the potential former excavation area near the main building. Soils were collected down to twenty-five feet below grade; no groundwater was encountered. Soils were field-screened with a PID for VOCs commonly associated with petroleum products. Recovered soils consisted primarily of light brown medium-grained silty sand with gravel and some clay. Elevated PID responses (above background) were not observed, and neither were visual or olfactory evidence of impact. Based on the lack of evidence of impact, a sample was taken from the deepest two-foot section of each boring (23-25 feet below grade) for laboratory analysis. The utilized laboratory is certified by the NYS Department of Health (NYSDOH) Environmental Laboratory Accreditation Program. Soil samples were analyzed for NYSDEC CP-51 List VOCs and SVOCs, specifically targeting compounds associated with petroleum (e.g., fuel oil) impact.

Sanitary system characterization: The main building has one on-site sanitary system connected to both kitchens. Six primary samples from kitchen grease traps, primary cesspools, and a primary septic tank, and two secondary samples were submitted for laboratory analysis. The samples were analyzed in accordance with SCDHS SOP 9-95 for VOCs, SVOCs, and metals.

Sanitary analysis results: Soil samples were compared to the Unrestricted Use SCOs (Soil Cleanup Objectives) in 6 NYCRR Part 375-6, Remedial Program Soil Cleanup Objectives (December 2006) and NYSDEC Commissioner's Policy (CP) 51, Soil Cleanup Guidance (October 2010). Three soil samples were analyzed for petroleum impact. VOCS and SVOCs were not detected at concentrations exceeding the SCOs.

Sanitary system samples were compared to the SCDHS Action Levels in SCDHS Article 12 - SOP 9-95, Pumpout and Soil Cleanup Criteria (August 2010). No higher-than-allowable SVOC concentrations were identified. One or more VOCs (toluene and 2-butanone, solvents found in commercial grade cleaners/degreasers) were detected at concentrations exceeding their SCDHS Action Levels in seven structures. Metals (silver and chromium) were detected at concentrations exceeding their SCDHS Action Levels in samples collected from two cesspools.

Recommendations: There were no metallic anomalies consistent with USTs identified in the potential UST area near House B, nor were there any identified petroleum impacts in soils near House B's UST or potential former excavation area. The Phase II recommends

remediating the on-site sanitary system for the main building in accordance with SCDHS SOP 9-95:

- Submit a copy of the Phase II ESA to SCDHS for review; SCDHS will issue a letter detailing their remedial requirements that would need to be followed (could include characterization sampling of overflow cesspools and/or parking lot storm drains).
- Remove impacted sediment from each impacted structure until clean endpoint samples can be obtained, after removing any liquids present.
- Submit a Remediation Report to SCDHS for review. Once their requirements are met, SCDHS will issue a No Further Action letter.
- It does not appear that the House B heating oil UST has impacted the site, so it appears that no further action is necessary regarding the USTs at the site.
- The area surrounding House C was inaccessible during the geophysical survey. During potential future redevelopment of the site, USTs discovered in this area should be properly managed in accordance with SCDHS and NYSDEC regulations.

2018 Remediation Report – Gyrodyne Industrial Area prepared by PWGC (Appendix I page I-1401)

Remediation Activities

PWGC implemented a remediation program for UIC structures at the property located at 1 Flowerfield (Industrial Area), St. James, New York. The scope of work was based upon PWGC's Phase II ESA (See Appendix I page I-1040) for the site and the requirements of SCDHS for the subject site, and consisted of:

- Remediation of on-site sanitary structures 7ST, 9ST, 9ST1, 9SLPC, 9PLP, 10ST, 12ST, 12PLP, 12PLP1 (MH-1), 13ST, 13PLP, 11ST, 11SLP, AND 14ST.
- Remediation of storm drains SD13 and SD17.
- Permanent disconnection of interior sink effluent sources from storm drains SD10, SD15 and SD18.

The scope of work for remediation consisted of the removal of liquids and sediment from seven septic tanks, six cesspools, and two storm drains containing impact exceeding SCDHS Action Levels. Remedial activities were performed by Clearbrook of Deer Park, New York under the oversight of PWGC personnel. An estimated total of 95.43 tons of non-hazardous soils were generated during remediation. Non-hazardous soils were disposed of at Clearbrook of Deer Park New York. An estimated total of 23,000 gallons of non-hazardous liquids were generated during remediation. Liquids were disposed of at Clear Flo Technologies, Inc. of North Lindenhurst, New York.

In addition, as directed by SCDHS, sinks within Building 2 and Building 8 discharging to exterior storm drains in violation of the Suffolk County Sanitary Code, have been permanently disconnected.

Endpoint Sample Data

Confirmatory endpoint soil samples were collected from the base of structures 9PLP, 9SLPC, 12PLP1 (MH-1), 12PLP, 13ST, 13PLP, 11SLP, SD13, AND SD17 to document the effectiveness of the cleanout. As septic tank 7ST, 9ST, 10ST, 12ST, 11ST, and 14ST are solid bottom (non-leaching) structures, no endpoint sample was necessary. Endpoint

sample analysis was targeted based upon which compounds exceeded SCDHS Action Levels in each structure. Contaminant concentrations in the endpoint soil samples collected from these structures were below SCDHS Cleanup Objectives.

Based on endpoint sample results, it appears that the remedial effort was successful, and PWGC recommends that a No Further Action letter be issued for the site.

2018 Remediation Report – Gyrodyne Catering Facility prepared by PWGC (Appendix I page I-1303)

Remediation Activities

PWGC implemented a remediation program for UIC structures at the property located at 1 Flowerfield (Catering Facility), St. James, New York. The scope of work was based upon PWGC's Phase II ESA (See Appendix I page I-848) for the site and the requirements of SCDHS for the subject site, and consisted of:

- Remediation of on-site sanitary structures GT001, GT002, ST001, ST002, ST003, CP001, CP002, CP003, CP004, CP010, and CP011.

Remediation included the removal of liquids and sediment from two grease traps, five septic tanks, and two cesspools containing impact exceeding SCDHS Action Levels. Remedial activities were performed by Clearbrook of Deer Park, New York under the oversight of PWGC personnel. An estimated total of 37.1 tons of non-hazardous soils were generated during remediation. Non-hazardous soils were disposed of at Clearbrook of Deer Park New York. An estimated total of 30,000 gallons of non-hazardous liquids were generated during remediation. Liquids were disposed of at Clear Flo Technologies, Inc. of North Lindenhurst, New York.

Endpoint Sample Data

Confirmatory endpoint soil samples were collected from the base of structures CP010, CP011, and CP003 (aka ST004) to document the effectiveness of the cleanout. As structures GT001, GT002, ST001, ST002, ST003, and CP001 are solid bottom (non-leaching) structures, no endpoint sample was necessary. Endpoint sample analysis was targeted based upon which compounds exceeded SCDHS Action Levels in each structure. Contaminant concentrations in the endpoint soil samples collected from these structures were below SCDHS Cleanup Objectives.

Based on endpoint sample results, it appears that the remedial effort was successful, and PWGC recommends that a No Further Action letter be issued for the site.

4.2. Potential Impacts of Proposed Subdivision

The proposed Map of Flowerfield Preliminary Subdivision would result in approximately a cut quantity of 37,897 cubic yards and a fill quantity 773 cubic yards, for a net total cut of 37,124 cubic yards (see Appendix M Sheet M-2). Additional information regarding the quantity and potential impacts of soil export is provided in Sections 2.13 and 9.2.

All developed portions of the site will first be subject to grading operations (to provide an acceptable surface on which development can take place), followed by installation of landscaping (to provide a means of stabilizing the soil to prevent erosion as soon as practicable following grading). Construction operations are not anticipated to result in significant adverse impacts to soils, and the presence of soils with limitations on

development is not anticipated to impede the intended uses of the site.

4.3. Proposed Mitigation

Development associated with the proposed subdivision (internal site roads, STP) would exceed one-acre in size, and would therefore require a Storm Water Pollution Prevention Plan (SWPPP) as part of the Town approval process. The SWPPP will include Erosion and Sediment Control plans that will specify the types, locations, and maintenance of any erosion control measures. Additionally, the SWPPP will require ongoing, Town-supervised SWPPP inspections for the duration of all construction activity. This will ensure that the erosion controls noted on the engineering documents will be carried out as planned.

Careful attention would be paid to soil conservation and erosion control techniques during grading activities. Final site design would also incorporate methods to control erosion and sedimentation and limit transport of sediment to offsite areas. Guidance would be taken from the Best Management Practices (BMPs) recommended in the latest New York Guidelines for Urban Erosion and Sediment Control[22] as well as the NYSDEC's Urban Stormwater Runoff Management Practices Catalogue.[23]

An extensive erosion control plan would reduce runoff during construction. A controlled sequence of measures would ensure that runoff and sediment receiving areas are prepared in advance of major site disturbances. An erosion-control seed mixture would be used containing 50% annual ryegrass and 50% perennial ryegrass for quick and effective stabilization of the soils. A series of hay bales and silt fences would be placed to capture coarse and fine sediment.

Silt fences would also be installed to prevent material from washing away. Earth stockpiled for longer than fifteen (15) days would be stabilized by either seeding it with the erosion control seed mixture referred to above or mulching it with hay.

Maintenance of the erosion control measures would include removal of accumulated sediment and trash from all control structures and the basin, repair or replacement of damaged swales, diversions, silt fencing, hay bales, and reseeding where necessary. The construction entrance would be stabilized with crushed stone to prevent soil and debris from being carried onto roads. Construction-related erosion control measures would be removed during final landscaping.

[22] *New York Guidelines for Urban Erosion and Sediment Control*, USDA, Natural Resources Conservation Service, Printed by the Empire State Chapter, Soil and Water Conservation Society, Fourth Printing, April 1997

[23] *Urban Stormwater Runoff Management Practices Catalogue for Nonpoint Source Pollution Prevention and Water Quality Protection in New York State*. NYS Department of Environmental Conservation, 1996.

5. Topography

5.1. Existing Conditions

A Topographic Survey was conducted to identify areas of steep slopes and other natural areas to be preserved. Elevations on the site range from a low of ±118 feet above mean sea level at the far northeast corner of the property to a high of ±172 feet above mean sea level in the southeasterly portion of the property.

The property has undulating topography throughout, with individual berms at or above 160 feet elevation, and lower depressions generally below 148 feet elevation (particularly around the existing on-site ponds).

Along NYS Route 25A, the site generally slopes up as one travels east from Mills Pond Road, up to approximately ¾ of the way along the frontage. Near the northwest corner (at Mills Pond Road) the elevation is approximately 138 feet, which increases up to 154 feet at the ¾ point, then decreases to ±118 feet at the far northeast corner.

Along Mills Pond Road, the slopes are fairly gentle, with increasing elevation as one travels south from Route 25A. Closer to Route 25A, if one looks due east towards Gyrodyne from Mills Pond Road, grades are fairly level. Further south, if one looks due east into the property from Mills Pond Road (towards the industrial buildings), slopes are generally steeper and increasing from west to east.

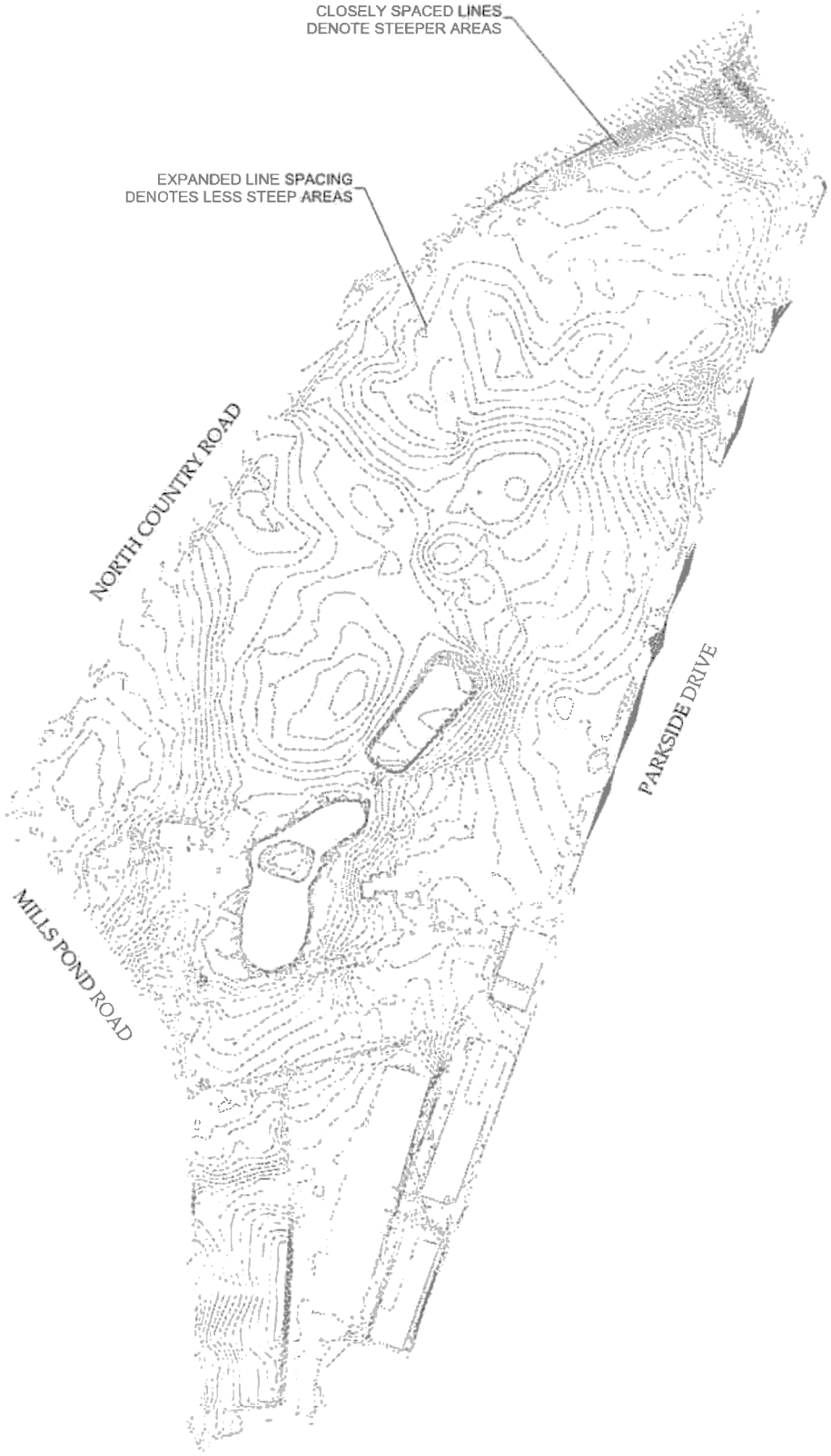
As one moves south from Route 25A, the property generally slopes up as well. The general elevation gets higher as one goes south towards the LIRR tracks.

The majority of the site is between 140 and 160 feet, and as shown in the slope analysis provided in Table 5-1, most of the property (nearly 93%) has a slope below ten percent. Steep slopes over 25% comprise less than three percent of the site, and are generally located in the northeast corner near the easterly (often gated) curb cut.

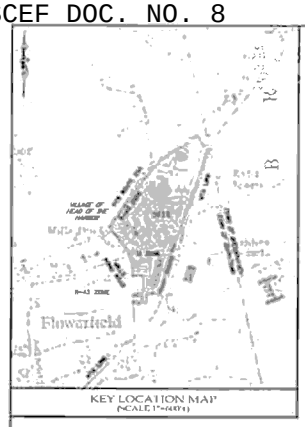
Table 5-1: Slope Analysis

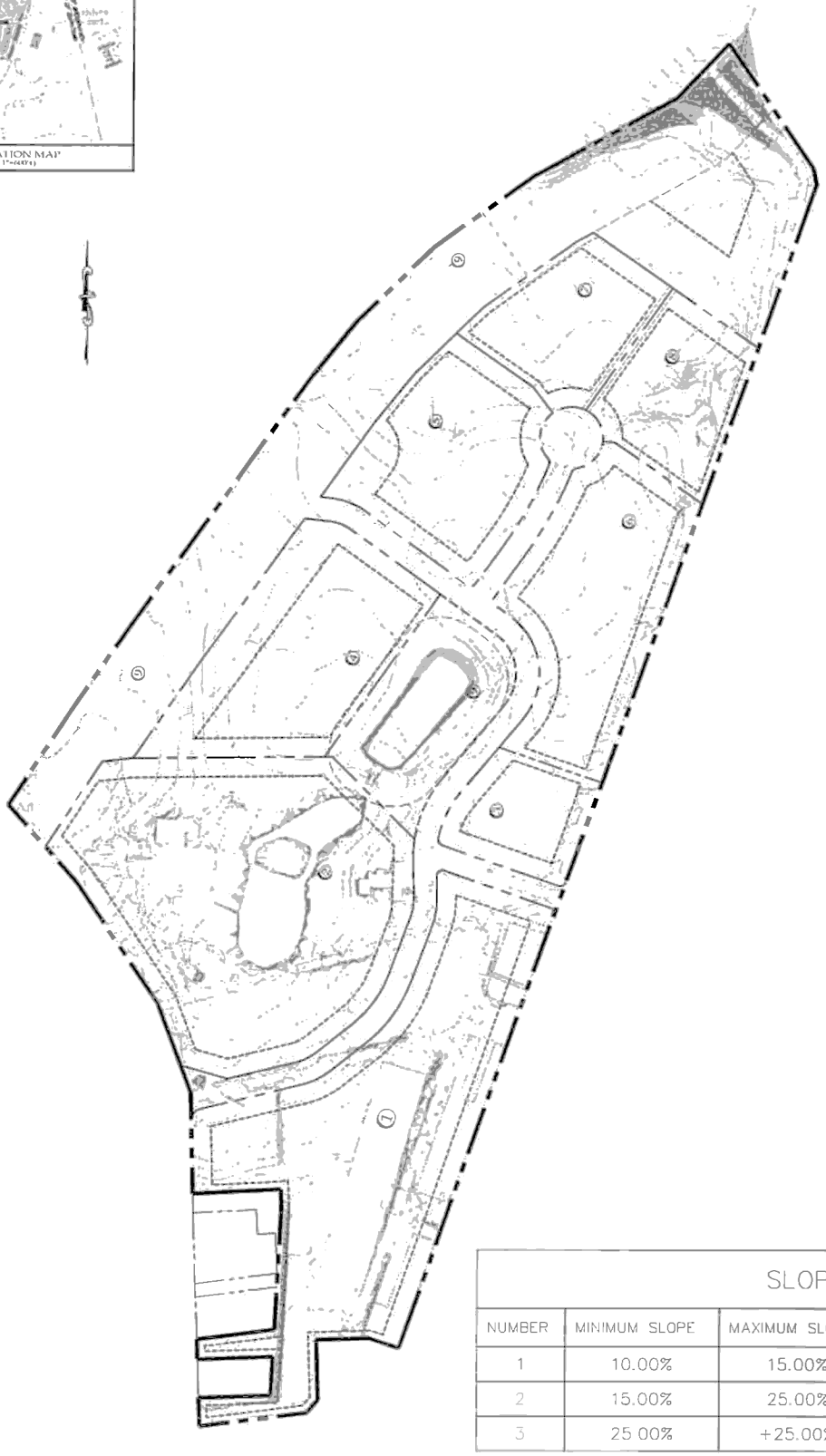
Slope Category	Area (SF)	Percent of Site
10 – 15%	±96,895	3.0%
15 – 25%	±90,097	1.8%
>25%	±85,893	2.6%

Figure 5-1 on the next page presents the existing two-foot contour lines (closer line spacing indicates steeper slopes). Figure 5-2 follows with a visual slope analysis.



Existing Topography Contours
Figure No. 5-1





SLOPES TABLE					
NUMBER	MINIMUM SLOPE	MAXIMUM SLOPE	AREA (SF)	COLOR	PERCENTAGE OF SITE
1	10.00%	15.00%	±96,895		3.0%
2	15.00%	25.00%	±90,097		1.8%
3	25.00%	+25.00%	±85,893		2.6%

Slope Analysis
Figure No. 5-2

5.2. Potential Impacts of Proposed Subdivision

The existing topography would be graded and shaped to create the building areas, landscaped areas, interior roads and sidewalks, and drainage features (basins and roadside drainage swales). The planned subdivision would be laid out to work with the existing topography as much as practical, such as placing new buildings on the flatter portions of the property, and maintaining the steeper areas.

A majority of the property would be subjected to cut and fill earthwork, and the goal will be to balance cut and fill to minimize the removal of material off the property. With this in mind, most of the excavation will be associated with grading activities to accommodate new buildings, parking lots, and site improvements (e.g. landscaping and utilities). The larger excavation components include the drainage reserve areas (DRAs) that will provide natural, passive stormwater storage and leaching, plus the excavation required to build the new subdivision roads on top of "cut" areas so the underlying base material can structurally support new pavement and vehicular traffic.

The Preliminary Engineering Plans (Appendix M) indicate the planned changes to the existing topography. The Proposed Action would result in approximately a cut quantity of 37,897 cubic yards and a fill quantity 773 cubic yards, for a net total cut of 37,124 cubic yards (see Appendix M, Sheet M-2)

5.3. Proposed Mitigation

The proposed Grading and Drainage Plans on Sheets C-2 through C-4 (see (see pages M-3 through M-5 in Appendix M) prepared as part of the Subdivision application provide additional details of overall site grading, and will require Town Planning Division and Engineering Division reviews and Town Board approval. Additionally, Grading and Drainage Plans will be required on individual lots as each lot is developed, subject to the same extent of municipal review and approval. Typical thresholds will be maintained, such as grading slopes at 1:3 or less.

The clearing and grading process for the proposed subdivision is expected to take approximately 8-12 months. With the property being nearly 75 acres, and with the planned extensive setbacks from Route 25A, nearly all grading activity can be fully contained within the property. There will be some grading activity associated with the proposed Route 25A driveway, though this is in a flatter area of the property.

