

**DRAFT ENVIRONMENTAL IMPACT STATEMENT
SITE PLAN APPLICATION FOR THE SHOPS AT RIVERHEAD
OLD COUNTRY ROAD, EAST OF KROEMER AVENUE
HAMLET OF RIVERHEAD, TOWN OF RIVERHEAD
SUFFOLK COUNTY, NEW YORK**

PROJECT LOCATION: 41.55±-acre parcel located on Old Country Road, east of Kroemer Avenue, Hamlet of Riverhead, Town of Riverhead, County of Suffolk

**SUFFOLK COUNTY
TAX MAP NUMBERS:** District 600 - Section 101 – Block 01 – p/o Lot 03
District 600 - Section 119 – Block 01 – Lot 06
District 600 - Section 119 – Block 01 – p/o Lot 5.1

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**AVAILABILITY OF
DOCUMENT:**

This document represents a Draft Environmental Impact Statement ("DEIS") prepared by the above-referenced applicant. Copies are available for public review and comment at the offices of the Lead Agency.

DATE OF ACCEPTANCE: March 6, 2008

DEADLINE FOR COMMENTS:

TABLE OF CONTENTS

1.0	EXECUTIVE SUMMARY	i
2.0	DESCRIPTION OF PROPOSED ACTION.....	1
2.1	Introduction.....	1
2.2	Project Description.....	4
2.3	Summary of Existing Site Conditions and Brief History of Project.....	7
2.4	Purpose, Need and Benefits of the Proposed Project.....	13
2.5	Demolition and Construction.....	14
2.6	Required Permits and Approvals	17
3.0	EXISTING ENVIRONMENTAL CONDITIONS.....	18
3.1	Subsurface Conditions, Soils and Topography.....	18
3.2	Water Resources	35
3.3	Ecology	49
3.4	Land Use, Zoning and Community Character	64
3.5	Transportation.....	75
3.5	Air Quality and Noise	82
3.6	Socioeconomics	103
3.9	Visual and Cultural Resources.....	113
4.0	PROBABLE IMPACTS OF THE PROPOSED ACTION.....	119
4.1	Subsurface Conditions, Soils and Topography.....	119
4.2	Water Resources	129
4.3	Ecology	142
4.4	Land Use, Zoning and Community Character	157
4.5	Transportation.....	167
4.6	Air Quality and Noise	184
4.7	Socioeconomics	207
4.8	Community Facilities and Services	221
4.9	Visual and Cultural Resources.....	225
5.0	PROPOSED MITIGATION MEASURES.....	229
5.1	Subsurface Conditions, Soils and Topography.....	229
5.2	Water Resources	232
5.3	Ecology	232
5.4	Zoning, Land Use and Community Character	232
5.5	Transportation.....	233
5.6	Air Quality and Noise	233
5.7	Socioeconomics	234
5.8	Community Facilities and Services	234
5.9	Visual and Cultural Resources.....	235
6.0	UNAVOIDABLE ADVERSE EFFECTS	236
6.1	Short-Term Impacts	236

6.2	Long-Term Impacts	237
7.0	ALTERNATIVES AND THEIR IMPACTS.....	238
7.1	No-Action Alternative	240
7.2	Alternative Site Plan (“By-Right”)	243
7.3	Alternative Site Plan (“All Retail”)	253
8.0	IRRETRIEVABLE AND IRREVERSIBLE COMMITMENT OF RESOURCES	263
9.0	GROWTH-INDUCING ASPECTS.....	264
10.0	USE AND CONSERVATION OF ENERGY	266
11.0	GLOSSARY	267
12.0	REFERENCES	269