Additionally, erosion control measures would be taken to protect the site during construction. The subdivision will be subject to a Stormwater Pollution Prevention Plan (SWPPP) to control erosion and minimize the transfer of site debris onto local roads. Erosion and Sediment Control elements are expected to include silt fences, a gravel or crushed-stone stabilized construction entrance/exit with a wash-down area, and storm drain inlet protection. Vegetative measures are expected to include mulching, topsoil-and-seeding, and/or topsoil-and-sod to prevent erosion. Additionally, for one or more lots at a time (depending how the property is eventually developed) a specific construction sequence would be established to minimize erosion potential. The final grade surface, once established, would be stable, non-erosive, and fully vegetated where appropriate.

6. Vegetation and Wildlife

Numerous ecological surveys have been conducted on different portions of the 74.98-acre Flowerfield site. The ecological conditions, apart from Lot 2 (the Flowerfield Celebrations catering hall lot), were thoroughly assessed by Dr. Orland J. Blanchard, Jr. and Thomas W. Cramer, ASLA in 2006 and 2008, respectively, as described in the 2008 proposed Draft Environmental Impact Statement (DEIS) prepared for the Gyrodyne Redevelopment (Cameron Engineering, 2008). This area of the Flowerfield site was revisited in May 2017 by Dr. William P. Bowman to verify and update the ecological findings of the 2008 report, and to add Lot 2 (the Flowerfield catering parcel) to the ecological conditions assessment.

The complete Ecology Chapter of the 2008 proposed DEIS report is provided in Appendix E: Ecology Analysis.

Plant and wildlife lists for the Flowerfield property were prepared based on the 2008 proposed DEIS and on the additional species observed during the 2017 survey. A total of 196 vascular plant species were observed or expected at the site, including 92 woody plants, 102 herbaceous plants, and two ferns (see Table 6-2 on page 6-14). Additionally, the following animals were observed or expected at the site: 80 birds, 19 mammals, nine herpetiles, 25 butterflies, and two dragonflies (see Table 6-3 starting on page 6-21 and see Table 6-4 starting on page 6-23).

6.1. Ecological Communities

The existing ecological communities are the result of multiple periods of land uses and variable patterns of redevelopment and maintenance throughout the 20th century. As early as 1930, this site was entirely cleared and consisted of agricultural fields as shown on aerial imagery from Suffolk County[24].

Aerial imagery from 1947 similarly shows agricultural fields, various residential and agricultural buildings, and a Long Island Rail Road (LIRR) station present on the property. The 1950s through the 1970s brought intensification of light industry and commercial uses, construction of the catering facility, and enlargement of a small farm pond to create the two larger man-made ponds observed today. The existing ecological communities at the site include mowed fields; commercial and light industrial buildings and associated parking areas and roads; rows of large planted trees; landscaped areas, plantings, and turf grass; man-made ponds, and early successional habitats (such as successional old fields, overgrown hedgerows, and successional southern hardwoods) in areas that are no longer or infrequently maintained.

The ecological communities present at the subject property were described and quantified in the 2008 proposed DEIS (Cameron Engineering, 2008). The boundaries of the ecological communities were re-mapped based on 2017 conditions (see Figure 6-1 on page

[24] Accessed via www.suffolkcountyny.gov/Portals/0/planning/Cartography/1930/sc19304f2WEB.pdf

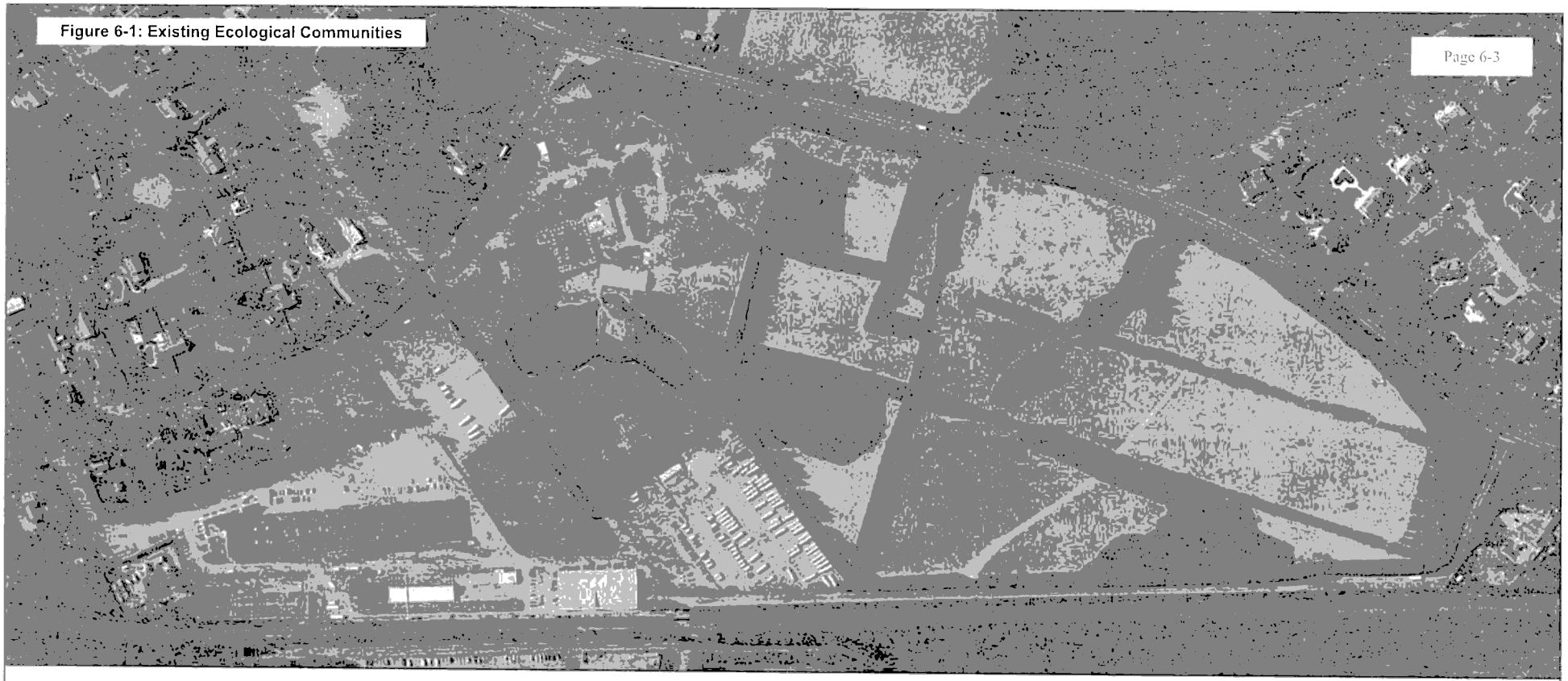
6-3). However, the location and extent of these ecological community types has not changed significantly since 2006 or 2008. The minor changes in the distribution and abundance of the various ecological community types has apparently resulted from changes in the maintenance (i.e. mowing) frequency in portions of the property leading to the conversion of some mowed lawn areas to successional old fields or successional southern hardwood forests. Eight ecological community types were observed including:

1) Mowed Lawn
2) Mowed Lawn with Trees
3) Successional Old Field
4) Overgrown Hedgerows
5) Successional Southern Hardwoods
6) Farm Pond/Artificial Pond
7) Hard Surfaces
8) Orchard

The descriptions of these ecological community types (provided in the 2008 proposed DEIS) have been maintained, and they are presented below (with minor modifications) along with the community descriptions provided by the New York Natural Heritage Program in Edinger et al (2002). Updated calculations of the acreage of each ecological community type and the percentage of the total site area are provided in Table 6-1 on page 6-4. Five of these ecological communities (mowed lawn, mowed lawn with trees, orchard, farm pond/artificial pond, and hard surfaces), accounting for 74.32% of the site, are classified as "cultural" ecological communities by the New York Natural Heritage Program and defined in Edinger et al (2002). These communities are created and maintained by human activities, or they are modified by human influence to such a degree that the physical conformation of the substrate, or the biological composition of the resident community, is substantially different from the character of the substrate or community as it existed prior to human influence.

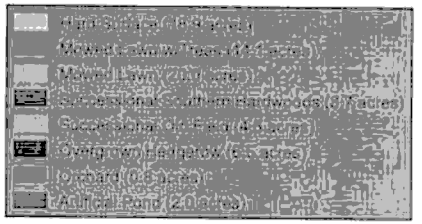
Hard Surfaces include buildings, parking lots, roads, and walkways around the commercial/light industrial development. No portion of the site is considered wholly natural and undisturbed; even the vegetated portions reflect direct impacts from human activities. Table 6-1 on page 6-4 provides a breakdown of the quantities and percentages for each of the various habitats. Figure 6-1 on the next page illustrates the approximate locations of the habitats. The locations and areas are based on field inspections and aerial photograph interpretation.

Figure 6-1: Existing Ecological Communities



NOTES:

1. Ecological Communiy Boundaries based on field inspections performed by Land Use Ecological Services, Inc.in May 2017, and based on 2016 orthoimages from NYS GIS Clearinghouse.
2. Ecological Community Category Classifications from Proposed Draft Environmental Impact Statement for Gyrodyne Redevelopment Application (Cameron Engineering, 2008).



1 in = 250 ft

Land Use

Prepared By: Land Use Ecological Services, Inc. 570 Expressway Drive South, Suite 2F Medford, NY 11763		Project: Gyrodyne and Flowerfield Properties - Ecological Communities For: Cameron Engineering At: Mills Pond Road, St. James, NY SCTM #800-40-2-4,13.3,13.4,14,15,16	
Date: 5/30/2017	Revised:	Scale: As Noted	Sheet: Figure 1

Table 6-1: Ecological Communities

Ecological Community Type	Acres	Percent
Hard Surfaces (Parking Areas, Roads, and	18.87	25.17%
Mowed Lawn with Trees	14.03	18.71%
Mowed Lawn	19.97	26.63%
Successional Southern Hardwoods	8.29	11.06%
Successional Old Field	4.51	6.01%
Overgrown Hedgerows	6.45	8.60%
Orchard	0.84	1.12%
Artificial Pond	2.02	2.69%
Totals	74.98	100%

Mowed Lawn

An ecological community that is currently being maintained by human activity on-site is classified as the "Mowed Lawn." This habitat is the largest habitat on the site and occupies approximately 19.97 acres or 26.63% of the property. The following is the definition of this community as described by Edinger et al (2002):

> **"Mowed lawn:** residential, recreational, or commercial land, or unpaved airport runways in which the groundcover is dominated by clipped grasses and there is less than 30% cover of trees. Ornamental and/or native shrubs may be present, usually with less than 50% cover. The groundcover is maintained by mowing. "Characteristic birds include American robin (*Turdus migratorius*), upland sandpiper (*Bartramia longicauda*), and killdeer (*Charadrius vociferus*)."

The above quote from Edinger et al (2002) indicates that the upland sandpiper (*Bartramia longicauda*) is a characteristic species of mowed lawn communities; however, the probability that this species will occur at this particular location is low. Specifically, upland sandpiper prefer areas with high acreage of agricultural crops or prairie grasslands; in New York State this species favors habitat with field sizes greater than 30 hectares, or approximately 74 acres (NYNHP 2019). As the site does not contain the preferred large agricultural or native grassland habitat of this species, it is unlikely that upland sandpiper will occur at the project site. Accordingly, the upland sandpiper has been omitted from Table 6-3.

This main ecological community type is to be found in the northern half of the site in hedgerow-bordered fields, but smaller examples are present east and north of the main commercial/industrial buildings and around the edges of these buildings themselves and the edges of their parking lots.

The lawns are, by definition, regularly mowed and so the grasses themselves are not easily identified but occasional weedy non-grass herbaceous species can be discerned, including Red Clover (*Trifolium pratense*), English Plantain (*Plantago lanceolata*), Sheep Sorrel (*Rumex acetosella*), Mouse-ear Chickweed (*Cerastium vulgatum*), Common Chickweed

(*Stellaria media*), Dandelion (*Taraxacum officinale*), Field Garlic (*Allium vineale*), Wintercress (*Barbarea vulgaris*), Gill-Over-the-Ground (*Glechoma hederacea*), Cat's Ear (*Hypochoeris radicata*), and Evening Primrose (*Oenothera* sp.).

Where mowers do not regularly reach, such as areas close to the hedgerows, additional species escape the blade enough to be recognizable. These include some woody perennials. Examples of herbs are Garlic Mustard (*Alliaria petiolata*), Mugwort (*Artemisia vulgaris*), Avens (*Geum* sp.), Asters (*Aster* spp.), Goldenrods (*Solidago* spp.), Wild lettuce (*Lactuca canadensis*), Heal-all (*Prunella vulgaris*), Moth Mullein (*Verbascum blattaria*) and Common St. John's Wort (*Hypericum perforatum*). Woody species include Japanese Honeysuckle (*Lonicera japonica*), Multiflora Rose (*Rosa multiflora*), Wineberry (*Rubus phoenicolasius*) and Privet (*Ligustrum* sp.).

Mowed Lawn With Trees

This ecological community borders the industrial buildings and parking lots and is found in linear plantings within the mowed lawns. This cover type occupies approximately 14.03 acres or 18.71% of the property. The following is the definition of this community as described by Edinger et al (2002):

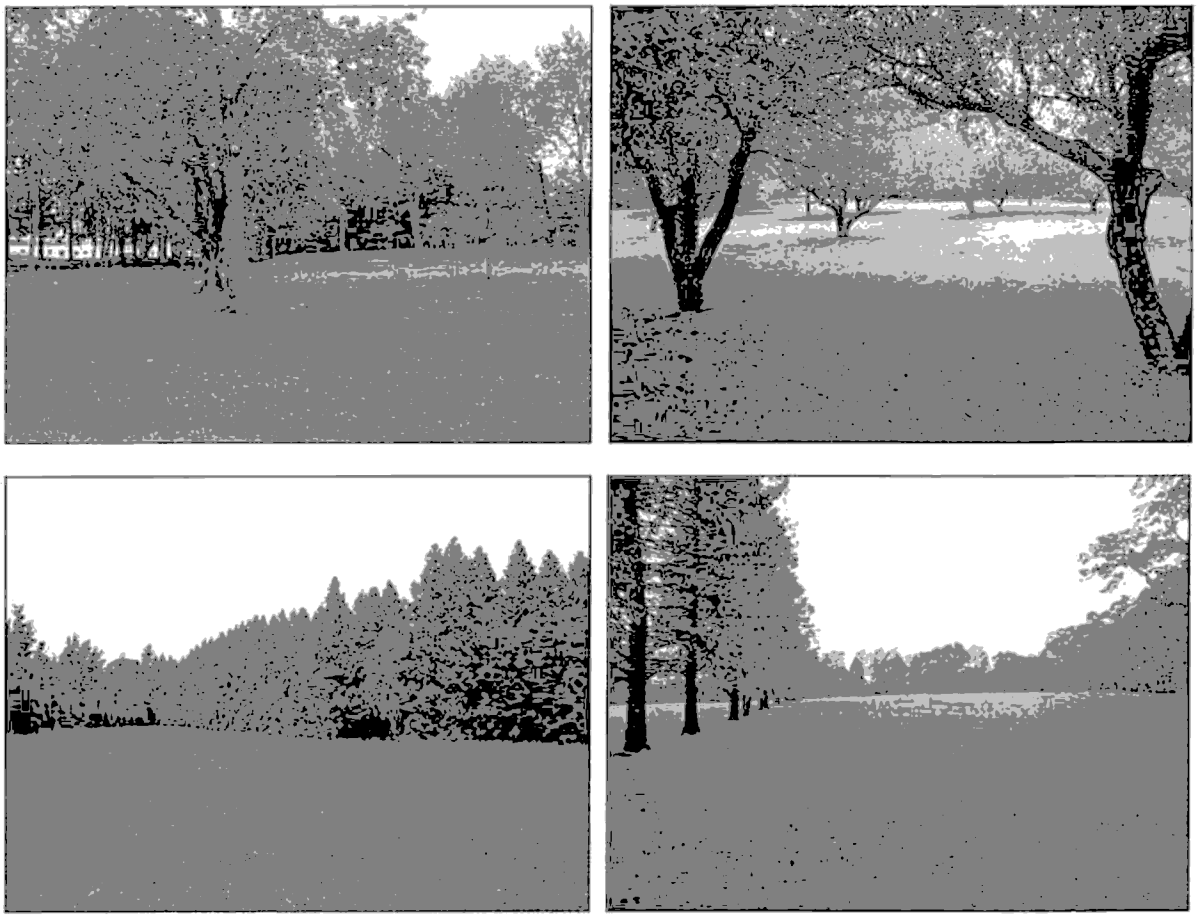
> "Mowed lawn with trees: residential, recreational, or commercial land in which the groundcover is dominated by clipped grasses and forbs, and it is shaded by at least 30% cover of trees. Ornamental and/or native shrubs may be present, usually with less than 50% cover. The groundcover is maintained by mowing. "Characteristic animals include gray squirrel (*Sciurus carolinensis*), American robin (*Turdus migratorius*), mourning dove (*Zenaida macroura*), and mockingbird (*Mimus polyglottos*).

The tree species found within this community include Oaks (*Quercus spp.),* Black Locust (*Robinia pseudoacacia*), Cherries (*Prunus spp.*) and Hickories (*Carya spp.*), as well as Apples (*Malus spp.*). For the most part, this community is found in linear plantings within the Mowed Lawn communities and in larger blocks adjacent to the industrial and catering uses. There are also some small areas of this community within the industrial area.

As with the Mowed Lawn described above, these areas are regularly mowed, and so the grasses themselves are not easily identified, but occasional weedy non-grass herbaceous species can be discerned, including Red Clover (*Trifolium pratense*), English Plantain (*Plantago lanceolata*), Sheep Sorrel (*Rumex acetosella*), Mouse-ear Chickweed (*Cerastium vulgatum*), Common Chickweed (*Stellaria media*), Dandelion (*Taraxacum officinale*), Field Garlic (*Allium vineale*), Wintercress (*Barbarea vulgaris*), Gill-Over-the-Ground (*Glechoma hederacea*), Cat's Ear (*Hypochoeris radicata*), and Evening Primrose (*Oenothera* sp.).

Figure 6-2 on page 6-6 presents four representative photographs of Mowed Lawn and Mowed Lawns with Trees on the site.

Figure 6-2: Representative Photographs of Mowed Lawn and Mowed Lawns with Trees



Orchard

A small (0.84-acre) area adjacent to the Flowerfield catering facility contains an old orchard with a ground cover of turf grass that is presently being mowed. The following is the definition of this community as described by Edinger et al (2002):

> **"Orchard:** a stand of cultivated fruit trees (such as apples, cherries, peaches, pears, etc.), often with grasses as a groundcover. An orchard may be currently under cultivation or recently abandoned. Staghorn sumac (*Rhus typhina*), goldenrods (*Solidago* spp.), and poison ivy (*Toxicodendron radicans*) may be common in abandoned orchards. "Characteristic birds include American robin (*Turdus migratorius*), eastern kingbird (*Tyrannus tyrannus*), mourning dove (*Zenaida macroura*), and in mature orchards with a minimum dbh [diameter at breast height] of 10 inches… yellow-bellied sapsucker (*Sphyrapicus varius*)."

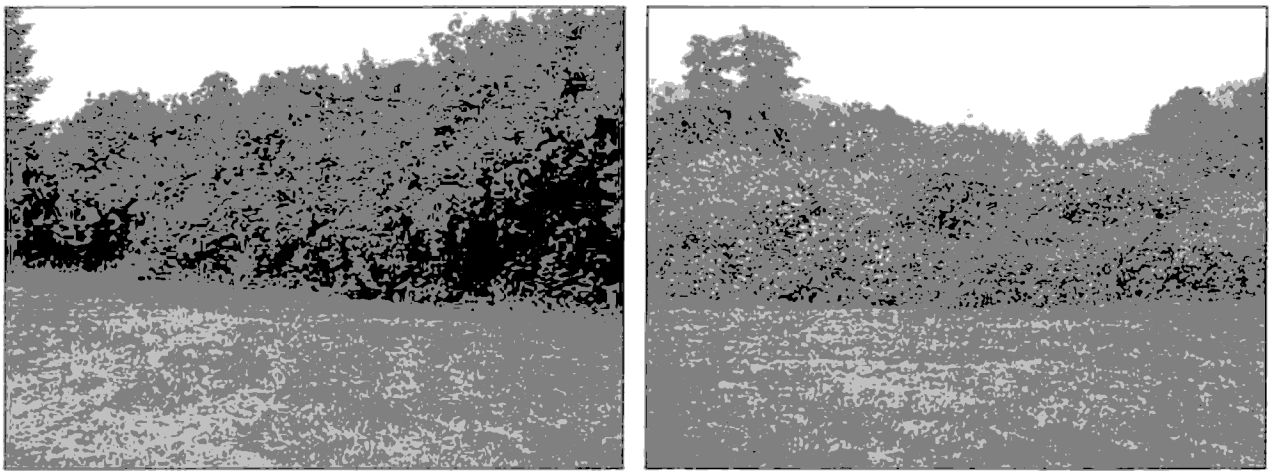
Overgrown Hedgerows

Many of the mowed lawn areas (and the eastern man-made pond) are bordered by narrow, planted single-species hedgerows comprised largely of evergreen species such as Douglas

Fir (*Pseudotsuga menziesii*), Hemlock (*Tsuga canadensis*), Norway Spruce (*Picea abies*), Red Cedar (*Juniperus virginiana*) and Arborvitae (*Thuja occidentalis*). There are also Privets (*Ligustrum spp.*) forming tall hedges in the similar linear configurations. Many of these linear plantings have growing within them other woody species including Japanese Honeysuckle (*Lonicera japonica*), Multiflora Rose (*Rosa multiflora*), Wineberry (*Rubus phoenicolasius*), Asiatic Bittersweet *(Celastrus orbiculata)* and Wild Grape (*Vitis spp.*). As noted above, some of these hedgerows are "monoculture", or contain a single ornamental plant species, while others contain numerous invasive woody species that have colonized into the single-species plantings.

Edinger et al (2002) does not provide a description of an ecological community that would closely match these habitats. Figure 6-3 presents representative photographs of this community as found on-site.

Figure 6-3: Representative Photographs of Overgrown Hedgerows



Successional Old Field

Successional old fields represent 4.51 acres, or 6.01% of the subject property. The following is the definition of this community as described by Edinger et al (2002):

> **"Successional old field:** a meadow dominated by forbs and grasses that occurs on sites that have been cleared and plowed (for farming or development), and then abandoned." Characteristic herbs include goldenrods (*Solidago altissima, S. nemoralis, S. rugosa, S. juncea, S. canadensis,* and *Euthamia graminifolia*), bluegrasses (*Poa pratensis, P. compressa*), timothy (*Phleum pratense*), Quack Grass (*Elyttigia repens*), smooth brome (*Bromus inermis*), sweet vernal grass (*Anthoxanthum odoratum*), orchard grass (*Dactylis glomerata*), common chickweed (*Cerastium arvense*), common evening primrose (*Oenothera biennis*), oldfield cinquefoil (*Potentilla simplex*), calico aster (*Aster lateriflorus*), New England aster (*Aster novae-angliae*), wild strawberry (*Fragaria virginiana*), Queen-Anne's lace (*Daucus corota*), ragweed (*Ambrosia artemisiifolia*), hawkweeds (*Hieracium* spp.),

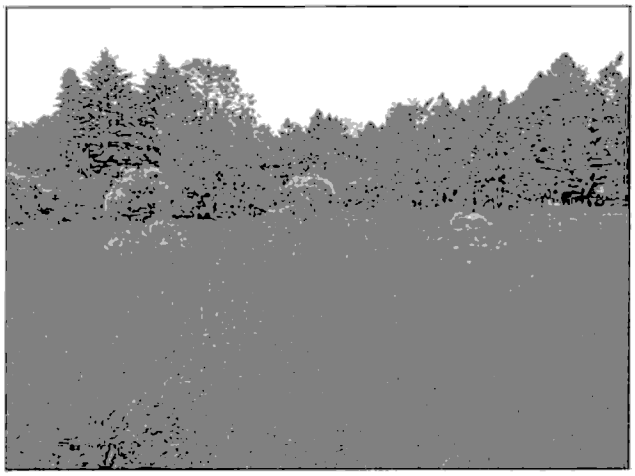
> dandelion (*Taraxacum officinale*), and ox-tongue (*Picris hieracioides*). Shrubs may be present, but collectively they have less than 50% cover in the community. "Characteristic shrubs include gray dogwood (*Cornus foemina* ssp. *racemosa*), silky dogwood (*Cornus amomum*), arrowwood (*Viburnum recognitum*), raspberries (*Rubus* spp.), sumac (*Rhus typhina, R. glabra*), and eastern red cedar (*Juniperus virginiana*). A characteristic bird is the field sparrow (*Spizella pusilla*). This is a relatively short-lived community that succeeds to a shrubland, woodland, or forest community."

Edinger et al (2002) indicate that this ecological community is distributed throughout New York State with a rarity ranking of G4 and S4 indicating that these communities are considered "apparently secure" both globally and in New York State.

The largest area of successional old field found on the site is in the north-central portion of the site. As noted in the Edinger et al (2002) definition, this community typically results from the recent abandonment of cleared areas. This particular area was cleared and then apparently established in nursery stock or lawn. These two prior uses have resulted in vegetation types that differ somewhat, but are both in fairly early stages of development. The old nursery areas contain numerous ornamental species, such as Yews (*Taxus spp.*), Colorado Blue Spruce (*Picea pungens*), Rose-of-Sharon (*Hibiscus syriacus*), Flowering Quince (*Chaenomeles* sp.), Spiraea (*Spiraea spp.*), Rhododendron (*Rhododendron spp.*), Viburnum (*Viburnum spp.*), Crabapple (*Malus spp.*) and Forsythia (*Forsythia spp.*). After abandonment, the characteristic herbs and shrubs have colonized in between them. The eastern part was, fairly recently, a portion of the community described above as Mowed Lawn.

Both of these areas are in an early enough stage that resumption of mowing would readily return them to their former condition. Cessation of mowing has released some lawn weeds to flourish, and other opportunistic species, both herbaceous and woody, have also moved in. In most parts of these fields, Yellow Foxtail (*Setaria pumila*) is conspicuously dominant and was visible during one of the seasons of the visit; other graminoids (grasses and grass-like plants) include Broomsedge (*Andropogon virginicus*), Orchard Grass (*Dactylis glomerata*) and Purple-Top (*Tridens flavus*). Among the forbs (broad-leafed herbaceous species) species are Cat's Ear, Red Clover, Chicory (*Cichorium intybus*), Curled Dock (*Rumex crispus*), Burdock (*Arctium minus*), Black-eyed Susan (*Rudbeckia hirta*), Knapweed (*Centaurea* sp.), and Horseweed (*Conyza canadensis*). Invading woody species, mostly as young plants, include Black Locust (*Robinia pseudoacacia*), Purple Nightshade (*Solanum dulcamara*), Multiflora Rose, and Autumn Olive (*Elaeagnus umbellata*).

Figure 6-4: Representative Photograph of Successional Old Field



A more complete list of vegetation found on site for this community includes such forbs as Goldenrod (*Solidago, spp*), Aster (*Aster spp.*), Mugwort, Common Ragweed (*Ambrosia artemisiifolia*), Broad Dock (*Rumex obtusifolius*), Cat's Ear, Common Fleabane (*Erigeron* sp.), Pale Knotweeed (*Polygonum lapathifolium*), Red Clover, Queen-Anne's Lace (*Daucus carota*), Common Milkweed (*Asclepias syriaca*), White Campion (*Silene latifolia*), and Deptford Pink (*Dianthus armeria*). Graminoids are Timothy Grass (*Phleum pratense*), Orchard Grass, Purple-Top, Crab Grass (*Digitaria* sp.), Quack Grass (*Elyttigia repens*), Path Rush (*Juncus tenuis*), Love Grass (*Eragrostis pectinacea*), Foxtail (*Setaria spp.*), Eulalia (*Miscanthus sinensis*), Deertongue Grass (*Panicum clandestinum*), Broomsedge, and Bent Grass (*Agrostis* sp.).

Shrubs, woody vines and sapling trees are also common and include: Wineberry (*Rubus phoenicolasius*), Blackberry (*R. allegheniensis*), Northern Dewberry (*R. flagellaris*), Black Raspberry (*R. occidentalis*), Flowering Dogwood (*Cornus florida*), Dwarf Sumac (*Rhus copallinum*), Staghorn Sumac (*R. typhina*), Virginia Creeper (*Parthenocissus* sp.), Multiflora Rose, Black Oak (*Quercus velutina*), Pin Oak (*Q. palustris*), White Oak (*Q. alba*), Sweet Cherry (*Prunus avium*), White Mulberry (*Morus alba*), Autumn Olive, Purple Nightshade, and Red Cedar.

Successional Southern Hardwoods

Successional southern hardwoods represent 8.29 acres, or 11.06% of the subject property. The following is the definition of this community as described by Edinger et al (2002):

> **"Successional southern hardwoods:** a hardwood or mixed forest that occurs on sites that have been cleared or otherwise disturbed. "Characteristic trees and shrubs include any of the following: American elm (*Ulmus americana*), slippery elm (*U. rubra*), white ash (*Fraxinus americana*), red maple (*Acer rubrum*), box elder (*Acer negundo*), silver maple (*A. saccharinum*), sassafras (*Sassafras albidum*), gray birch (*Betula populifolia*), hawthorns (*Crataegus* spp.), eastern red cedar (*Juniperus virginiana*),

and choke-cherry (*Prunus virginiana*). Certain introduced species are commonly found in successional southern hardwoods, including black locust (*Robinia pseudo-acacia*), tree of - heaven (*Ailanthus altissima*), and buckthorn (*Rhamnus cathartica*). Any of these may be dominant or codominant in a successional southern hardwood forest. Southern indicators include American elm, white ash, red maple, box elder, choke-cherry, and sassafras. This is a broadly defined community and several seral and regional variants are known.

Edinger et al (2002) indicate that this ecological community is distributed throughout New York State with a rarity ranking of G5 and S5 indicating that these communities are considered "demonstrably secure" both globally and in New York State.

There are four discrete areas within this community type that exist on site. Each of these exists because of different types of communities from which they started their successional revegetation and the amount of time that they have had to develop. The four areas are found in a narrow strip along NYS Route 25A and the eastern margin of the site at the eastern entrance, a large area in the southern portion of the site bordered to the east and west by mowed lawn, a formerly cleared residential property on Mills Pond Road, and a small area just southeast of the catering facility's parking lot that abuts Mills Pond Road.

This ecological community covers a wide spectrum of successional stages and, hence, it can be only broadly characterized. In most places either Black Locust or Black Cherry tends to dominate, while Tree-of-Heaven (*Ailanthus altissima)*, Sassafras, Black Walnut (*Juglans nigra*), Red Cedar, and Sweet Cherry are also are present, and some one or another of these may locally take on more importance. In older examples, oaks and hickories are often present, whereas in younger examples of this vegetation type, senescent individuals of Red Cedar and Gray Birch (*Betula populifolia*) represent remnants of an even earlier, old-field stage.

This kind of forested land on the site is usually extremely viney, the trees and shrubs being covered with Grape, Greenbrier, Virginia Creeper, Asiatic Bittersweet, Porcelainberry, Japanese Honeysuckle and Poison Ivy. Multiflora Rose, Autumn Olive and Blackberry are common shrubs, while an herbaceous stratum is virtually non-existent.

Farm Pond/Artificial Pond

Two small man-made ponds represent 2.02 acres, or 2.69% of the subject property. These ponds were constructed between 1962 and 1978 by enlarging a smaller farm pond. The following is the definition of this community as described by Edinger et al (2002):

> **"Farm pond/artificial pond:** the aquatic community of a small pond constructed on agricultural or residential property. These ponds are often eutrophic, and may be stocked with panfish such as bluegill (*Lepomis macrochirus*), and yellow perch (*Perca flavescens*). The biota are variable (within limits), reflecting the species that were naturally or artificially seeded, planted, or stocked in the pond."

These ponds are thoroughly described in the following section (6.2, Wetlands) beginning on page 6-13.

Hard Surfaces

These are the developed impervious areas possessing the least amount of vegetation including buildings, parking lots, driveways and roads, as well as some limited areas of landscaping immediately surrounding the buildings. These are mainly in the southern part of the site and occupy 18.9 acres, or 25.0% of the site. The following is the definition of these communities as described by Edinger et al (2002):

> **"Urban structure exterior:** the exterior surfaces of metal, wood, or concrete structures (such as commercial buildings, apartment buildings, houses, bridges) or any structural surface composed of inorganic materials (glass, plastics, etc.) in an urban or densely populated suburban area. These sites may be sparsely vegetated with lichens, mosses, and terrestrial algae; occasionally vascular plants may grow in cracks. Nooks and crannies may provide nesting habitat for birds and insects, and roosting sites for bats. "Characteristic birds include common nighthawk (*Chordeiles minor*) on rooftops, American robin (*Turdus migratorius*) on porches or under shelter, and exotic birds such as rock dove (*Columba livia*) and house sparrow (*Passer domesticus*)."
>
> **"Paved road/path:** a road or pathway that is paved with asphalt, concrete, brick, stone, etc. There may be sparse vegetation rooted in cracks in the paved surface."

Representative photographs of these areas are provided in Figure 6-5 below. The above quote from Edinger et al (2002) for urban structure exteriors indicates that the common nighthawk (*Chordeiles minor*) is a characteristic species of hard surface communities, specifically found on rooftops. However, the project site does not contain the urban gravel rooftops preferred by this species, nor does it contain the other preferred natural habitats of this species, including coastal areas, burned forests, woodland clearings, or grasslands (Cornell University 2017). As the preferred habitat is not present, it is unlikely that this species will be found at the project site. Accordingly, the common nighthawk has been omitted from Table 6-3.

Figure 6-5: Representative Photographs of Hard Surfaces

In addition to the eight ecological communities identified by the surveys referenced above, the Final Scope requested additional analysis regarding potential impacts to Long Island's grassland species. This analysis was prepared by William P. Bowman, PhD of Land Use Ecological Services in July 2018 and is presented below.

The site contains large areas of mowed lawn (20.0 acres), mowed lawn with trees (14.1 acres), and successional old fields (4.5 acres), but does not feature any native grassland habitats. Long Island's native grasslands are dominated by native, warm season grasses such as little bluestem (*Schizachyrium scoparium*) and switch grass (*Panicum virgatum*) with lower abundance of native shrubs and forbs. In contrast, the mowed lawn areas consist of cool season grasses that are routinely clipped or mowed close to the ground surface. Successional old fields, such as those on the site, are found on sites that have been previously cleared for farming or development that are dominated by cool season grasses, such as bluegrasses (*Poa sp.*), sweet vernal grass (*Anthoxanthum odoratum*), orchard grass (*Dactylis glomerata*), and various forbs, particularly goldenrods (*Solidago sp.* and *Euthamia sp.*). Grassland and other early successional habitats have declined greatly throughout New York State and northeastern United States over the past century due to development, fire suppression, and the succession of former agricultural lands into forests. As a result, populations of the bird species that utilize grassland habitats have also declined.

The mowed lawn habitats present at the site do not provide breeding habitat for grassland-specialist bird species due to the absence of tall grass cover, clumps of tall grasses, and grass litter. For example, the Eastern meadowlark (*Sturnella magna*) nests in fairly dense, grassy vegetation with a preferred height of 10 to 20 inches with grass heights less than 1 inch or greater than 30 inches, not suitable for nesting (Hull, 2000). The successional old field habitats at the site (approximately 4.5 acres) are mowed/maintained less frequently and, accordingly, provide better habitat for grassland bird species due to the presence of taller grasses.

Grassland bird species, such as the eastern meadowlark, may utilize the open grassy areas of the site seasonally (as wintering habitat) or transiently (during migration periods), due to their preference for open habitats and the site's proximity to higher quality

meadow/grassland habitat located at Avalon Park and Preserve and agricultural habitats at BB & GG Farms on Route 25A. The American kestrel (*Falco sparverius*) nests in tree-cavities and hunts for insects and small animals in various open grassy habitats such as agricultural fields and pastures, airports, power lines, and grassy fields and parks. The open mowed lawns of the site provide foraging habitat for American kestrel along with the higher quality meadow/grassland habitats at Avalon Preserve and agricultural habitats at BB & GG Farms.

6.2. Wetlands

Two wetland areas (2.02 acres total) are present on the subject site consisting of the small man-made ponds. The eastern pond is located north of the school bus parking enclosure on the site, surrounded by a thick hedgerow. There is a headwall located in the southeast corner of the pond and stormwater is being directed into it from at least the bus parking areas to the south. The western pond is located on the Flowerfield catering facility.

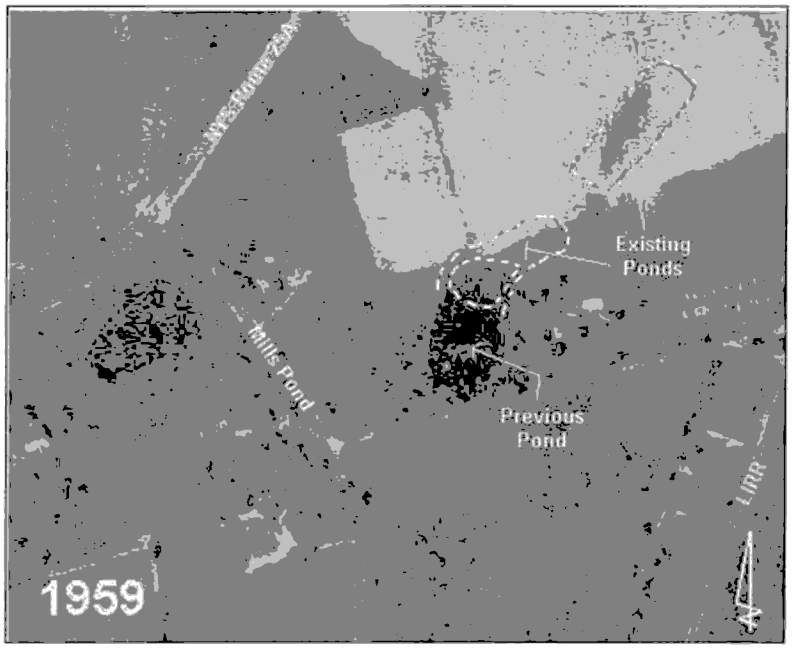
These ponds are New York State Department of Environmental Conservation (NYSDEC) regulated freshwater wetlands (ID# SJ-6) and subject to Article 24 (Freshwater Wetlands Act) of the Environmental Conservation Law. Accordingly, all construction, clearing, grading, or ground disturbance within 100 feet of these ponds is regulated by the NYSDEC Bureau of Habitat. The ponds are identified on the US Fish & Wildlife Service National Wetlands Inventory as "POWZ," i.e., a palustrine, open-water, intermittently exposed, permanent" wetland. These wetlands were delineated in November 2016 and February 2017 by William P. Bowman, PhD of Land Use Ecological Services.

These ponds have steeply excavated banks that support little freshwater wetland vegetation. The pond at the Flowerfield catering property largely features mowed turf grass to the pond edge with some areas of landscape planting and some thickets of invasive plants such as multiflora rose (*Rosa multiflora*), porcelainberry (*Ampelopsis brevipendunculata*), and white mulberry (*Morus alba*). Similarly, the steep banks of the eastern wetland support little freshwater vegetation; however, the following hydrophytic species were observed low on the pond banks: Beggar's-Ticks (*Bidens frondosa*), Dwarf St.-Johns Wort (*Hypericum mutilum*), False-Pimpernel (*Lindernia dubia*) and Mild Water-Pepper (*Polygonum hydropiperoides*). The steep banks and adjacent uplands on the pond is bordered by planted rows of Gray Birch and Red Cedars and naturally established plant species such as Black Cherry, Flowering Dogwood, Black Locust, Mimosa (*Albizia julibrissin*), Japanese Black Pine (*Pinus thunbergii*), Sassafras and a species of Willow (*Salix* sp.). Several shrubby species were found as well including Multiflora Rose, Bayberry (*Morella pensylvanica*), Pussy Willow (*Salix discolor*), Autumn Olive and Wineberry. Vines, including Japanese Honeysuckle and Wild Grape, are abundant along with weedy herbaceous plants such as Broad Dock, Queen Anne's Lace, St. John's Wort,

Moth Mullein, Orchard Grass, Pokeweed (*Phytolacca americana*), Field Garlic (*Allium vineale*), Mugwort, Wild Lettuce (*Lactuca* sp.), and Avens (*Geum* sp.).

These ponds were constructed between 1962 and 1978 by enlarging a smaller farm pond. The below figure shows the outlines of the existing ponds on a 1959 aerial photograph showing the creation of the two existing ponds in former agricultural fields from the original farm pond.

Figure 6-6: 1959 Aerial Photograph



6.3. Vegetation

A plant list for the Gyrodyne and Flowerfield properties was prepared from the 2008 proposed DEIS (Cameron Engineering) based on ecological surveys completed by Dr. Orland J. Blanchard, Jr. and Thomas W. Cramer, ASLA in 2006 and 2008, and the May 2017 survey completed by Dr. William P. Bowman. See Table 6-2 starting below. A total of 196 vascular plant species were observed at the site, including 92 woody plants, 102 herbaceous plants, and two ferns.