LIST OF APPENDICES

- Proposed Plans
 - Site Plan
 - Grading & Drainage Plan
 - Sanitary Sewer Plan
 - Water Supply Plan
 - Landscape Plan
 - Lighting Plan
 - Soil Erosion & Sediment Control Plan
- Appendix A -
- Appendix B - Subsurface Conditions: Phase I Environmental Impact Statement, Phase II Limited Environmental Impact Statement, and related correspondence/Health and Safety Plan and Material Handling Plan
- Appendix C - Geotechnical Investigation and Soil Boring Reports
- Appendix D - Site Survey
- Appendix E - Definition of Waters of the United States
- Appendix F - Ecological Assessment
- Appendix G - Photographs of the Subject Site and Surrounding Area
- Appendix H - Traffic Impact Study
- Appendix I - Air Quality Technical Report
- Appendix J - Noise Technical Report
- Appendix K - Economic Impact Analysis
- Appendix L - Statement of Real Property Taxes
- Appendix M - Community Correspondence
- Appendix N - Phase I Archaeological Investigation, Correspondence from the NYS OPRHP, and Extended Phase IB Archaeological Survey
- Appendix O - Aerial Photographs and Simulations, Building Elevations and Rendering
- Appendix P - Sewer and Water Correspondence
- Appendix Q - Alternative Plans
- Appendix R - Town of Riverhead Planning Department Comments – September 26, 2007

LIST OF FIGURES

Figure 1 - Site Location Map.....	3
Figure 2 - Aerial Photograph.....	9
Figure 3 - Excerpt of Soil Survey Map.....	24
Figure 4 – Soil Borings.....	30
Figure 5 – Additional Soil Borings.....	32
Figure 6 - Excerpt of USGS Topographic Map.....	34
Figure 7 – Groundwater Contour Map.....	36
Figure 8 – Hydrogeologic Zone Map.....	38
Figure 9 – Excerpt of SGPA Plan Map.....	41
Figure 10 - Excerpt of NYSDEC Freshwater Wetlands Map.....	46
Figure 11 - Excerpt of NWI Map.....	47
Figure 12 – Existing Habitat Types on the Subject Site.....	50
Figure 13 - Excerpt of Zoning Map.....	67
Figure 14 - Zoning Map Legend.....	68
Figure 15 – Zoning Map Legend (Cont'd).....	69
Figure 16 – Destination Retail Center (DRC) Zoning Use District Map.....	70
Figure 17 - Project Location and Noise Monitoring Sites.....	98

LIST OF TABLES

Table 1 - Existing and Proposed Site Data.....	4
Table 2 – Required Permits and Approvals.....	17
Table 3 - Soil Engineering and Planning Limitations.....	28
Table 4 – Existing Levels of Service.....	80
Table 5 - National and New York State Ambient Air Quality Standards.....	85
Table 6 - NYSDEC Air Monitoring Sites.....	87
Table 7 - Summary of Ambient Air Quality Data.....	89
Table 8 - NYSDOT/FHWA Noise Criteria.....	93
Table 9 - EPA Recommended Noise Level Goals Identified to Protect Public Health and Welfare.....	94
Table 10 - HUD Site Acceptability Standards.....	95
Table 11 - Average Ability to Perceive Changes in Noise Levels.....	96
Table 12 - Community Response to Increases in Noise Levels.....	96
Table 13 - Noise Monitoring Sites.....	99
Table 14 - Day-Night Level and Hourly L_{eq} Noise Levels (dBA).....	101
Table 15 - Comparison of Measured and Predicted L_{eq} (dBA).....	102
Table 16 – Historical Employment Changes, The Long Island Labor Market.....	103
Table 17 - Trends in Private-Sector Employment, Suffolk County, 2000 to 2004 (Number of Jobs).....	105
Table 18 - Number of Business Establishments, by Industry, Riverhead (Zip Code 11901) vs. Suffolk County, 2000 vs. 2004.....	106
Table 19 - Population Growth by Town and Community, Suffolk County, 1990-2005.....	107