Table 6-2: Plant Species List

a: Plant Species reported in 2008 proposed DEIS (see Appendix E)	**b: Additional Plant Species observed by WP Bowman, PhD, May 2017**	**c: Plant Species reported in 2008 proposed DEIS and observed in 2017**
TREES, SHRUBS AND WOODY VINES		
Common Name	***Scientific Name***	
Glossy Abelia[b]	*Abelia x grandiflora*	

a: Plant Species reported in 2008 proposed DEIS (see Appendix E)	**b: Additional Plant Species observed by WP Bowman, PhD, May 2017**	**c: Plant Species reported in 2008 proposed DEIS and observed in 2017**
TREES, SHRUBS AND WOODY VINES		
Common Name	***Scientific Name***	
Japanese Maple[b]	*Acer palmatum*	
Norway Maple[c]	*Acer platanoides*	
Red Maple[c]	*Acer rubrum*	
Silver Maple[c]	*Acer saccharinum*	
Tree-of-Heaven[c]	*Ailanthus altissima*	
Mimosa[c]	*Albizia julibrissin*	
Porcelainberry [c]	*Ampelopsis brevipedunculata*	
Japanese Angelica Tree[a]	*Aralia elata*	
Azalea[b]	*Azalea sp.*	
Japanese Barberry[b]	*Berberis thunbergii*	
Black Birch[c]	*Betula lenta*	
Paper Birch[b]	*Betula papyrifera*	
Gray Birch[c]	*Betula populifolia*	
Pignut Hickory[c]	*Carya glabra*	
Mockernut Hickory[c]	*Carya tomentosa*	
Asiatic Bittersweet[c]	*Celastrus orbiculatus*	
Flowering Quince[a]	*Chaenomeles sp.*	
Flowering Dogwood[c]	*Cornus florida*	
Yellowwood[b]	*Cladrastis kentukea*	
Japanese Cedar[b]	*Cryptomeria japonica*	
Leyland Cypress[b]	*Cupressus × leylandii*	
Autumn Olive[c]	*Elaeagnus umbellata*	
Winged Euonymus[c]	*Euonymus alata*	
American Beech[c]	*Fagus grandifolia*	
Forsythia[c]	*Forsythia sp.*	
White Ash[c]	*Fraxinus americana*	
Honey-Locust[c]	*Gleditsia triacanthos*	
English Ivy[c]	*Hedera helix*	
Rose-of-Sharon[c]	*Hibiscus syriacus*	
Hydangea[b]	*Hydrangea macrophylla*	
American Holly[c]	*Ilex opaca*	
Japanese Holly[b]	*Ilex crenata*	
Japanese Walnut/Hybrid Butternut[b]	*Juglans ailantifolia/J. x bixbyi*	
Black Walnut[c]	*Juglans nigra*	
Red Cedar[c]	*Juniperus virginiana*	
Crape Myrtle[b]	*Lagerstroemia sp.*	
Privet[c]	*Ligustrum sp.*	
Tulip-Tree[c]	*Liriodendron tulipifera*	
Japanese Honeysuckle[c]	*Lonicera japonica*	

a: Plant Species reported in 2008 proposed DEIS (see Appendix E)	b: Additional Plant Species observed by WP Bowman, PhD, May 2017	c: Plant Species reported in 2008 proposed DEIS and observed in 2017
TREES, SHRUBS AND WOODY VINES		
Common Name	***Scientific Name***	
Fly Honeysuckle[c]	*Lonicera morrowi*	
Honeysuckle[a]	*Lonicera sp.*	
Toringo Crabapple[a]	*Malus sieboldii*	
White Mulberry[c]	*Morus alba*	
Bayberry[c]	*Myrica pensylvanica*	
Virginia Creeper[c]	*Parthenocissus sp.*	
Princess Tree[b]	*Paulownia tomentosa*	
Ninebark[b]	*Physocarpus opulifolius*	
Norway Spruce[c]	*Picea abies*	
Dwarf White Spruce[b]	*Picea glauca*	
Colorado Blue Spruce[c]	*Picea pungens*	
Japanese Black Pine[c]	*Pinus thunbergii*	
Big-toothed Aspen[c]	*Populus grandidentata*	
Sweet Cherry[c]	*Prunus avium*	
Black Cherry[c]	*Prunus serotina*	
Japanese Flowering Cherry[b]	*Prunus serrulata 'Kwanzan'*	
Douglas Fir[c]	*Pseudotsuga menziesii*	
Bradford Pear[b]	*Pyrus calleryana*	
Apple[c]	*Pyrus malus*	
White Oak[c]	*Quercus alba*	
Scarlet Oak[c]	*Quercus coccinea*	
Pin Oak[c]	*Quercus palustris*	
Black Oak[c]	*Quercus velutina*	
Rhododendron[c]	*Rhododendron sp.*	
Jetbead[a]	*Rhodotypos scandens*	
Dwarf Sumac[c]	*Rhus copallinum*	
Smooth Sumac[a]	*Rhus glabra*	
Staghorn Sumac[c]	*Rhus typhina*	
Black Locust[c]	*Robinia pseudoacacia*	
Multiflora Rose[c]	*Rosa multiflora*	
Blackberry[c]	*Rubus allegheniensis*	
Northern Dewberry[c]	*Rubus flagellaris*	
Black Raspberry[a]	*Rubus occidentalis*	
Wineberry[c]	*Rubus phoenicolasius*	
Weeping Willow[b]	*Salix babylonica*	
Pussy Willow[c]	*Salix discolor*	
Corkscrew Willow[b]	*Salix matsudana*	
Willow[a]	*Salix sp.*	
Sassafras[c]	*Sassafras albidum*	

a: Plant Species reported in 2008 proposed DEIS (see Appendix E)	b: Additional Plant Species observed by WP Bowman, PhD, May 2017	c: Plant Species reported in 2008 proposed DEIS and observed in 2017
TREES, SHRUBS AND WOODY VINES		
Common Name	***Scientific Name***	
Greenbrier[c]	*Smilax rotundifolia*	
Purple Nightshade[c]	*Solanum dulcamara*	
Yew[c]	*Taxus sp.*	
Arborvitae[b]	*Thuja occidentalis*	
Small-leaved Linden[b]	*Tilia cordata*	
Silver Linden[b]	*Tilia tomentosa*	
Linden[a]	*Tilia sp.*	
Poison Ivy[c]	*Toxicodendron radicans*	
Northern Hemlock[c]	*Tsuga canadensis*	
Viburnum (ornamental)[a]	*Viburnum sp.*	
Fox Grape[b]	*Vitis labrusca*	
Grape[a]	*Vitis sp.*	
Adams Needle[b]	*Yucca filamentosa*	
HERBACEOUS PLANTS		
Common Name	***Scientific Name***	
Three-Seeded Mercury[a]	*Acalypha rhomboidea*	
Bent Grass[a]	*Agrostis sp.*	
Garlic Mustard[c]	*Alliaria petiolata*	
Field Garlic[c]	*Allium vineale*	
Common Ragweed[c]	*Ambrosia artemisiifolia*	
Broomsedge[c]	*Andropogon virginicus*	
Sweet Vernal Grass[a]	*Anthoxanthum odoratum*	
Indian Hemp[c]	*Apocynum cannabinum*	
Indian Hemp[a]	*Apocynum medium*	
Burdock[c]	*Arctium minus*	
Mugwort[c]	*Artemisia vulgaris*	
Common Milkweed[c]	*Asclepias syriaca*	
White Wood Aster[a]	*Aster divaricatus*	
Heath Aster[a]	*Aster ericoides*	
Panicled Aster[a]	*Aster lanceolatus*	
Calico Aster[a]	*Aster lateriflorus*	
Winter Cress[c]	*Barbarea vulgaris*	
Beggar's-Ticks[a]	*Bidens frondosa*	
Hedge Bindweed[c]	*Calystegia sepium*	
Spotted Knapweed[c]	*Centaurea maculosa*	
Knapweed[a]	*Centaurea nigrescens*	
Mouse-Ear Chickweed[c]	*Cerastium vulgatum*	
Lamb's Quarters[a]	*Chenopodium album*	

a: Plant Species reported in 2008 proposed DEIS (see Appendix E)	**b: Additional Plant Species observed by WP Bowman, PhD, May 2017**	**c: Plant Species reported in 2008 proposed DEIS and observed in 2017**
TREES, SHRUBS AND WOODY VINES		
Common Name	***Scientific Name***	
Chicory[c]	*Cichorium intybus*	
Bull Thistle[c]	*Cirsium vulgare*	
Horseweed[c]	*Conyza canadensis*	
Nutgrass[a]	*Cyperus strigosus*	
Orchard Grass[c]	*Dactylis glomerata*	
Queen Anne's Lace[c]	*Daucus carota*	
Deptford Pink[c]	*Dianthus armeria*	
Smooth Crabgrass[a]	*Digitaria ischaemum*	
Crabgrass[a]	*Digitaria sanguinalis*	
Indian Strawberry[c]	*Duchesnea indica*	
Quack Grass[a]	*Elytrigia repens*	
Love Grass[a]	*Eragrostis pectinacea*	
Daisy Fleabane[a]	*Erigeron sp.*	
White Snakeroot[c]	*Eupatorium rugosum*	
Grass-leafed Goldenrod[c]	*Euthamia graminifolia*	
Fescue[c]	*Festuca sp.*	
Siberian Geranium[a]	*Geranium sibiricum*	
Avens[a]	*Geum sp.*	
Gill-over-the-Ground[c]	*Glechoma hederacea*	
Hawkweed[c]	*Hieracium sp.*	
Hosta[b]	*Host asp.*	
Dwarf St. John's Wort[a]	*Hypericum mutilum*	
Common St. John's Wort[a]	*Hypericum perforatum*	
Cat's Ear[c]	*Hypochaeris radicata*	
Jewelweed[b]	*Impatiens capensis*	
Path Rush[a]	*Juncus tenuis*	
Wild Lettuce[a]	*Lactuca canadensis*	
Prickly Lettuce[a]	*Lactuca serriola*	
Silver Dead Nettle[b]	*Lamium maculatum*	
Peppergrass[a]	*Lepidium virginicum*	
Butter-and-Eggs[c]	*Linaria vulgaris*	
False-Pimpernel[a]	*Lindernia dubia*	
Indian Tobacco[a]	*Lobelia inflata*	
Eulalia[c]	*Miscanthus sinensis*	
Nimblewill[a]	*Muhlenbergia schreberi*	
Evening Primrose[c]	*Oenothera sp.*	
Yellow Wood Sorrel[a]	*Oxalis sp.*	
Deertongue Grass[c]	*Panicum clandestinum*	
Fall Panicum[a]	*Panicum dichotomiflorum*	

a: Plant Species reported in 2008 proposed DEIS (see Appendix E)	b: Additional Plant Species observed by WP Bowman, PhD, May 2017	c: Plant Species reported in 2008 proposed DEIS and observed in 2017
TREES, SHRUBS AND WOODY VINES		
Common Name	***Scientific Name***	
Grass of Parnassus[b]	*Parnassia palustris*	
Timothy Grass[c]	*Phleum pratense*	
Common Reed[b]	*Phragmites australis*	
Pokeweed[c]	*Phytolacca americana*	
English Plantain[c]	*Plantago lanceolata*	
Common Plantain[c]	*Plantago major*	
Speargrass[a]	*Poa annua*	
Smartweed[a]	*Polygonum cespitosum*	
Mild Water-Pepper[a]	*Polygonum hydropiperoides*	
Pale Smartweed[a]	*Polygonum lapathifolium*	
Lady's Thumb[a]	*Polygonum persicaria*	
Rough-fruited Cinquefoil[a]	*Potentilla recta*	
Heal-All[c]	*Prunella vulgaris*	
Tall Buttercup[b]	*Ranunculus acris*	
Buttercup[a]	*Ranunculus sp.*	
Black-eyed Susan[c]	*Rudbeckia hirta*	
Sheep Sorrel[c]	*Rumex acetosella*	
Curled Dock[c]	*Rumex crispus*	
Broad Dock[a]	*Rumex obtusifolius*	
Giant Foxtail[a]	*Setaria faberi*	
Yellow Foxtail[c]	*Setaria pumila*	
Green Foxtail[c]	*Setaria viridis*	
White Campion[a]	*Silene latifolia*	
Canada Goldenrod[a]	*Solidago canadensis*	
Early Goldenrod[a]	*Solidago juncea*	
Gray Goldenrod[a]	*Solidago nemoralis*	
Sweet Goldenrod[a]	*Solidago odora*	
Rough-stemmed Goldenrod[a]	*Solidago rugosa*	
Showy Goldenrod[a]	*Solidago speciosa*	
Horse-Nettle[a]	*Solanum carolinense*	
Common Chickweed[c]	*Stellaria media*	
Dandelion[c]	*Taraxacum officinale*	
Goatsbeard[a]	*Tragopogon pratensis*	
Purple-Top[c]	*Tridens flavus*	
Red Clover[c]	*Trifolium pratense*	
White Clover[c]	*Trifolium repens*	
Moth Mullein[a]	*Verbascum blattaria*	
Common Mullein[c]	*Verbascum thapsus*	
Common Periwinkle[b]	*Vinca minor*	

a: Plant Species reported in 2008 proposed DEIS (see Appendix E)	b: Additional Plant Species observed by WP Bowman, PhD, May 2017	c: Plant Species reported in 2008 proposed DEIS and observed in 2017
TREES, SHRUBS AND WOODY VINES		
Common Name	***Scientific Name***	
Common Blue Violet[c]	*Viola sororia*	
FERNS AND FERN ALLIES		
Common Name	***Scientific Name***	
Sensitive Fern[b]	*Onoclea sensibilis*	
New York Fern[c]	*Thelypteris noveboracensis*	

6.4. Wildlife

The birds, herpetiles, mammals, fish, and butterflies/dragonflies observed or expected to occur on the subject property, and their abundance and distribution on the site, are determined by the quality and composition of the existing habitats. The wildlife species observed or expected to occur (presented in Table 6-3 (starting on page 6-21) through Table 6-6 (starting on page 6-25) are based on field surveys by Dr. Orland J. Blanchard. and Thomas W. Cramer, ASLA in 2006 to 2008 (Cameron Engineering) and Dr. William P. Bowman in 2017. Mowed lawn, mowed lawn with trees, and hard surfaces (i.e. parking areas, roadways, and buildings) account for 52.87 acres (70.51%) of the site. These cultural ecological communities provide limited habitat for wildlife due to the poor diversity, abundance, and structure of the existing vegetation. The wildlife species that do utilize these habitats are highly tolerant of human activity and, accordingly, tend to be familiar and abundant species of suburban habitats. The successional southern hardwoods, successional old fields, and overgrown hedgerows provide the greatest wildlife habitat potential at the subject site despite historical and on-going disturbance and the abundance of invasive plant species. These habitats account for 19.25 acres (25.7%) of the site.

Birds

Forty-five bird species have been observed on the subject property with an additional thirty-five species expected to occur based on the habitat types present. In general, the observed species are typical of suburban landscapes, open fields, shrublands and woodlands, and forest edges. Wildlife species that require large tracts of forested habitat or are intolerant of human activity are not expected to utilize the site. Approximately 71% of these birds (i.e. 57 species) may utilize the property for breeding habitat based on the observed habitat conditions and known bird breeding activity documented in the 2008 New York Breeding Atlas in the vicinity of Stony Brook/St James/Head of the Harbor (McGowan and Corwin, 2008). Approximately 60% of these birds (i.e. 48 species) are expected to transiently utilize the site seasonally such as the summer months only, only during spring and autumn migrations, or as overwintering habitat. The remaining 32 species can be found year round in appropriate habitats on Long Island.

Table 6-3: Bird Species Observed/Expected On-Site[25]

Scientific Name	Common Name	Observed (O) or Expected (E)	Breeding Status (Y) or (N)[26]	Year Round (Y) Summer Resident (S) Migrant (M) or Overwintering
Anas platyrhynchos	Mallard	O	Y	Y
Branta canadensis	Canada Geese	O	Y	Y
Cygnus olor	Mute Swan	O	Y	Y
Colinus virginianus	Northern Bobwhite	O	Y	Y
Ardea Herodias	Great Blue Heron	O	N	Y
Accipiter cooperii	Cooper's Hawk	E	N	Y
Accipiter striatus	Sharp-shinned Hawk	E	N	Y
Buteo jamaicensis	Red-tailed Hawk	E	Y	Y
Falco sparverius	American Kestrel	E	N	M
Charadrius melodius	Killdeer	E	Y	S
Columba livia	Rock Dove	E	Y	Y
Zenaida macroura	Mourning Dove	O	Y	Y
Bubo virginianus	Great Horned Owl	E	Y	Y
Otus asio	Eastern Screech Owl	E	Y	Y
Chaetura pelagica	Chimney Swift	E	Y	S
Ceryle alcyon	Belted Kingfisher	E	Y	Y
Colaptes auratus	Northern Flicker	O	Y	S
Melanerpes carolinus	Red-bellied Woodpecker	O	Y	S
Picoides pubescens	Downy Woodpecker	O	Y	Y
Picoides villosus	Hairy Woodpecker	O	Y	Y
Sphyrapicus varius	Yellow-bellied Sapsucker	E	N	O
Empidonax traillii	Willow Flycatcher	E	N	S
Myiarchus crinitus	Great-crested Flycatcher	E	Y	S
Sayornis phoebe	Eastern Phoebe	O	N	S
Tyrannus tyrannus	Eastern Kingbird	E	Y	S
Vireo griseus	White-eyed Vireo	E	Y	S
Vireo olivaceus	Red-eyed Vireo	E	Y	S
Vireo solitarius	Blue-headed Vireo	O	N	M
Corvus brachyrhynchos	American Crow	O	Y	Y
Corvus ossifragus	Fish Crow	E	Y	Y
Cyanocitta cristata	Blue Jay	O	Y	Y

[25] Species Observed During Field Surveys in 2006 (OJ Blanchard), 2008 (TW Cramer), 2017 (WP Bowman)
[26] Based on New York State Breeding Bird Atlas (McGowan and Corwin, 2008); Y = Yes, Breeding is known to occur in local Breeding Bird Atlas Block (Block #6552A); N = No, Breeding is not known to occur in local Breeding Bird Atlas Block
[27] Y = Species can be found year-round; M = Species can be during spring or autumn migrations; O = Species are expected to overwinter; S = Species can be found in summer and when arriving and departing during migration.

Scientific Name	Common Name	Observed (O) or Expected (E)	Breeding Status (Y) or (N)[26]	Year Round (Y) Summer Resident (S) Migrant (M) or Overwintering
Hiruno rustica	Barn Swallow	E	Y	S
Tachycineta bicolor	Tree Swallow	O	Y	S
Baeolophus bicolor	Tufted Titmouse	O	Y	Y
Poecile atricapillus	Black-capped Chickadee	O	Y	Y
Sitta canadensis	Red-breasted Nuthatch	E	N	M
Sitta carolinensis	White-breasted Nuthatch	E	Y	Y
Certhia americana	Brown Creeper	E	N	M
Thyrothorus ludovicianus	Carolina Wren	O	Y	Y
Troglodytes aedon	House Wren	O	Y	S
Regulus calendula	Ruby-crowned Kinglet	O	N	O
Regulus satrapa	Golden-crowned Kinglet	O	N	O
Catharus fruscescens	Veery	E	N	S
Catharus guttatus	Hermit Thrush	O	N	O
Hylocichla mustelina	Wood Thrush	E	Y	S
Turdus migratorius	American Robin	O	Y	Y
Dumetella carolinensis	Gray Catbird	O	Y	S
Mimus polyglottos	Northern Mockingbird	O	Y	Y
Sturnus vulgaris	European Starling	O	Y	Y
Bombycilla cedrorum	Cedar Waxwing	O	Y	Y
Dendroica caerulescens	Black-throated Blue Warbler	O	N	M
Dendroica coronata	Yellow-rumped Warbler	O	N	O
Geothlypis trichas	Common Yellowthroat	O	Y	S
Mniotilta varia	Black-and-white Warbler	O	Y	S
Setophaga petechia	Yellow Warbler	O	Y	S
Setophaga pinus	Pine Warbler	E	N	S
Setophaga ruticilla	American Redstart	O	Y	M
Vermivora pinus	Blue-winged Warbler	E	Y	S
Junco hyemalis	Dark-eyed Junco	O	N	O
Melospiza melodia	Song Sparrow	O	Y	Y
Passerella iliaca	Fox Sparrow	O	N	O
Pipilo	Eastern Towhee	O	Y	S
Spizella arborea	American Tree Sparrow	E	N	O
Spizella passerina	Chipping Sparrow	O	Y	S
Spizella pusilla	Field Sparrow	O	Y	S
Zonotrichia albicollis	White-throated Sparrow	O	N	O
Cardinalis cardinalis	Northern Cardinal	O	Y	Y

Scientific Name	Common Name	Observed (O) or Expected (E)	Breeding Status (Y) or (N)[26]	Year Round (Y) Summer Resident (S) Migrant (M) or Overwintering
Passerina cyanea	Indigo Bunting	E	Y	S
Pheucticus ludovicianus	Rose-breasted Grosbeak	E	Y	S
Piranga olivacea	Scarlet Tanager	E	Y	S
Agelaius phoeniceus	Red-winged Blackbird	O	Y	S
Icterus galbula	Baltimore Oriole	E	Y	S
Icterus spurious	Orchard Oriole	E	Y	S
Molothrus ater	Brown-headed Cowbird	E	Y	S
Sturnella magna	Eastern Meadowlark	E	N	S
Quiscalus quiscula	Common Grackle	O	Y	S
Carduelis tristis	American Goldfinch	O	Y	Y
Carpodacus mexicanus	House Finch	O	Y	Y
Carpodacus purpureus	Purple Finch	E	N	O
Passer domesticus	House Sparrow	E	Y	Y

Mammals:

Five mammal species (or scat/sign of these species) were observed at the site: gray squirrel (*Sciurus carolinensis)*, eastern cottontail (*Sylvilagus floridanus)*, eastern chipmunk (*Tamias striatus*), raccoon (*Procryon lotor*), and white-tailed deer (*Odocoileus virginianus*). Table 6-4 below provides a list of all mammal species observed or expected to occur on-site based on habitat preferences (Connor, 1971) and the ecological communities present. All observed or expected mammals are common in suburban landscapes; prefer open, early successional, or edge habitats; and are tolerant of human activity.

The expected bat species, big brown bat (*Eptesicus fuscus*), eastern red bat (*Lasiurus borealis*), northern long-eared bat (*Myotis septentrionalis*), and little brown bat (*Myotis lucifugus*), are based on Fishman (2013) and Connor (1971). The northern long-eared bat (*Myotis septentroinalis*) was listed in 2016 as threatened by the US Fish and Wildlife Service and the New York State Department of Environmental Conservation. The northern long-eared bat can utilize a wide variety of upland woodland and forest types (NYNHP, 2016), but are typically associated with mature interior forest (Carroll et al, 2002) and tend to avoid woodlands with significant edge habitat (Yates and Muzika 2006). Other studies have found that northern long-eared bat can also be found using younger forest types (NYNHP, 2016). Due to the northern long-eared bats preference for mature interior forests, this species is not considered expected to occur on the subject property.

Table 6-4: Mammal Species Observed Or Expected On Site

Scientific Name	Common Name
Blarina brevicauda	Short-tailed Shrew
Didelphis virginiana	Virginia Opossum

Scientific Name	Common Name
Eptesicus fuscus	Big Brown Bat
Lasiurus borealis	Eastern Red Bat
Marmota monax	Woodchuck
Microtus	Meadow Mouse
Mus musculus	House Mouse
Myotis lucifugus	Little Brown Bat
Odocoileus	White-tailed Deer
Peromyscus leucopus	White-footed
Pitymys pinetorum	Pine Mouse
Procyon lotor[28]	Raccoon
Rattus norvegicus	Norway Rat
Scalopus aquaticus	Eastern Mole
Sciurus carolinensis[28]	Gray Squirrel
Sorex cinereus	Masked Shrew
Sylvilagus floridanus[28]	Eastern Cottontail
Tamias striatus[28]	Eastern Chipmunk
Vulpes vulpes	Red Fox

Reptiles, **Amphibians,** and Fish:

Approximately nine species of reptiles and amphibians are expected to occur on the subject site (Table 6-5) based on site observations, existing habitat types, and the New York State Herpetological Atlas (NYSDEC, 2009). The New York State Herpetological Atlas provides known records of reptile and amphibian species from 1990-1998 for each 7.5-minute USGS topographic quadrangle within New York State. The expected reptile and amphibian species listed in Table 6-5 below are based on the Saint James, NY quadrangle. The eastern box turtle (*Terrapene carolina*) is listed as a New York State Species of Special Concern and is a common inhabitant of dry and moist woodlands, brushy fields, marsh edges, and bottomlands (Massachusetts Division of Fisheries and Wildlife, 2015). The red-backed salamander (*Plethodon cinereus*) is a terrestrial species that inhabits woodlands with abundant logs, leaf litter, rocks, and moss to provide shelter for it and its prey. The common and ubiquitous garter snake can be found in various woodlands, fields, and suburban habitats, especially near water, and is expected to be present throughout the property. The remaining reptiles and amphibian species potentially present on-site would be associated with the small man-made ponds and their shorelines.