Table 20 - Number of Retail Businesses, by Line of Retailing, Riverhead (Zip Code 11901) vs. Suffolk County, 2004.....	108
Table 21 - Mean and Median Household Income in Selected Nassau-Suffolk Towns	109
Table 22 - Stormwater Drainage Data	133
Table 23 - DRC Zoning Use District: Bulk and Dimensional Regulations	158
Table 24 - Computation of Required TDRs for the Shops at Riverhead.....	160
Table 25 - Dimensional Comparison Between Wal-Mart and Proposed Plan.....	163
Table 26 - Site-Generated Trips.....	169
Table 27 - LOS Comparison: AM Peak Hour.....	175
Table 28 - LOS Comparison: PM Peak Hour	177
Table 29 - LOS Comparison: Saturday Peak Hour.....	179
Table 30 - Predicted 1-Hour and 8-Hour Carbon Monoxide Concentrations (ppm).....	192
Table 31 - Predicted One-Hour and Eight-Hour Sensitive Receptor Carbon Monoxide Concentrations (ppm)	195
Table 32 - Predicted Nighttime Truck Movement Noise Levels (dBA)	202
Table 33 - Future Noise Levels by Location (dBA).....	203
Table 34 - Nighttime Truck Delivery Noise Levels (dBA).....	204
Table 35 - Existing Maximum Noise Levels (L_{max} in dBA).....	205
Table 36 - Proposed Building Summary.....	207
Table 37 - Estimated Construction Costs.....	208
Table 38 - Secondary Economic Impact of Construction Spending.....	210
Table 39 - Estimated Permanent Employment	212
Table 40 - Average Annual Wage for Selected Lines of Retailing on Long Island, First Quarter, 2006.....	212
Table 41 - Computation of Estimated Annual Payrolls for The Shops at Riverhead.....	213
Table 42 - The Direct and Indirect Employment Impact of The Shops at Riverhead On the Local Economy	214
Table 43 - The Direct and Indirect Earnings Impact of The Shops at Riverhead On the Local Economy	214
Table 44 - Computation of Gross Rents for The Shops at Riverhead	215
Table 45 - Estimated Real Property Tax Revenues From The Shops at Riverhead	216
Table 46 - Allocation of Potential Tax Revenues to Affected Taxing Districts.....	216
Table 47 - Computation of Required TDRs for the Shops at Riverhead.....	218
Table 48 - Comparison of Quantitative Impacts for Alternatives.....	239
Table 49 - Dimensional Requirements.....	245
Table 50 - Trip Generation Summary: Alternative Site Plan (“By-Right”)	246
Table 51 - Building/Structure Summary Table	247
Table 52 - Estimated Real Property Tax Revenues From The Shops at Riverhead	248
Table 53 - Allocation of Potential Tax Revenues to Affected Taxing Districts.....	249
Table 54 - Computation of Required TDRs for the Shops at Riverhead.....	250
Table 55 - Dimensional Requirements	254
Table 56 - Trip Generation Summary: Alternative Site Plan (“All Retail”)	255
Table 57 - Building/Structure Summary.....	256
Table 58 - Estimated Real Property Tax Revenues	258
Table 59 - Allocation of Potential Tax Revenues to Affected Taxing Districts.....	259
Table 60 - Computation of Required TDRs	259

1.0 EXECUTIVE SUMMARY

Introduction

This document is a Draft Environmental Impact Statement (“DEIS”) prepared in accordance with the State Environmental Quality Review Act (“SEQRA”) and its implementing regulations at 6 NYCRR Part 617 for the action contemplated herein. This DEIS evaluates the potential adverse environmental impacts associated with the proposed action. The subject property is situated on the north side of Old Country Road/County Road 58, east of Kroemer Avenue, in the Hamlet of Riverhead, Town of Riverhead.

The following issues have been identified as warranting analysis in this DEIS: subsurface conditions, soils and topography; water resources; ecology; land use, zoning and community character; transportation; air quality and noise; socioeconomic conditions, community facilities and services; and visual and cultural resources.