Table 6-5: Reptile & Amphibian Species Observed Or Expected On Site

Scientific Name	Common Name
Chelydra serpentina	Common Snapping Turtle
Chrysemys picta	Eastern Painted Turtle
Plethodon cinereus	Red-backed Salamander
Pseudacris crucifer	Northern Spring Peeper
Rana catesbeiana	Bullfrog
Rana clamitans	Green Frog
Terrepene carolina	Eastern Box Turtle

[28] Species observed on-site by WP Bowman in 2017.

Thamnophis sirtalis	Common Garter Snake
Trachemys scripta	Red-eared Slider

Other Species:

Butterflies and dragonflies observed during the ecological surveys of the subject site were inventoried and are presented in Table 6-6 below.

Table 6-6: Butterfly & Other Species Expected On Site

Scientific Name	Common Name
Butterflies	
Atalopedes campestris	Sachem[29]
Cercyonis pegala	Common Wood Nymph[29]
Colias eurytheme	Orange Sulfur[29]
Colias philodice	Clouded Sulfur[29]
Danaus plexippus	Monarch[29]
Epargyreus clarus	Silver-spotted Skipper[29]
Everes comyntas	Eastern Tailed Blue[29]
Junonia coenia	Common Buckeye[29]
Limenitis arthemis	Red-spotted Purple[29]
Lycaena phlaeas	American Copper[29]
Megisto cymela	Little Wood Satyr[29]
Nymphalis antiopa	Mourning Cloak[29]
Papilio glaucus	Eastern Tiger Swallowtail[30]
Papilio troilus	Spicebush Swallowtail[29]
Phoebis sennae	Cloudless Sulfur[29]
Phyciodes tharos	Pearl Crescent[29]
Pieris rapae	Cabbage White[29]
Poanes hobomok	Hobomok Skipper[29]
Poanes zabulon	Zabulon Skipper[29]
Polites peckius	Peck's Skipper[29]
Polites themistocles	Tawny-edged Skipper[29]
Satyrium liparops	Striped Hairstreak[29]
Satyrium titus	Coral Hairstreak[29]
Strymon melinus	Gray Hairstreak[29]
Vanessa atalanta	Red Admiral[29]
Dragonflies	
Anax junius	Green Darner[29]
Pantala hymenaea	Spot-winged Glider[30]

[29] Reported in Cameron Engineering proposed DEIS (2008) – see Appendix E: Ecology Analysis
[30] Observed by WP Bowman in May 2017

6.5. Endangered, Threatened, Rare Species or Significant Ecological Communities

No endangered, threatened, or rare species or significant ecological communities were observed during the ecological surveys conducted in 2006 (Orland J. Blanchard), 2008 (Thomas W. Kramer), and 2017 (William P. Bowman) due to the extensive historical disturbance at the subject site. New York Natural Heritage Program correspondence from April 17, 2008 indicates that the NYNHP has no records of known occurrences of rare or state-listed animals or plants, significant natural communities, or other significant habitats, on or in the vicinity of the site (see Appendix E: Ecology Analysis). Recent searches of New York State Department of Environmental Conservation online databases, i.e. the New York State Environmental Resource Mapper (www.dec.ny.gov/gis/erm) and New York State EAF Mapper (www.dec.ny.gov/eafmapper) indicate no records of endangered, threatened, or rare species or significant ecological communities on or in the vicinity of the site.

Three species listed as Species of Special Concern by New York State are expected to occur on or utilize the Flowerfield property as habitat. Species of Special Concern are species for which a welfare concern or risk of endangerment has been documented in New York State. These three species include:

Eastern Box Turtle	*Terrapene carolina*
Cooper's Hawk	*Accipiter cooperii*
Sharp-shinned Hawk	*Accipiter striatus*

The eastern box turtle (*Terrapene carolina*) would be expected to be found in any of the vegetated upland habitats on-site including the successional southern hardwoods, successional old fields, mowed lawn areas (with and without trees), and overgrown hedgerows. While box turtles are expected to be present on the site, several potential threats to box turtles limit the on-site habitat quality for this species including mowing of the fields and lawns and mortality from cars on the site's roads and parking areas.

Cooper's hawk (*Accipiter cooperii*) and sharp-shinned hawk (*Accipiter striatus*) inhabit various upland and wetland forests during the breeding season including fragmented forests within agricultural, suburban, and urban landscapes with sharp-shinned hawks preferring forest edge habits. Neither species was documented to nest in the Stony Brook/St James/Head of Harbor area by the 2008 New York State Breeding Bird Atlas (McGowan and Corwin, 2008); however, Cooper's hawks breeding sites have been expanding in New York over the last several decades. During the winter months, both species frequent residential areas to hunt for songbirds at bird feeders. Both species are expected to utilize the subject site as foraging habitat during any season.

6.6. Potential Impacts to Ecological Communities, Plants, and Wildlife

The potential development of Lots 3 through 9 will affect 16.66 acres of the mowed lawn, mowed lawn with trees, successional old fields, overgrown hedgerows, and successional southern hardwoods on the Flowerfield property. As shown on Table 6-7, the proposed development of Lots 3 through 8 and construction of the Sewage Treatment Plant in Lot 9

will result in the loss of 2.43 acres of mowed lawn with trees, 7.85 acres of mowed lawn, 1.22 acres of successional old fields, 2.65 acres of overgrown hedgerows, and 2.51 acres of successional southern hardwoods. The acreage of hard, impervious surfaces (existing 18.87 acres) is proposed to increase by 16.95 acres and would then comprise approximately 48% of the subject site. In total, approximately 6.38 acres of "natural habitats" (i.e. successional southern hardwoods, successional old fields, and overgrown hedgerows) will be converted to impervious hard surfaces.

Table 6-7: Proposed Changes in Ecological Community Coverages (Acres)

Ecological Community Type	Existing	Percent	Proposed	Percent	Change	Percent Change
Hard Surfaces	18.87	25.17%	35.82	47.77%	16.95	22.61%
Mowed Lawn with Trees	14.03	18.71%	11.60	15.47%	-2.43	-3.24%
Mowed Lawn	19.97	26.63%	12.12	16.16%	-7.85	-
Successional Southern Hardwoods	8.29	11.06%	5.78	7.71%	-2.51	-3.35%
Successional Old Field	4.51	6.01%	3.29	4.39%	-1.22	-1.63%
Overgrown Hedgerows	6.45	8.60%	3.80	5.07%	-2.65	-3.53%
Orchard	0.84	1.12%	0.56	0.75%	-0.28	-0.38%
Artificial Pond	2.02	2.69%	2.02	2.69%	0.00	0.00%
Total Site	74.98	100%	74.98		0.02	

Note: Numbers may not add directly due to rounding.

The loss of these 6.38 acres of early successional communities will result in decreased habitat availability for the plants, birds, and other wildlife that utilize these habitats and a corresponding decrease in the abundance and diversity of the plant and wildlife species present at the site. The proposed subdivision will also result in the loss of 10.28 acres of mowed lawn and mowed lawn with trees. The loss of these 10.28 acres of mowed lawn habitats will not result in any significant ecological impacts due to the poor diversity and wildlife habitat provided by these habitats.

Under both existing and proposed conditions, the site is expected to support only relatively common, suburban, human-tolerant wildlife species. However, under the proposed conditions, human disturbance/activity will be increased and available habitat will be reduced and limited to the narrow (190 to 300-foot) strip of habitat between Route 25A and Lots 4, 5, and 7 and the 80- to 110-foot wide buffer surrounding the eastern pond. Accordingly, those species that are least tolerant of human activity, require greater habitat quality or diversity, or require larger habitat patches will be most impacted and less likely to utilize the site under the proposed conditions.

While the proposed action will result in the loss of 6.38 acres of successional old fields, successional southern hardwoods, and overgrown hedgerows and 10.28 acres of mowed lawn (with and without trees), the resulting habitat loss and any subsequent reductions in local abundance of bird or wildlife species is not expected to be a significant adverse environmental impact, as:

- Successional old fields and successional southern hardwoods are classified by the New York Natural Heritage Program as "demonstrably secure" both in New York State and globally (Edinger et al. 2002). Accordingly, these habitats are abundant both locally

and throughout New York State.

- These habitats are not known to provide habitat for any endangered, threatened, or rare wildlife or plant species.
- Approximately 70.9% of the successional old fields and successional southern hardwoods, 3.29 and 5.78 acres respectively, will be retained on-site. However, these remaining habitats will experience a reduction in habitat quality due to the intensification of human activity at its edges.
- The 3.9 acres of mowed lawns and mowed lawn with trees remaining within Lot 9 (excluding the Sewage Treatment Plant site) will likely transition to old field and subsequently hardwood forest habitats over time.

6.7. Potential Impacts to Wetlands and Wetland-dependent Wildlife

No alterations to the existing ponds are included in the proposed subdivision. The existing overgrown hedgerows (approximately 50-75 feet in width) shall be maintained and an additional buffer area shall be provided to maintain 80-110 feet of naturally vegetated buffer area. This would represent a minor positive impact to this eastern pond. However, the habitat quality provided to birds and wildlife by this expanded buffer area would likely be reduced due to the intensification of the human disturbance and activity along the landward edges of the buffer associated with the development of the roadways and the proposed hotel, spa, and conference center. Water quality impacts or benefits may be realized within the existing ponds (with resulting effects on aquatic wildlife such as amphibians and fish) depending on stormwater generation and management under the proposed subdivision and the potential increased use of fertilizers in areas surrounding the ponds.

6.8. Endangered, Threatened, Rare Species or Significant Ecological Communities

No endangered, threatened, or rare species or significant ecological communities are known to be present on the subject site; accordingly, no impacts to endangered, threatened, or rare species or significant ecological communities shall result from the proposed action.

Three species listed as Species of Special Concern by New York State are expected to occur on or utilize the Gyrodyne-Flowerfield properties as habitat including eastern box turtle (*Terrapene carolina*), Cooper's hawk (*Accipiter cooperii*), and sharp-shinned hawk (*Accipiter striatus*). The existing habitat available on the site for box turtles is limited in quality by potential mortality from mowers in maintained lawn areas and vehicles in roadways and parking areas. The proposed action will result in a loss of this poor-quality habitat for box turtles and a further degradation of habitat quality in the habitat patches that will remain in Lot 8 due to construction of additional paved surfaces (and resulting vehicle traffic) adjacent to the remaining habitat patches.

The eastern box turtle (*Terrapene carolina*) would be expected to be found in any of the vegetated upland habitats on-site including the successional southern hardwoods, successional old fields, mowed lawn areas (with and without trees), and overgrown hedgerows. While box turtles are expected to be present on the site, several potential

threats to box turtles limit the on-site habitat quality for this species including mowing of the fields and lawns and mortality from cars on the site's roads and parking areas.

The proposed subdivision and development on Lots 4 through 9 will result in a loss of foraging habitat and degradation of habitat quality for Cooper's hawk (*Accipiter cooperii*) and sharp-shinned hawk (*Accipiter striatus*) although these species will likely continue to hunt the human-tolerant songbirds and doves that will utilize the developed properties and their landscaped borders.

6.9. Proposed Mitigation

Potential mitigation measures to reduce environmental impacts associated with the proposed subdivision and development on Lots 4 through 9 could include the following:

- Incorporation of the large existing trees around the edges of the mowed lawn areas into the proposed development and landscaping plan to the maximum extent practical.
- Increasing the habitat quality provided in the undeveloped portions of Lot 9 and the proposed buffer area surrounding the eastern pond by management of invasive species and/or either planting of native trees (to facilitate the development of a native forest community) or establishment of a meadow habitat dominated by native grasses and wildflowers.
- Use of native plant species in the site's landscaped areas to the maximum extent practical.

7. Groundwater

7.1. Existing Conditions

Long Island's water supply comes from groundwater beneath the earth's surface from one of four geological formations that comprise the Long Island Aquifer System. There are no Special Groundwater Protection Areas located within the site.

Groundwater mainly originates as precipitation that has percolated hundreds or thousands of feet though voids within the soil, eventually reaching down to the aquifers. The shallowest aquifer has the newest groundwater and the deepest aquifer has the oldest groundwater. The water table (below which, all material is fully saturated) over most of Long Island, including the Flowerfield property, is in the Upper Glacial Aquifer. Based on generalized infiltration flow diagrams, treated water recharged at this location is expected to reach the Magothy Aquifer. The Magothy Aquifer is approximately 100 to 500 feet below grade and consists of fine to coarse sand of moderate-to-high permeability, with interbedded lenses of silt and clay of low permeability. The Magothy Aquifer's hydraulic conductivity is approximately 50 feet/day in the horizontal direction and about 1.4 feet/day in the vertical direction (Frank & Cohen, 1972).

The Upper Glacial Aquifer is above the Magothy, extending for the first ±100 feet below grade. This formation is comprised primarily of glacio-fluvial sand and gravel, generally with greater water transmitting properties then the underlying deposits. The highly permeable material has a typical horizontal hydraulic conductivity (K) of approximately 270 feet/day and a vertical conductivity of approximately 27 feet/day (Frank & Cohen).

Both underlying aquifers have horizontally flowing groundwater, based on their significantly higher horizontal than vertical hydraulic conductivity.

Figure 7-1: Conceptual Diagram of Long Island Aquifers

Ground surface

Deeper groundwater	
	Upper Glacial Aquifer
	Magothy Aquifer (largest and holds the most water)*
	Raritan Clay: sections of this clay layer have permeable formations with groundwater
	Lloyd Aquifer (oldest water up to ±5,000 years old)

**Parts of the South Shore (does not pertain to Gyrodyne) also have minor aquifers between the Upper Glacial and Magothy Aquifers: the Jameco Aquifer and the Gardiners Clay layer.*

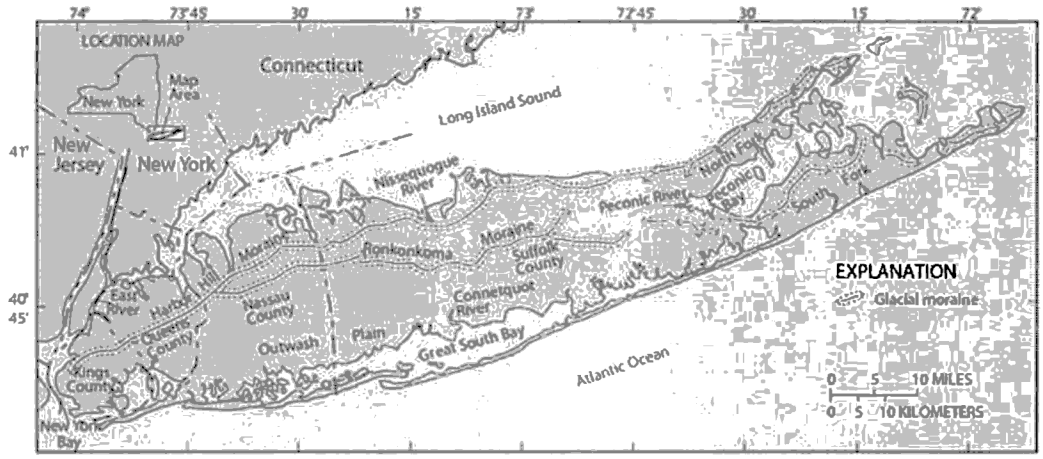
The Suffolk County Department of Planning[31] has mapped this property as part of Groundwater Management Zone VIII, which "encompasses the North Shore area of the towns of Huntington, Smithtown, and Brookhaven; this is also a shallow groundwater flow system." This zone is characterized by generally horizontal groundwater flow, as described below. Discharges into this system would contribute only to the shallow

[31] Suffolk County Comprehensive Plan 2035, Volume 1 Appendix B, Map 2 Hydrogeologic Zones

groundwater flow system, and therefore would not impact the deeper aquifers utilized for water supply. This flow system enters the North Shore bays, whose water quality is largely dependent on Long Island Sound.

The water table generally follows the same contours as the land surface. The highest points in the water table form a ridgeline called the "groundwater divide," which runs the length of Long Island along two moraines. The site is on the western edge of the Stony Brook Moraine, north of the Harbor Hill Moraine shown in Figure 7-2. The site lies north of the groundwater divide, and therefore the water that enters the groundwater in this area eventually migrates north towards Long Island Sound. The regional groundwater flow is towards the north-northwest, towards Stony Brook Harbor and Smithtown Bay.

Figure 7-2: USGS Map of Glacial Moraines on Long Island[32]



Public water supply wells draw their water, predominantly, from the Magothy, rather than the Upper Glacial, because the Magothy is less contaminated.

According to the 2018 SCWA *Drinking Water Quality Report's* Water Distribution Area Index, the site is in Distribution Area 15 which is north of Middle Country Road and east of Astor Avenue. This area's latest water quality tests of roughly 80 contaminants (inorganics, synthetic organics, and volatile organics) found levels above the stated threshold for just one element: iron. The average 70 ug/L reading, which represents the amount typically present in drinking water on any given day, is below the 300 ug/L threshold. An additional ±200 other contaminants were tested for but not detected at all.

According to the 2017 St. James Water District *Drinking Water Quality Report* (Spring 2018), the District complies with State regulations to test drinking water for over one hundred potential contaminants: total coliform, bacteria, turbidity, inorganic compounds, nitrate, nitrite, 26 metals including lead and copper, 85 volatile organic compounds, total trihalomethanes, and synthetic organic compounds which include 22 pesticides.

Of any detected contaminant during the most recent testing, none was found in high enough concentrations to exceed the corresponding action level.

[32] USGS Location map of Long Island and the generalized glacial moraines, accessed via https://www.usgs.gov/media/images/location-map-long-island-and-generalized-glacial-moraines.

Pumped water is adjusted with lime to a slightly alkaline pH of ±7.2 to reduce corrosion of water mains and in-house plumbing. Chlorine is added for disinfecting purposes. The District's water is not hard water, averaging 48 ppm.

In 2017, the District drew 588 million gallons of water (97% for individual users).

Every three years, the District performs lead and copper water sampling from specific houses chosen from those built prior to the 1982 Town-wide ban on lead solder; no home in the District is served with lead pipes. According to the District's 2017 *Drinking Water Quality Report*, no sample has ever exceeded the lead or copper Action Level Limits, including the most recent (2016) sampling.

Groundwater Depth

The closest United States Geological Survey (USGS) well to the site (Well S 42683.1) is located on Oxhead Road, approximately 600 feet east of Stony Brook Road (near Marion Avenue)[33]. The USGS recordings for this well date back to August 1972, with field-measured water depths ranging from 53.43 to 60.40 feet above the NGVD29 vertical datum. Since the reported surface elevation is 145.7 feet above NGVD29, this translates to groundwater depths of 85.3 to 92.27 feet below grade over a 45-year period.

Based on the topographic survey utilized in the Cameron Engineering Subdivision Plan, the existing grades on the Flowerfield property generally range from 140 feet to 160 feet, except for a small section near the "Fairgrounds" driveway on Route 25A at the northeast corner, where the grades slope down to ±120 feet. The property is at a higher overall elevation than the USGS well, and as shown in Figure 7-3 on page 7-4, groundwater is deeper beneath the Flowerfield property than at the nearest USGS well. The two colors in Figure 7-3 reflect a minimum depth to groundwater of 101 feet, to a maximum in the range of 126-150 feet below the surface.

[33] USGS National Water Information System: Web Interface. Site Map for New York. Well Reference: USGS 405335073073201 S 42683.1. accessed on May 22, 2017 via https://nwis.waterdata.usgs.gov/ny/nwis/gwlevels?site_no=405335073073201

Figure 7-3: Groundwater Map[37]

[37] USGS Long Island Depth to Water Viewer accessed at https://ny.water.usgs.gov/maps/li-dtw10/

Groundwater Travel Time

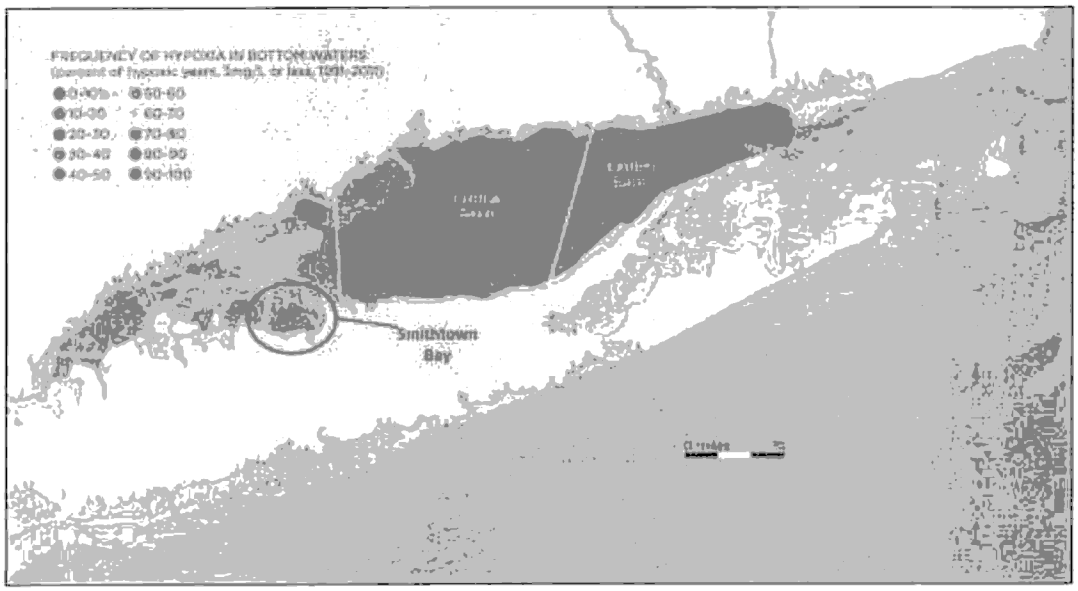
According to the 2015 Suffolk County Comprehensive Water Resources Management Plan model of groundwater travel time to the nearest major surface water interface, groundwater below most of the Flowerfield site will reach the Stony Brook Harbor in the range of 10 to 25 years. The southwestern portion of the property is in the longer 25 to 50 year travel time zone. See Figure 7-4 on the next page.

Figure 7-4 Page 7-6

Stony Brook Harbor/Smithtown Bay

There is much interest in the overall waste loading and in particular the nitrogen loading to groundwater. Groundwater flow from the site is generally to the northwest towards Stony Brook Harbor with the majority of the site having a travel time range of 10 to 25 years as per the most recent available Suffolk County GIS-based groundwater model.[35] The remaining balance of the site includes an area in the southwestern portion of the site showing 25 to 50 year travel time and a very small portion within the 2 to 5 year range. The Stony Brook Harbor/West Meadow Creek (1702-0047) is classified as an impaired waterbody; however it is not currently listed on NYS Section 303(d) List of Impaired/TMDL Waters. As per the NYSDEC website for impaired waterbodies, the sources of pollutants for Stony Brook Harbor/West Meadow Creek are identified as urban/stormwater runoff and other (boat pollution). Typically, excess nitrogen has been identified as contributing to hypoxia events within embayment areas along Long Island Sound per the NYSDEC information. Long Island Sound Study (LISS) maps indicate a hypoxic area in Smithtown Bay.

Figure 7-5: Frequency of Hypoxia in Bottom Waters (LISS)



LISS has specifically discussed this location, with "the primary driver of hypoxia in this case is a reduction of water circulation, which is a physical process" (longislandsoundstudy.net). The lack of circulation, due to the small opening available for water exchange (between Cranes Neck on the east and Eatons Neck on the west), creates a stratification during the summer (warm fresh water floats above the cold saltier water) and "seals off the bottom water from access to oxygen from the surface… it is possible that this lack of circulation also traps nitrogen and organic matter from [the Kings Park] sewage

[35] Comprehensive Water Resources Management Plan for Suffolk County, Task 15 – Groundwater Contributing Area Assessment, accessed at: http://www.suffolkcountyny.gov/Departments/HealthServices/EnvironmentalQuality/WaterResources/ComprehensiveWaterResourcesManagementPlan/Task15.aspx

treatment plant or other natural and/or human induced causes" (longislandsoundstudy.net). These variables make Smithtown Bay more sensitive to nitrogen loading (Swanson et. al, 2016) and "is an excellent example of how physical factors beyond our control can contribute to, or even cause hypoxia… there are many historical accounts of hypoxia in areas with poor circulation and high stratification from before large scale human influence on our estuaries began, but there is also no doubt that increases in human induced nutrient load from sewage treatment plants and fertilizers is a major contributor to the problem" (longislandsoundstudy.net).

LISS, CT Sea Grant and NY Sea Grant funded a study at University at Connecticut (2013-2015), based on the research of Dr. Vaudrey36. An interactive model was created that calculated the Total Nitrogen Load to each of the embayments in the Long Island Sound. The model calculates the Total Nitrogen Load at Stony Brook Harbor at 27,777 kg N/yr.

Fertilizers

Fertilizer use on the project site is currently applied to the turf (managed landscape) portion of the property that comprises approximately 6.8% of the site. Under proposed conditions, this managed area increases to approximately 12.2%. Fertilizer applications will comply with all applicable laws regarding timing and application rates. The application rate used in the following BURBS model follows Suffolk County's Best Management Practices (BMPs) of 2.0 lbs. N per 1,000 sf per year.

Water Balance

Based on water bills from November 2015 to November 2016 provided by representatives of Gyrodyne and the existing catering hall, the site currently utilizes an average of ±8,633 gallons per day:

- Gyrodyne (Lot 1) has 3 meters which measured 141,000 cubic feet utilized over the 12-month period from November 16, 2015 to November 16, 2016 (366 days, since 2016 was a Leap Year). This equates to an average rate of 385.25 cubic feet (cf) per day, or 2,882 gpd.
- Flowerfield caterer (Lot 2) has 4 meters, 3 of which are used; the fourth has no flow measured for this time period. The total flow measured 209,906 cubic feet utilized over the 9-month period from August 11, 2016 to May 11, 2017 (273 days). This equates to an average rate of 768.89 cubic feet per day, or 5,751 gpd.

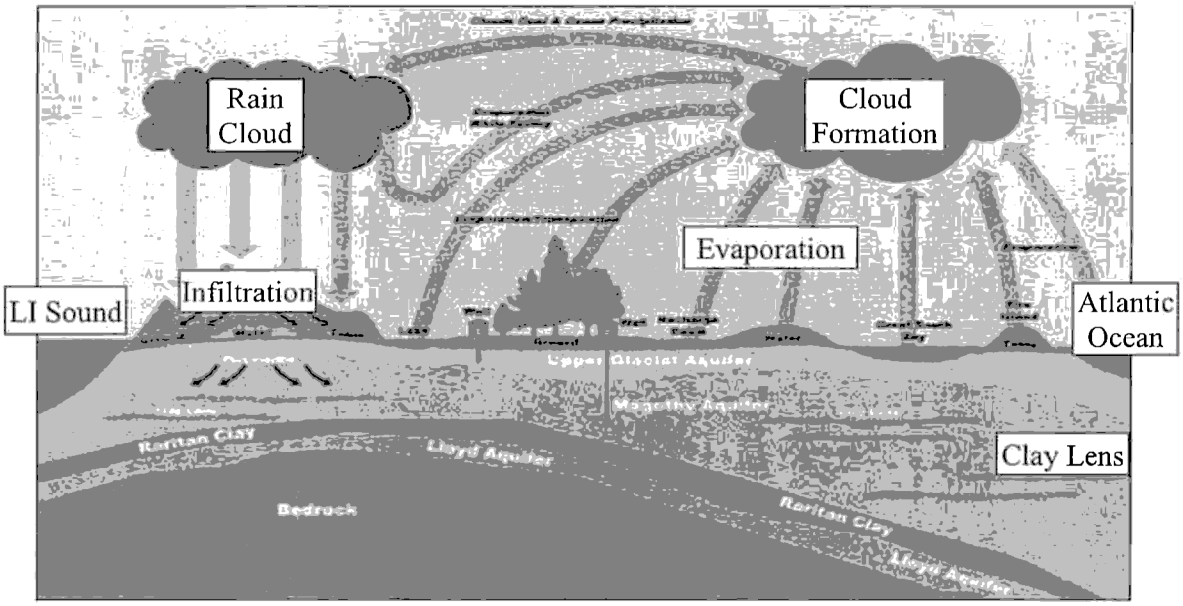
These values are lower than Suffolk County standard usage rates, therefore these values have not been used in the future allocation analysis.

Water balance describes the water cycle, which is the flow of water into and out of a system. Most, but not all, rain that falls eventually recharges the groundwater. Recharge losses are comprised of evapotranspiration and overland runoff:

Recharge (R) = Precipitation (P) – (Overland runoff + Evapotranspiration)

[36] Vaudrey, J. et al, *Nitrogen Loading to Long Island Sound Embayments, Comparative analysis and model development for determining the susceptibility to eutrophication of Long Island Sound embayments*, accessed via http://uconnclear.maps.arcgis.com/apps/webappviewer/index.html?id=aa59948c53f744b2ad2b9d2c0e170b71

Figure 7-6: The Water Cycle on Long Island[37]

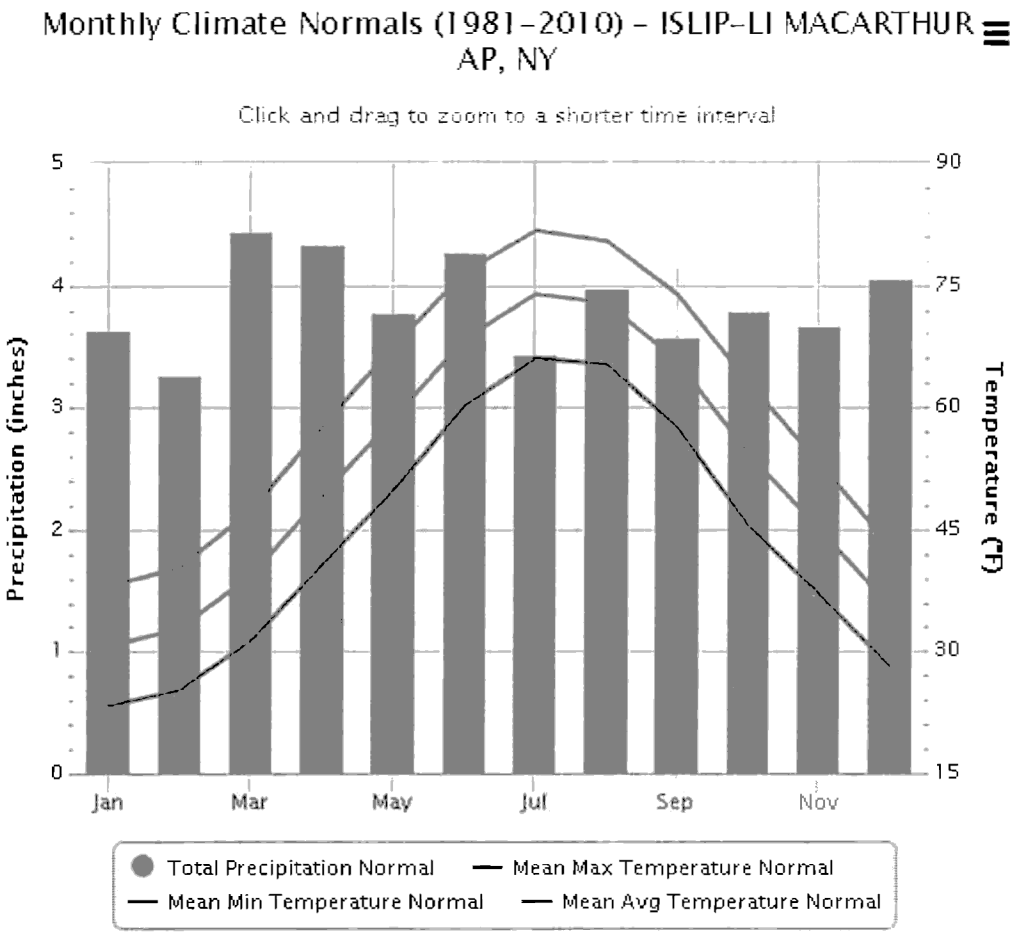


Water balance typically varies with the season. Positive water balance refers to when precipitation exceeds evaporation; it creates a water surplus when ground stores fill with water (resulting in increased surface runoff, higher discharge, and higher river levels). When evaporation exceeds precipitation, plants absorb water, ground stores are depleted, and it creates a water deficit.

As shown in Figure 7-7, precipitation is designated by the green bars and tends to peak in spring and early summer, with a lower peak in late fall/early winter.

[37] Suffolk County Water Authority *2018 Drinking Water Quality Report* for January 1, 2017 to December 31, 2017.

Figure 7-7: National Weather Service data for Islip Area, 1981-2010[38]



Wastewater Treatment

Wastewater discharge is regulated by Suffolk County Sanitary Code, Article 6[39], which permits single-family residential development in Zone VIII to have 600 gallons per day per acre. This is the equivalent of two single family residences per acre, based on the County's determination of 300 gallons per day per single family residence. The procedure for determining if the site requires additional wastewater treatment is accomplished by calculating the density load. Additional wastewater treatment would produce a lower total nitrogen concentration, maintaining groundwater integrity. If the density load of the proposed project exceeds the allowable density based on the site's area, additional wastewater treatment will be necessary. With a total project area of 74.98 acres, subtracting 2.02 acres of wetlands/pond, the density flow of 43,776 gallons per day (gpd) would be allowed with the use of a conventional on-site wastewater treatment system (OWTS).

[38] National Weather Service Forecast Office data accessed at http://w2.weather.gov/climate/xmacis.php?wfo=okx
[39] Suffolk County Sanitary Code Revised November 2011; Article 6: Realty Subdivisions, Developments, and Other Construction Projects, accessed via http://suffolkcountyny.gov/Departments/HealthServices/DocumentsandForms.aspx#dltop

In addition to density load, some structure uses also include a kitchen/gray load (ex. wastewater generated from food preparation and service areas, dishwashers, clothes washers). The total hydraulic load is calculated by adding the density load and the kitchen/gray load. Suffolk County has distinguished the difference between density load and total hydraulic load for structure uses typical to the area and they will add new values as needed. The required wastewater treatment system, whether a conventional OWTS or a Sewage Treatment Plant, is sized based on the total hydraulic load.

Regarding restaurants and/or food preparation establishments, Suffolk County requires pre-treatment of the kitchen/gray load in the form of a grease trap. The grease trap, when properly maintained, promotes the separation of fats and greases. It has been documented by NYS[40] that gray water (excluding the fats, oils and greases) typically has a low nitrogen concentration compared to a typical sanitary wastestream. This concept concurs with the Suffolk County Department of Health Services density load calculation. According to these sources, the majority, if not all the nitrogen loading is present in only the density load, not the kitchen/gray load. Therefore, when determining the nitrogen contribution from wastewater sources, only the density loads will be used in that calculation for on-site wastewater treatment systems (OWTS). As described in the Water Balance section, for this project (existing and proposed conditions), wastewater is recharged on-site. Therefore, while the kitchen/gray water flow is not part of the nitrogen contribution calculation for OWTS, it is part of the water recharge calculation.

As shown in Table 7-1 on the next page, the projected density flow is above the 43,776 gallons per day (gpd) threshold, requiring a sewage treatment plant (STP) to maintain groundwater integrity.

Using the required daily flow values for each subdivision use, the total projected density flow is 76,523 gallons per day (gpd) compared to 12,823 gpd associated with existing uses.

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[40] NYS Design Standards for Intermediate Sized Wastewater Treatment Systems, Page D-25 (see page J-35)

Table 7-1: Projected Wastewater Flow

Structure Use	Quantity/Size	Density Load Rate	Density Flow (gpd)	Kitchen/Gray Load Rate	Kitchen/Gray Flow (gpd)	Hydraulic Load/ Wastewater Flow (gpd)
Existing Uses						
Existing Industrial Park						
Industrial (no process water)	35,715 s.f.	0.04 gpd/s.f.	1,429			1,429
Retail (Wet Store w/ Food)	750 s.f.	0.03 gpd/s.f.	23	0.12 gpd/s.f.	90	113
Non-Medical Office	23,123 s.f.	0.06 gpd/s.f.	1,387			1,387
Medical Office	2,817 s.f.	0.10 gpd/s.f.	282			282
Fitness Center w/ showers (Over 5,000 S.F.) (no food service)	15,491 s.f.	0.10 gpd/s.f.	1,549	0.20 gpd/s.f.	3,098	4,647
Fitness Center (Under 5,000 S.F.) (no food service or showers)	3,469 s.f.	0.10 gpd/s.f.	347			347
School-shops and other vocational (50 s.f./occupant[1]=184 occupants)	9,175 s.f.	5.00 gpd/occupant	920	2.50 gpd/occupant	460	1,380
Exhibition Space-w/o mtg rooms (30 s.f./occupant[1]=71 occupants)	2,130 s.f.	0.03 gpd/s.f.	64	2.50 gpd/occupant	178	241
Occupy Existing Vacant Space						
50% Non-Medical Office	18,534 s.f.	0.06 gpd/s.f.	1,112			1,112
50% Industrial (no process water)	18,534 s.f.	0.04 gpd/s.f.	741			741
Existing Catering (874 seats)	874 seats	5.00 gpd/seat	4,370	2.50 gpd/seat	2,185	6,555
Single Family Homes on Existing Catering Lot	2 homes	300.00 gpd/home	600			600
Total Flow of Existing Uses (gpd)			**12,823**		**6,011**	**18,834**
Proposed Uses						
Hotel						
150 rooms (>400 s.f. gfa w/o kitchenette)	150 rooms	150.00 gpd/room	22,500			22,500
5,000 s.f. restaurant (150 seats)	150 seats	10.00 gpd/seat	1,500	20.00 gpd/seat	3,000	4,500
15,000 s.f. Conference Space (500 seats, no food service)	500 seats	3.00 gpd/seat	1,500			1,500
10,000 s.f. Day Spa/Fitness (w/showers, no food service)	10,000 s.f.	0.10 gpd/s.f.	1,000	0.20 gpd/s.f.	2,000	3,000
Tech/Medical Office	130,000 s.f.	0.10 gpd/s.f.	13,000			13,000
Assisted Living	220 beds	110.00 gpd/bed	24,200			24,200
Total Flow of Proposed Uses (gpd)			**63,700**		**5,000**	68,700
Total Flow (gpd):			**76,523**		**11,011**	**87,534**

[1] Table 1004.1.2 IBC 2015 https://codes.iccsafe.org/content/IBC2015/chapter-10-means-of-egress

Proposed Sewage Treatment Plant (STP) Siting

A sewage treatment plant (STP) would be provided in an enclosed building, in the location depicted in Figure 7-4, with an underground leaching field on the northeastern portion of Lot 9. Due to the STP's location in the 10-25 year groundwater travel time to surface waters, Stony Brook Harbor, the proposed 0.1 MGD STP will include nitrogen removal that reduces the STP's effluent nitrogen concentration to 7 mg/L, which is below the New York State groundwater discharge standard limit of 10 mg/L to adhere to SCDHS Guidance Memorandum #28[41]. A copy of this memorandum is included in Appendix J, starting on page J-17. This will reduce the amount of nitrogen loading to the groundwater which ultimately flows to Smithtown Bay as compared to existing conditions (see Section 7.3, Proposed Mitigation).

Within SCDHS Guidance Memorandum #28, the applicant must demonstrate the reduction of nitrogen mass loading by the proposed project as compared with the as-of-right mass loading that complies with the density requirements of Article 6 (as noted in the previous section of this report). The memorandum also directs the applicant to use the total nitrogen concentration of 50 mg/L when calculating the equivalent mass loadings. Below are the equivalent total nitrogen mass loadings for: existing, as-of right, and proposed conditions, calculated as per SCDHS Guidance Memorandum #28.

- *Existing Nitrogen Loading from wastewater (density loadings):*
  0.012823 MGD x 50 mg/L x 8.34[42] (conv. factor) = 5.35 lbs/day of Total Nitrogen
- *As-of-right Buildout Nitrogen Loading (OWTS):*
  0.043776 MGD x 50 mg/L x 8.34= 18.25 lbs/day of Total Nitrogen
- *Proposed Action Nitrogen Loading (Projected Flow-density loadings):*
  0.076523 MGD x 7 mg/L x 8.34 = 4.47 lbs/day of Total Nitrogen

This reduction of Total Nitrogen from "As of Right" Buildout compared to the Proposed Action is significant, ±76%. This comparison does not include additional downstream reductions in nitrogen as the treatment system's effluent enters the soil and as it traverses through groundwater. These additional reductions will be taken into consideration when discussing the project's nitrogen loading in its entirety, in the next section. There has also been recent research and analysis of existing on-site wastewater treatment systems (OWTS) to suggest the OWTS is less effective at removing nitrogen than once thought, which will also be discussed.

The proposed STP will maintain the required setback of the Suffolk County Department of Health Services (SCDHS). It will include adequate ventilation, with noise and odor control due to its proximity to off-site residential structures and to potential assisted living units on Lots 7 and 8. The proposed STP will be designed to meet or slightly exceed SCDHS and SCDPW design criteria and the design criteria set forth by Ten State's Standards

[41] Suffolk County Department of Health Services General Guidance Memorandum #28: Guidelines for Siting proposed or expanded Sewage Treatment Plants, July 2017. See Appendix J page J-14.
[42] A typical wastewater conversion rate of 8.34 has been applied to simplify the formula converting mg/L to lb/day or vice versa

(Recommended Standards for Wastewater Facilities). Additional design considerations for the proposed STP are detailed in Section 7.5 below on page 7-21.

The closest public drinking water wellfield is located greater than 1,500 feet to the southeast of the proposed STP and effluent discharge area and is operated by SCWA. This separation distance meets SCDHS requirements.[43] The proposed STP and effluent discharge are not located in the capture zone of this wellfield.

Since the project is located within an area where public water is available through the SCWA and the St. James Water District (see Appendix B, page B-36), the St. James Water District has indicated that there are no private drinking water wells in the area. The BB&GG Nursery located on Route 25A may have a private well that is used for irrigation purposes only, similar to the well on Gyrodyne's site (based on a phone call with Superintendent Nustad of the St. James Water District, June 2018, referenced in Appendix B, page B-35).

The applicant has requested confirmation from the Water District regarding water availability, shown in Appendix B, pages B-32 through B-34.

Nitrogen Loading

Cameron Engineering evaluated the expected nitrogen loading to groundwater for each Alternative, including under existing conditions (no subdivision, existing uses continue to utilize individual conventional on-site wastewater treatment systems, OWTS), and the proposed subdivision development, using the BURBS model. The BURBS model, developed at Cornell University by Hughes et al. (1985), is a computer simulation program that computes a development's potential impact on groundwater within a community due to nitrogen. The below BURBS computations depict the existing conditions and the proposed action.

The BURBS model predicts an estimate of nitrogen recharged to groundwater while it calculates loadings from wastewater, turf, natural land, atmospheric deposition, and runoff from impervious surfaces. Aspects of the BURBS model have been updated, as there has been continued research and development in these areas. The entire analysis is in Appendix J (starting on page J-1) and is summarized in this section.

The BURBS model predicts nitrogen leached to groundwater independent of land area (pounds of Nitrogen per acre per year). Multiplying each component by the corresponding acreage yields the calculated "pounds of nitrogen per year." The parameters/assumptions used in the BURBS model include:

1. Fraction of land in turf (maintained lawn)
2. Fraction of land which is impervious (roofs, driveways, roads)
3. Wastewater Amount (Density load for Alternatives with OWTS or STP Capacity for Alternatives with proposed STP, as calculated with SCDHS values)

3a. Wastewater Amount-Kitchen/Graywater (for Alternatives with OWTS, as calculated with SCDHS values)

[43] Suffolk County Department of Health Services General Guidance Memorandum #28: Guidelines for Siting proposed or expanded Sewage Treatment Plants, July 2017.

4. Precipitation rate (annual average in inches: 49.90 inches/year based on NOAA yearly precipitation quantities in Brookhaven, Long Island)
5. Irrigation rate (inches on turf land only, 400 gallons per minute, one inch per week, for 16 weeks, yielding 16 inches/year)
6. Water recharged from turf (39.92 inches per year, using Evapotranspiration Rate (ET) of 25.98 inches measured at LaGuardia Airport (LGA) and including irrigation of 16 inches per year[44])
7. Water recharged from natural land (23.92 inches per year)
8. Evaporation from impervious surface (10%)
9. Runoff from impervious recharged (90%)
10. Home water use per person (100 gallons)[45]
11. Nitrogen concentration in precipitation (0.86 mg/L)[46]
12. Nitrogen concentration in water used (4.65 mg/L)[47]
13. Turf fertilization rate (2.0 pounds Nitrogen/1,000 s.f. of turf)
14. Fraction of nitrogen leached from turf (35%)[48]
15. Fraction of wastewater nitrogen lost as lost as it traverses through groundwater[49] (10%)
16. Wastewater fraction removed by STP or OWTS including leaching pools-nitrogen concentration (10% for OWTS[50]; 90% with STP)[51]

16a: Wastewater fraction removed by sewer-quantity (0% existing and proposed, recharge for both remains on-site)

17. Nitrogen per person per year in wastewater for residential only developments (average of 9.25 lbs./person/day)[52]

17a. Nitrogen concentration in influent wastewater for mixed-use developments (65 mg/l)[53]

18. Nitrogen removal rate of natural land (90%)

Under existing conditions, the existing buildings would remain and would continue to use conventional on-site wastewater systems comprised of septic tanks with leaching pools. Natural land appears to be the largest contributor of water recharged with 48.4% and turf is the least at only 8%. This outcome corresponds with information provided by the Gyrodyne and their tenants regarding the area of managed turf. The vast majority of the undeveloped portion of the property does not receive fertilizer and is natural land.

[44] ET rate at LGA airport
[45] Based on 10 States Standards
[46] Derived from the National Atmospheric Deposition Program NTN Site NY96 – Cedar Beach, Southold, NY.
[47] Suffolk County Water Authority (SCWA) 2018 Water Quality Report – Distribution Area 15, p.43.
[48] Recommendation for sandy soil if clippings are removed and based on Long Island studies & soil properties.
[49] Recommendation from Gobler at SUNY SOMAS, LINAP as described in 2017 report Quantifying Nitrogen Loading From Southampton Village to Surrounding Water Bodies and their Mitigation by Creating a Sewer District
[50] See BURBS Model-Wastewater Component Background Section
[51] STP Influent Total Nitrogen Concenration: 65 mg/L, STP Effluent Total Nitrogen Concentraion: 7 mg/L additional 10% removal in leaching pools=6.3 ((65 mg/L)-(6.3 mg/L))/(65 mg/L) = 0.90 = 90% removal
[52] US EPA: the range is 4.8 to 13.7 pounds of nitrogen per person per day; 9.25 is the average.
[53] Suffolk County design value for influent total nitrogen concentration for new sewage treatment plants in mixed use developments

The model also calculates wastewater as the main source of nitrogen recharge (83%). Throughout the time between the development of BURBS and present day, numerous studies have been conducted, specifically for Long Island, to determine the reduction rates within the septic tanks, within the leaching pools, and as groundwater traverses through the aquifer. The nitrogen removal efficiencies are based on the work performed by Dr. Christopher Gobler, PhD of the Stony Brook University Center for Clean Water Technology[54]. For these models a value of 58.5 mg/L was used for effluent concentration from the OWTS (septic tank and leaching pool), which calculates a 10% Total Nitrogen (TN) removal efficiency, based on an influent concentration of 65 mg/L. A 10% Total Nitrogen removal efficiency was used as additional reduction for nitrogen within the aquifer. The complete results for existing conditions are presented in Table 7-2 below.

Table 7-2: Existing Conditions BURBS Modeling Results

	Area	Water Recharged		Nitrogen Leached	
	acres	inches/year	Percent	lbs/acre/year	Percent
Turf	5.1	2.7	8.0%	2.7	8.2%
Natural Land	51.01	16.3	48.4%	0.7	2.1%
Wastewater	-	3.4	10.1%	27.4	83%
Impervious	18.87	11.3	33.5%	2.2	6.7%
Total:	74.98	33.7	100%	33.0	100%

The model calculated an average nitrogen concentration in recharge of 4.32 milligrams per liter and total nitrogen leached of 33.0 pounds per acre per year (2,474 lbs/yr). The amount of water recharged was calculated as 68.61 Million gallons per year (Mgal/yr).

7.2. Potential Impacts of Proposed Subdivision

Impacts to groundwater include those related to withdrawals and others related to infiltration. This project would result in increased withdrawal of groundwater. The project is located within the St. James Water District. Water consumption is estimated to be a maximum of 87,534 gallons per day (gpd), plus irrigation.

A letter requesting water availability was forwarded to the St. James Water District on May 23, 2017 and a letter received from the St. James Water District on June 18, 2018 (page B-36) indicates that the District has existing water mains on Route 25A (12-inch water main) and Mills Pond Road (8 and 12-inch water mains). The letter states that due to the presence of this existing infrastructure, a water main extension would not be necessary. A follow-up letter was sent on April 19, 2019 to confirm that the District has adequate capacity to serve the potable needs of the project (Appendix B: Correspondence pages B-32 through B-34).

One existing well on the property can be utilized for common area irrigation and dry-weather water level pond maintenance, as currently occurs. The irrigation system in the

[54] "Quantifying Nitrogen Loading from Southampton Village to Surrounding Water Bodies and Their Mitigation by Creating a Sewer District" February 2017, Christopher J. Gobler, PhD, Stony Brook University School of Marine and Atmospheric Sciences. See Appendix J page J-27.

common-owned Lot 9 would only operate seasonally (expected from May through August), and could be connected to moisture sensors so that the system would not be active during periods of rain.

The results of the BURBS nitrogen loading model for the proposed action indicates that the proposed subdivision's impervious runoff and wastewater would be the main sources of water recharge and wastewater would be the main source of nitrogen recharge. There is minimal nitrogen recharge from natural land, and a substantial increase of water recharge for wastewater. The subdivision includes a proposed on-site wastewater treatment plant (STP), described below in Sections 7.3 and 7.4, which includes STP discharge to leaching pools prior to the STP effluent traversing through groundwater. Even though the amount of water used and recharged will increase greatly with the proposed action, the proposed STP will decrease the nitrogen contribution.

Table 7-3: Proposed Conditions BURBS Modeling Results

	Area	Water Recharged		Nitrogen Leached	
	acres	inches/year	Percent	lbs/acre/year	Percent
Turf	9.13	4.9	9.1%	4.8	14.8%
Natural Land	30.01	9.6	17.8%	0.4	1.2%
Wastewater	-	17.9	33.2%	23.0	71.0%
Impervious	35.84	21.5	39.9%	4.2	13.0%
Total:	74.98	53.9	100%	32.4	100%

The model calculated an average nitrogen concentration in recharge of 2.65 milligrams per liter and total nitrogen leached of 32.4 pounds per acre per year (2,429 lbs/yr). The amount of water recharged was calculated as 109.73 million gallons per year (Mgal/yr).

The nitrogen contributions under existing and proposed conditions, 33.0 and 32.4 lbs/acre/year respectively, equal 1,122 and 1,102 kg/yr, respectively. As compared to the Univerity of Connecticut (UCONN) model results for Stony Brook Harbor (27,777 kg N/yr)[36], this site represents approximately 4% of the nitrogen contribution under the existing and the proposed conditions.

Table 7-4: Summary of BURBS Modeling Results for all Alternatives - Nitrogen Contribution

Nitrogen Contribution lbs/acre/year	Existing	Proposed Action	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8	Alt. 9	Alt. 10
Turf	2.7	4.8	4.2	4.2	4.1	3.6	4.7	3.2	4.8	4.8	4.8	5.4
Natural Land	0.7	0.4	0.4	0.4	0.4	0.4	0.4	0.6	0.4	0.4	0.4	0.4
Wastewater	27.4	23.0	23.0	23.0	23.0	79.6	60.1	27.4	23.0	23.0	39.4	23.0
Impervious Runoff	2.2	4.2	4.1	4.1	4.2	4.0	4.2	2.2	4.1	4.2	4.2	4.2
Total	33.0	32.4	31.7	31.7	31.7	87.6	69.4	33.4	32.3	32.4	48.8	33.0

Figure 7-8: Summary of BURBS Modeling Results for All Alternatives - Nitrogen Contributions

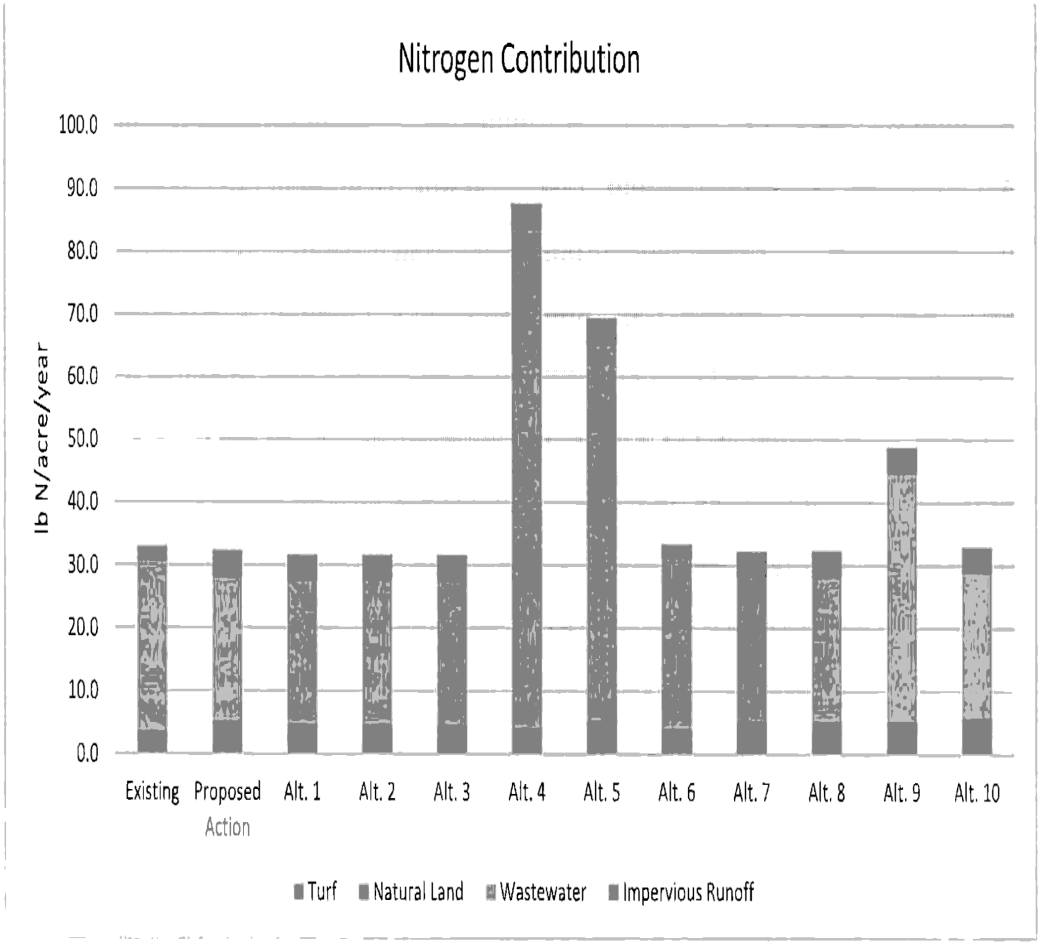
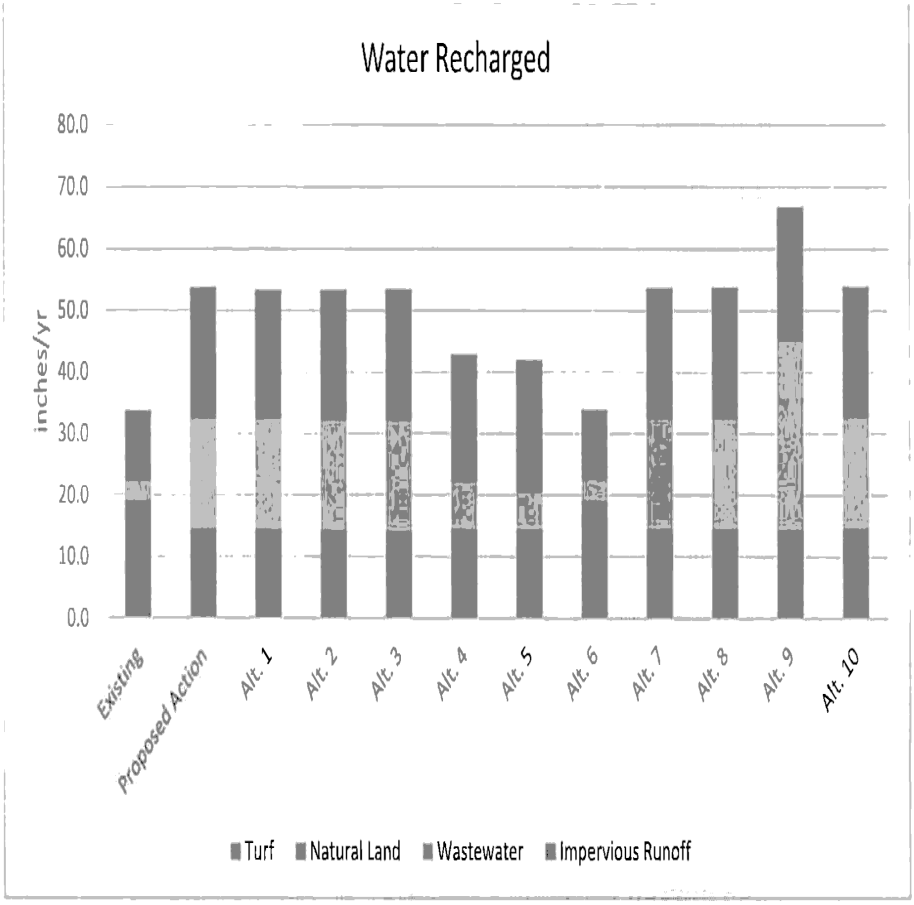


Table 7-5: Summary of BURBS Modeling Results for all Alternatives -Water Recharged

Water Recharged inches/year	Existing	Proposed Action	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8	Alt. 9	Alt. 10
Turf	2.7	4.9	4.2	4.2	4.1	3.7	4.7	3.2	4.8	4.9	4.9	5.4
Natural Land	16.3	9.6	10.2	10.1	10.0	10.7	9.7	16.0	9.7	9.6	9.5	9.3
Wastewater	3.4	17.9	17.9	17.9	17.9	7.8	6.1	3.4	17.9	17.9	30.7	17.9
Impervious Runoff	11.3	21.5	21.1	21.2	21.5	20.7	21.5	11.3	21.3	21.5	21.6	21.4
Total	33.7	53.9	53.4	53.4	53.5	42.9	42.0	33.9	53.7	53.9	66.7	54.0

Figure 7-9: Summary of BURBS Modeling Results for All Alternatives - Nitrogen Contributions



7.3. Proposed Mitigation

Potential impacts can be prevented/mitigated by reducing water demand and through stormwater treatment and filtration. The subdivision elements include the conservation of natural land, the incorporation of vegetated roadside swales to act as plant uptake and filtration, and a central landscaped island integrated in the cul-de-sac. Conserving natural land minimized the area to which fertilizer would be applied.

Water conservation methods would reduce consumption of public water. On-site groundwater withdrawals would be limited to irrigation. The irrigation system would be tied to moisture sensors and limited to the early morning to reduce unnecessary water consumption caused by evaporation losses. Wherever possible, areas of the property would be planted with drought-tolerant plants that require minimal or no irrigation.

Stormwater would be efficiently managed to maximize treatment prior to recharge. The stormwater management plan is designed to collect and recharge 100% of site runoff from a 5-inch storm. The stormwater management plan is described in detail in Section 8.3.

With the proposed subdivision in place, the proposed STP represents an improvement for the wastewater Total Nitrogen (TN) component as compared to existing conditions and the "As of Right" alternative.

7.4. Wastewater Collection System

Wastewater will be conveyed through a gravity collection system of plastic pipe with manholes designed in accordance with Suffolk County and Ten States' Standards requirements. Grease traps and lint traps will be installed as pretreatment prior to the gravity collection system where required and maintained by the appropriate entity. The majority of the existing buildings will be connected by gravity from their existing house connections. One exception will be the Flowerfield caterers which will require a pump station and force main to transfer their wastewater to the gravity portion of the sewage collection system. The pump station and force main design will be designed and approved by Suffolk County. The pump station will be located within the existing parking lot for the catering facility. The majority of the pump station is located underground with only the electrical appurtenances aboveground. The force main will discharge into the gravity collection system which ultimately reaches the influent pump station located adjacent to the STP. The influent pump station will be equipped with a non-clog style pump in lieu of chopper pumps. Chopper pumps reduce the size of solids in raw wastewater. Components of the size reduced wastewater include rags and non-dispersable materials (inorganic material) that tend reform downstream into larger deposits and "quilts". These "quilts" end up causing problems with pumps, valves, aeration tank diffusers and other the downstream process units. Increased maintenance and poor treatment performance can result.

7.5. Sewage Treatment Plant (STP) Additional Design Considerations

Future Regulations

While Suffolk County is currently underway generating a County-wide Subwatersheds Wastewater Management Plan (SC SWMP), final documents, data, modelling results and recommendations are not available in final form. In the preliminary documents available to the public, it appears that Gyrodyne's site will be included in the subwatershed for the Stony Brook Harbor/Smithtown Bay area. Once completed, the Plan will:
"develop its recommendations through a sequenced, technical based, approach using groundwater modeling to establish subwatershed boundaries for all of the County's priority waterbodies, nitrogen load modeling to estimate nitrogen loads to each subwatershed, surface water modeling to estimate surface water residence times, and the evaluation of existing water quality. The modeling results and water quality data will then be used to establish 'priority areas' for nitrogen reduction and to establish nitrogen load reduction goals for each priority area. Recommended wastewater upgrade alternatives capable of meeting the nitrogen load reduction goals that are established in the SC SWMP will then be evaluated using cost-benefit techniques."[55]

The ultimate waste allocation to Stony Brook Harbor should be reflective of the final Subwatersheds Management Plan results and may be applied to Gyrodyne STP in the future. As per Suffolk County Department of Health Services (SCDHS) requirements, 100% expansion area is reserved for expansion and/or replacement of the proposed sewage treatment facility and associated required effluent disposal facilities. This expansion area adjacent to the existing STP building could be available for additional treatment (if required) that could be designed to meet the nitrogen load reduction goals determined via the Suffolk County Subwatersheds Management Plan.

Proposed Suffolk County St. James Sewer District

There have been discussions with the Town of Smithtown regarding the ability of Gyrodyne to accept sewage flow from an area outside of Flowerfield's boundaries (St. James Business District/Lake Avenue) for treatment and disposal. As the projected flow from the proposed action is approximately 87,534 gpd, there would be an initial 12,466 gpd of excess capacity.

The proposed sewer district flow is estimated at 69,600 gallons per day, for a total flow of 157,134 gallons per day. Adding 8.5% to this value (for a cushion) results in a projected flow of 170,813 gallons per day. This value would be rounded up to 171,000 gallons per day. A preliminary engineering spatial evaluation of the current STP layout and associated leaching area could be expanded to 171,000 gpd to accommodate the St. James Busines District/Lake Avenue sewage flow. This is discussed further in the Alternative 9 assessment.

Architecture

Architecturally, the STP building will be CMU block construction and approximately 18' above grade. Final finishes will be determined by the owner during final design. The intent is to have the STP building architecture to reflect the styles and form typical of the

[55] Final Scoping Document GEIS Suffolk County Subwatersheds Wastewater Management Plan, February 2017

St. James area. Based on the proposed location and height of the STP, it is not anticipated to result in any visual impacts to the neighboring uses or those travelling on Route 25A.

Treatment Process

The treatment process will include headworks and flow equalization as well as primary, secondary, and tertiary treatment. This level of treatment will be achieved through the implementation of screens, Sequencing Batch Reactors (SBR), and disk filters. The Ultrascreen disk filter will achieve a higher quality effluent, which will be recharged to groundwater through a leaching field adjacent to the STP. As shown in Figure 7-4 above, the groundwater travel time on the eastern portion of the Gyrodyne site is less than 25 years. Since this is the area of the STP's effluent discharge, the STP will be designed to meet a lower total nitrogen effluent concentration of 7 mg/L on an annual average (typically the permitted sub-surface discharge limit for Total Nitrogen (TN) is 10 mg/L). The SBR technology is a familiar technology to Suffolk County and is capable of producing high quality effluent, specifically targeting low Total Nitrogen requirements. Also, the SBR manufacturer has designed the treatment process specific to meeting the TN goal of 7 mg/L at the STP building effluent discharge. An effluent Total Nitrogen concentration of 7 mg/L has been achieved at numerous wastewater treatment plants throughout Suffolk County. Referring to the 2016 SCDHS STP Report, published by Suffolk County, the technology to meet the 7 mg/L is available and effectively functioning throughout the County.[56]

"The average Total Nitrogen of all the 161 year-round tertiary facilities that were considered low risk was 5.3 mg/l. The average Total Nitrogen for all the 171 tertiary plants including the "high risk" and the seasonal plants in steady state was 5.95 mg/l. The average Total Nitrogen of all the 178 tertiary facilities including those NISS was 6.25 mg/l...The plants utilizing newer technologies such as SBR, modular aeration, BESST, and MBR have been showing steady performance and increased efficiency in treating wastewater compared to the older tertiary plants."

The STP will be operated and maintained by a contracted entity that must meet the effluent discharge limits and perform all normal operations and maintenance and emergency work.

Medical Waste

Since the subdivision includes assisted living units and medical offices, wastewater associated with these uses may present waste loadings that slightly differ from the other uses at the site. The assisted living facility and medical offices will follow applicable standards/protocols and relates to the relevant regulations of the NYSDOH and New York State Department of Transportation (NYSDOT, regarding transport of various types of wastes). These include, but are not limited to, Infectious (Regulated Medical) Wastes, Disposal of Sharps and Physical Hazard Wastes, Disposal of Chemical Wastes and Chemotherapeutic Wastes. Following these standards/protocols will limit most (if not all) of these wastes from contributing to the STP.

Source separation of adult diapers and wipes is the best management practice for these wastes. Requiring the facilities to remove wipes from their bathrooms and disposing of

[56] Office of Wastewater Management Report on the Sewage Treatment Plants of Suffolk County 2016 Performance Evaluation (https://suffolkcountyny.gov/Departments/Health-Services/WWM/WWM-Documents-and-Forms)

diapers and wipes with the solid waste is the best way to ensure they do not enter the wastewater. However, 100% compliance in this area is unlikely. Should these items enter the wastewater, the STP will be equipped with screening at the head of the plant to remove and bag them to be disposed of with the solid waste.

Pharmaceuticals

Pharmaceuticals that pass through the human body and enter wastewater have already been filtered by the kidney. The size and structure (chemical charge) of these pharmaceuticals present a challenge for removal from water. Pharmaceuticals in drinking water and wastewater-for-reuse employ several different filters and treatments to remove these harmful contaminants. These systems use multiple filters in series, to ensure the safety of drinking water. Wastewater standards, regarding the removal of these contaminants is not concurrent with drinking water standards. The effectiveness of the removal of pharmaceuticals in sewage treatment plants varies between different treatment processes as well as different pharmaceuticals. A treatment plant for the manufacturing of pharmaceuticals could be designed to target specifically those chemicals in certain physical states. The World Health Organization has conducted extensive literature reviews and concluded that the activated sludge process, similar to the proposed STP at this project, has a removal range of 11-99% for pharmaceuticals. The waste product of the activated sludge process is a thick sludge (biosolids) that harbors some of these contaminants. In this case the biosolids will be removed for the Gyrodyne facility and processed at a facility off-site (likely Suffolk County's Bergen Point facility). The proposed STP process will have a 30-day sludge age which will promote the degradation of certain pharmaceuticals.

As previously stated above, a 100% expansion area adjacent to the existing STP building will be available for additional treatment that could be designed to meet additional reduction goals, if required or install new technologies should they become available for treating pollutants of concern.

BURBS Model-Wastewater Component Background

Gyrodyne has prepared model runs (BURBS) for each of the potential alternatives put forth in this document. The BURBS model runs are included in Appendix J, starting on page J-1. BURBS model nitrogen loading from the time it enters either an on-site wastewater treatment system (OWTS) or a wastewater/sewage treatment plant (STP) and ultimately is discharged from the respective treatment system's last treatment unit. In this case, the last unit the wastewater enters can be the cesspool or a leaching pool. Downstream of either of these units is the soil followed by groundwater.

To provide some clarity on the nitrogen issue, information and guidance from regulatory agencies, scientific and peer-reviewed articles, and data from operating facilities were reviewed and analyzed. The information was categorized, and the value or factor was provided with the resource (email, article, technical paper, guidance document, etc.) that support the approach. As there is variation due to uncertainty and a lack of documentation within the scientific community on some of the values, the lower and upper ranges for nitrogen loading are given to provide the reviewer with a sense of the potential magnitude of the calculation.

The order of the discussion will be on influent nitrogen concentration in wastewater, followed by on-site wastewater treatment system (OWTS) removal performance, STP performance and lastly fate of nitrogen in soil and groundwater.

Influent Nitrogen Concentration

Influent nitrogen concentration is comprised of organic nitrogen, ammonia nitrogen, nitrite nitrogen and nitrate nitrogen. Suffolk County Department of Health Services and Suffolk County Department of Public Works both use a design factor (concentration) for wastewater treatment plants for influent total nitrogen concentration of 65 mg/L[57]. This concentration has been used for analyzing existing on-site wastewater treatment systems (OWTS) as well as for the influent design value for the new STP.

On-Site Wastewater Treatment System (OWTS) Removal Performance

There is much debate as to the efficacy of on-site wastewater treatment systems (OWTS) to reduce nitrogen. First it is important to discuss the components of an on-site wastewater treatment system (OWTS). As the Gyrodyne project is located in Suffolk County, it is important to note that approximately 76% of the County's population's wastewater is managed by on-site wastewater treatment systems (OWTS). On-site wastewater treatment systems (OWTS) installed prior to 1973 consist of cesspools with additional leaching pools added as the main cesspool leaching decreased. In 1973, the Suffolk County Department of Health Services enacted regulations that required the use of septic tanks for receipt of raw wastewater with downstream leaching pools in an amount commensurate with the flow. Cesspools have decidedly lower performance than septic tanks as in cesspools there is no separation of the solids from the liquid that exits the tank through its perforated sidewalls. The septic tank is a solid walled tank that is designed to settle solids and capture floatable materials (fats, oils and greases) while allowing effluent to continue downstream to leach out the sidewalls of the perforated leaching rings comprising the standard leaching pool. It is estimated that there is a greater quantity of cesspools than septic tanks within the County.

The Suffolk County Department of Health Services (SCDHS) has issued *General Guidance Memorandum #28 "Guidelines for Siting Proposed or Expanded Sewage Treatment Plants"* issued on July 24, 2017 (Reference No. 2 on page J-17) that provides guidance to design engineers and is an update and replacement to the Department's General Guidance Memorandum #1 – "Guidelines for Siting Sewage Treatment Plants and Other Disposal Systems" issued June 29, 2009. This document (page J-19) directs engineers to demonstrate that the mass nitrogen loading is reduced in comparison to a development that would comply with the Department's density requirements of Article 6 of the Sanitary Code. A designer is directed to use a Total Nitrogen (TN) concentration of 50 mg/L for such a comparison. The location of this Total Nitrogen concentration is at the point of discharge, prior to the effluent being dispersed into leaching pool and surrounding soil. Therefore, for a septic tank, leaching pool system, this concentration is after the septic tank prior to leaching structures.

[57] Suffolk County Department of Public Works – Division of Sanitation, "Non-Capital Project Design and Review Guidelines", February 10th, 2017. See Reference No. 1 on page J-14.

The New York State Department of Environmental Conservation (NYSDEC) sponsored a grant for Suffolk County Department of Health Services, the University of Stony Brook and the NYS Center for Clean Water Technology (CCWT) to conduct an extensive review of the County's Innovative/Alternative (I/A) OWTS program. The final report entitled "*2017 Annual Technology Review of Innovative/Alternative OWTS*" was published in December 2018 (Reference No. 3A, see page J-22). This grant allowed the Suffolk County Department of Health Services (SCDHS) and Center for Clean Water Technology (CCWT) to collect almost 200 samples from more than thirty-six (36) Innovative/Alternative (I/A) wastewater treatment systems. It was noted in this document that the average concentration of Total Nitrogen in a conventional on-site wastewater treatment system (OWTS) is 65 mg/L. This value was further confirmed in an *e-mail from Mr. Justin Jobin, Environmental Projects Coordinator dated January 14, 2019* (Reference No. 3B on page J-25) confirming that a typical on-site wastewater treatment system (OWTS) effluent concentration for Total Nitrogen is 65 mg/L and furthermore that both the United States Environmental Protection Agency (USEPA) and the University of Rhode Island OWTS Center (Mr. George Loomis-Director) use the 65 mg/L concentration for effluent Total Nitrogen from an OWTS.

Considering possible further reductions of Total Nitrogen downstream of the on-site wastewater treatment systems (OWTS), the Total Nitrogen loadings were assessed from the on-site wastewater treatment systems (OWTS) using both the SCDHS value of 50 mg/L (lower range) and the Center for Clean Water Technology (CCWT) value of 65 mg/L (upper range) Total Nitrogen (TN) concentration under several scenarios:

1. Existing Conditions at Gyrodyne (Density Flow Only)
   12,823 gallons per day @ 50 mg/L = 5.35 lbs. per day TN (lower range)
   12,823 gallons per day @ 65 mg/L = 6.95 lbs. per day TN (upper range)
2. As of Right build out – compliance with SCDHS Article 6, Commercial Standards
   72.96 acres @ 600 gallons per day per acre = 43,776 gallons per day allowance
   43,776 gallons per day @ 50 mg/L = 18.25 lbs. per day TN (lower range)
   43,776 gallons per day @ 65 mg/L = 23.73 lbs. per day TN (upper range)

Dr. Christopher Gobler, Director of the Center for Clean Water Technology, has performed extensive sampling, testing and modelling on the fate of nitrogen as it moves through each phase: on-site wastewater treatment system (OWTS), soil and groundwater. Additionally, he has worked with the Long Island Nitrogen Action Plan and has determined that additional reduction of Total Nitrogen after discharge from the on-site wastewater treatment system is on the order of 5-10% in each phase and not the 35% originally predicted in the Nitrogen Loading Model developed by Bowen, et al. 2007[58]. Based on discussions with the Lead Agency, the BURBS model with respect to nitrogen reduction once discharged from the septic tank uses Dr. Gobler's upper range of 10% for each phase downstream of the septic tank's discharge.

[58] Bowen, J. L., Ramstack, J. M., Mazzilli, S., & Valiela, I. (2007). NLOAD: an interactive, web-based modeling tool for nitrogen management in estuaries. Ecological Applications, 17(sp5), S17-S30

Calculations for additional Total Nitrogen (TN) reduction from the effluent discharged from the OWTS are as follows:

1. Existing Conditions (see prior calculations)
   a. Lower range of 5.35 lbs. per day TN reduced 10% in soil[54] = 4.82 lbs. per day reduced an additional 10% in groundwater[54] = 4.34 lbs. per day total TN
   b. Upper range of 6.95 lbs. per day TN reduced 10% in soil[54] = 6.26 lbs. per day reduced an additional 10% in groundwater[54] = 5.63 lbs. per day total TN
2. As of Right (see prior calculations)
   a. Lower range of 18.25 lbs. per day TN reduced 10% in soil[54] = 16.43 lbs. reduced an additional 10% in groundwater[54] = 14.79 lbs. per day TN
   b. Upper range of 23.73 lbs. per day TN reduced 10% in soil[54] = 21.36 lbs. reduced an additional 10% in groundwater[54] = 19.22 lbs. per day TN

Wastewater/Sewage Treatment Plant Performance

As Gyrodyne is not seeking an "As of Right" development in accordance with Article 6 SCDHS yield requirements limiting the flow to a maximum of 43,776 gallons per day, it is necessary to compare the discharge of Total Nitrogen from the proposed STP to that of the discharge of Total Nitrogen from the "As of Right" alternative. There has been much discussion on what value should be used for the Total Nitrogen of the effluent from the STP. Gyrodyne has anticipated the issuance of a SPDES permit having an effluent limitation for Total Nitrogen of less than 10 mg/L (10 mg/L is the current NYS Groundwater Discharge Standard). When discussing the likely effluent permit limitations of the Gyrodyne Sewage Treatment Plant with Suffolk County Department of Health Services (SCDHS), they have indicated that the formal review of the Gyrodyne subdivision will include the review of the project per Guidance Document #28 (page 3 of 4) that states under the Surface Waters category, *"The siting of STP discharges within the 0-25 year groundwater contributing areas to sensitive surface waters should be minimized to the extent feasible. However, when a STP is located within this travel time, the applicant shall provide an advanced treatment process that consistently reduces the total nitrogen concentration to the maximum extent practical. Also, SPDES permit conditions issued for these systems shall require the nitrogen goal to be significantly lower than 10 mg/L."*

Gyrodyne has selected a technology (Sequence Batch Reactor) with tertiary treatment (filter) and a vendor that has more than forty (40) systems currently operating in Suffolk County. Suffolk County Department of Health Services regularly monitors the performance of the wastewater treatment plants that discharge to groundwater. *The last published report (November 2017) entitled "Office of Wastewater Management – Report on the Sewage Treatment Plants of Suffolk County 2016 Performance Evaluation", prepared by Adhya & Olsen (Reference No. 5 on page J-30)* who made the following statements in the Executive Summary:

- *"The average TN of all 161 year-round tertiary facilities considered low risk was 5.3 mg/L with a 98.77% compliance rate."*
- *"Average TN of all 171 tertiary STPs including high risk and seasonal plants in steady state was 5.95 mg/L with a 95.3% compliance rate."*

- *"Average TN of all 178 tertiary STPs including those not in steady state was 6.25 mg/L with a 93.26% compliance rate."*
- *"This is significantly below the 10 mg/L which is typical the requirement of the NYSDEC and SCDHS"*

It is clear from the SCDHS extensive data base that the available technologies are more than capable of achieving Total Nitrogen below the 10 mg/L threshold. Additionally, it is reasonably expected that due to the travel time of the Gyrodyne site to Stony Brook Harbor that the Department will adhere to SCDHS Memorandum #28 and will issue a Total Nitrogen effluent limitation of less than 10 mg/L. The following calculations provide insight of the Total Nitrogen (TN) in the discharge from the proposed Gyrodyne STP building.

1. Design capacity of 100,000 gallons per day:
   a. Using 7 mg/L, effluent TN is 5.84 lbs. per day (low range)
   b. Using 10 mg/L, effluent TN is 8.34 lbs. per day (high range)
2. Additional Total Nitrogen removals in soil and groundwater (use same as for OWTS)
   a. Lower Range = 5.84 lbs. per day TN reduced 10% in soil = 5.26 lbs. per day TN reduced by 10% groundwater = 4.73 lbs. per day TN
   b. Upper Range = 8.34 lbs. per day reduced 10% in soil = 7.51 lbs. per day TN reduced by 10% groundwater = 6.76 lbs. per day TN

Additional Wastewater Flow from the St. James (Lake Avenue) Business District

Alternative 9 includes the possibility of the proposed STP receiving additional wastewater from the proposed St. James (Lake Avenue) Business District. This additional wastewater flow is projected at 69,600 gallons per day by the Town's consultant (page 19-10, "Alternative 9 Assessment"). Pages 19-10 through 19-12 designate a wastewater flow allocation of 71,000 gallons per day to the Gyrodyne STP from the St. James (Lake Avenue) Business District.

Assessing the Total Nitrogen (TN) loading currently being discharged from the St. James (Lake Avenue) Business District's existing on-site wastewater treatment systems (OWTS):

1. Using Guidance Memorandum #28 concentration of 50 mg/L for OWTS discharge, the TN loading is 71,000 gpd @ 50 mg/L = 29.61 lbs. per day
2. Using Center for Clean Water Technology measured value of 65 mg/L, the TN loading is 71,000 gpd @ 65 mg/L = 38.49 lbs. per day.
3. Both of the above values do not include potential additional reductions of TN through soil and groundwater (10% each step)

Additional Total Nitrogen loading to the Gyrodyne site was calculated should the proposed STP accept and treat the sewage flow from the off-site St. James (Lake Avenue) Business District.

4. Lower range = 71,000 @ 7 mg/L = 4.14 lbs. per day TN
5. Upper range = 71,000 @ 10 mg/L = 5.92 lbs. per day TN

6. Both of the above values do not include potential reductions of Total Nitrogen of effluent after discharge and passing through soil and groundwater (10% each step).

Table 7-6: Summary of Wastewater TN Loadings (lb/day)

	Lower Range		Upper Range	
	At point of discharge	After reductions in soil and groundwater	At point of discharge	After reductions in soil and groundwater
As of Right	18.25	14.79	23.73	19.22
Proposed STP (100,000 gpd)	5.84	4.73	8.34	6.76
Additional Sewage from St. James (Lake Avenue) Business District (71,000 gpd)	4.14	3.35	5.92	4.80
Proposed STP with St. James (Lake Avenue) Business District sewage flow (171,000 gpd)	9.98	8.08	14.26	11.56

These iterations were performed to demonstrate to the Town the estimated Total Nitrogen loadings that use the most current guidance and testing results values for comparative purposes. The Town's final recommendation for the BURBS model was to use 65 mg/L as the Total Nitrogen concentration from septic tank effluent flow. It was also the Town's recommendation for the BURBS model to use a 10% removal rate for Total Nitrogen in soils and an additional 10% removal rate for Total Nitrogen as it traverses through groundwater. The Town also agreed to use 7 mg/L as the STP effluent concentration for Total Nitrogen for the BURBS model. Analyzing Total Nitrogen loadings with these values, the STP generates Total Nitrogen loadings well below the "As of Right" buildout even when accounting for acceptance of the off-site St. James (Lake Avenue) Business District wastewater flow.

8. Stormwater Collection, Treatment, and Recharge

8.1. Existing Conditions

The existing site contains both commercial and industrial buildings with large paved parking areas on Lot 1 and Lot 2, and large areas of vegetated open space throughout the rest of the site. The existing stormwater on-site is collected intermittently through drainage inlets and a positive drainage system which ultimately conveys all site runoff by pipe to the on-site pond in Lot 2.

8.2. Potential Impacts of Proposed Subdivision

The proposed subdivision will retain the existing buildings and the existing paved parking areas on Lot 1 and Lot 2.

The balance of the subdivision will increase additional impervious area with the introduction of a 30-foot wide, paved road for access to development lots, and a water reclamation plant with a vehicular access drive from NYS Route 25A. The future development of Lots 3 through 8 will ultimately increase impervious area with the introduction of new buildings and associated paved access and circulation drives, paved parking fields, and pedestrian sidewalks. However, there will also be the introduction of new stormwater management techniques incorporating green infrastructure practices as suggested in the *NYSDEC New York State Stormwater Management Design Manual* (January 2015) constructed within Lot 9 and along the proposed private roadways, and ultimately on Lots 3 through 8, where none exist today.

There will be five (5) overall tributary areas on the Flowerfield property:

1. There are two existing ponds on the site, located adjacent to each other along a roughly north-south axis, at the approximate center of the overall property. The two ponds are identified as NYSDEC mapped freshwater wetland ponds, with the wetland limit delineated by the toe-of-slope/edge-of-water interface, per NYSDEC biologist Daniel Lewis during his site visit on October 17, 2018. The existing on-site ponds are currently used for stormwater catchment. This system will remain in place for the collection of rainfall runoff. Field investigation and site topographic survey indicate that the ponds, though adjacent, are separate catchment areas, and are referred to here as 1.a and 1.b:
    a. The catering hall pond primarily receives stormwater runoff from the existing developed lot at the south end of the property, what is referred to as Lot 1 on the preliminary subdivision map. Under the proposed subdivision plan, the newly proposed roadway will cut through this tributary shed area. This will slightly reduce the area of existing pavement contributing runoff to the pond.
    b. The northerly pond receives surface runoff from the surrounding landscape and neighboring existing parking field to the east. Under the preliminary subdivision plan, this parking field is referred to as Lot 3 and a portion of the parking field will become a segment of the right-of-way. Due to the status of this pond as a designated State wetland, NYSDEC requires that the

pond, under the post-development site conditions, receives an equivalent volume of runoff as under the pre-development condition. Based on a hydrological analysis of the pre- and post-development stormwater flows to the wetland pond, under the post-development site condition, the stormwater runoff from much of the proposed right-of-way will be channeled through vegetated swales and pipes to the wetland pond. In the post-development drainage system, all of the runoff from the Road B and C right-of-ways will be conveyed to the wetland pond, along with approximately 1,500 feet of the Road A right-of-way.

2. The southern portion of Road A, running approximately 370 feet in length, will direct stormwater in vegetated open swales to a new drainage reserve area (DRA 3) at the southeast corner of Parkside Drive and Mills Pond Road. The vegetated open swales will be supplemented with drywells.
3. The northern portion of Road A, running approximately 560 feet in length, will direct stormwater in vegetated open swales to two new DRAs next to the proposed Route 25A site access. In addition to the roadway runoff, the two new DRAs will also receive any overflow from the wetland pond shed area, should a rainfall event deliver volumes exceeding the established high-water line for the wetland pond.
4. The proposed water reclamation plant located at the northern end of the property, along with new vehicular access drive to the plant from NYS Route 25A, will contribute new impervious coverage stormwater runoff. The anticipated additional runoff, based on an eight (8) inch storm event, will be captured by catch basins and conveyed to underground drywell structures to be infiltrated into the groundwater table.

The Cameron Engineering Preliminary Engineering Grading and Drainage Plans on Sheets C-2 through C-4 (pages M-3 through M-5 in Appendix M) indicate the proposed drainage design calculations and stormwater infrastructure. As planned, the system is designed to retain eight (8) inches of stormwater in roadway improvement areas, drainage reserve areas (DRAs), and in the northerly wetland pond. As described above, changes to the existing stormwater drainage pattern tributary to the southerly wetland pond are minimal. Per discussion, preliminary review, and with approval by the Town Engineer, preliminary drainage design utilizes drainage reserve areas to store five (5) inches of stormwater, and the three (3) remaining inches of the eight (8) inch design storm event will be stored in drywells in vegetated open swales along the roadside within the private right-of-way. In addition, per discussion with the NYSDEC (see Appendix B page B-2), stormwater runoff flow will be conveyed to the existing northerly wetland pond in sufficient volume and frequency, so as to match the pre-development flows to the pond.

As shown on the Preliminary Engineering Plans (starting on page M-1 in Appendix M), approximately 246,833 cubic feet of stormwater runoff volume would be generated by the 8-inch storm event within the tributary shed areas comprising the proposed site infrastructure improvements and the northerly NYSDEC regulated wetland. The post-development runoff will be contained within the existing northerly State designated wetland pond, within proposed drywells within the private right-of-way, and within the three new drainage reserve areas indicated on the plans. Approximately 137,026 cubic feet of the anticipated runoff volume will be conveyed to the State wetland pond, where 75,538