This *Executive Summary* is designed solely to provide an overview of the proposed action, a brief summary of the potential adverse impacts identified and mitigation measures proposed as well as alternatives considered. Review of the *Executive Summary* is not a substitute for the full evaluation of the proposed action performed in Sections 2.0 through 10.0 of this DEIS.

Brief Description of Subject Property and the Proposed Action

The site is comprised of two parcels (identified as SCTM District 600 – Section 101 – Block 01 – Lot 03 and District 600 – Section 119 – Block 01 – Lot 06) of 40 and 1.55 acres, respectively, for a total of 41.55 acres. In addition, the proposed development involves the swap of 1.01± acres of land located within SCTM District 600 – Section 101 – Block 01 – Lot 03 for an equal amount of land located in the adjacent lot designated as SCTM District 600 – Section 119 – Block 01 – Lot 5.1. The subject site is presently wooded with scrub oak and pine. Additionally, a portion of the site was originally cleared and developed by the former owner, the Hazeltine Corporation, as a major office/manufacturing facility including buildings, parking field and road network. The former buildings have been removed except for the first floor slabs and foundations, which comprise approximately 1.1 acres of the site, and which will be removed during site preparation for the proposed project. Most of the site is relatively flat with small pockets of depressions and hills scattered around the property. The site’s former parking field and road network of approximately three acres will also be removed to allow for the proposed retail development and associated infrastructure.

The site is served by the Riverhead Water and Sewer Districts by adjacent municipal infrastructure on Route 58, in the form of transmission water mains and sewers. A connection to the Riverhead Sewer District for this site was provided across Route 58, near the property line when the Sewer District was extended in the 1990s. Large capacity water mains are located on the south side of Route 58 for future connection by the proposed project. The former site was not connected to the Sewer District and may contain a septic system, which may have been abandoned in place. The exact nature of the abandonment is not known at this time.

The subject property is currently zoned Destination Retail Center (“DRC”), which permits the development of retail stores or shops, car dealerships, hotels and banks. The subject site is also within the receiving zone for TDRs. The subject site is located within the Central Suffolk Special Groundwater Protection Area (“SGPA”), a Critical Environmental Area (“CEA”).

The existing land uses surrounding the subject property are as follows:

North: Single-family residential uses predominate in the Foxwood Village to the north of the subject site;

East: To the east of the subject site are both residential and commercial uses;

South: Land uses to the south of the subject site are commercial (office and retail), industrial, motor vehicle raceway, lodging, residential and vacant land; and

West: Uses to the west of the subject site are commercial, vacant land, and industrial.

The proposed action involves a request for site plan approval and use of TDRs to permit the construction of a retail shopping center within the Destination Retail Center (“DRC”) zoning district within the Town of Riverhead. The site is zoned as a DRC and will be developed as such following zoning requirements for this zoning category. The proposed plan consists of a gross floor area of 487,435 of retail space and 12,174 square feet of restaurant space (to seat 318 people), with buildings situated along the perimeter of the site. Therefore, the total gross floor area of the proposed project is 499,609 square feet. Initial site clearing shall comprise approximately 25 acres to facilitate construction of the retail center. Impervious parking will be provided for 2,165 vehicles. In addition, 259 vehicle parking stalls have been reserved in various “land-banked green” areas along the perimeter of the site. The landbanked parking areas, if constructed, will be comprised of porous pavement. Landscaping and tree planting areas, specially-designated buffers, building setbacks, etc. will be provided per DRC zoning requirements, with relaxation of standards as allowed in receiving zones for TDRs to (a) allow for additional density on the subject site, and (b) provide for the preservation of more open space through the purchase of additional TDRs. Some natural vegetation will remain around the site, and additional plantings will supplement existing vegetation.

Grading of the site will provide an almost flat surface throughout, except for subtle undulations allowing for conveyance of stormwater to proposed stormwater infrastructure inlets. Where gradual, stabilized grading cannot be created to meet adjacent properties, retaining walls shall be constructed to hold back soils at those abrupt grade changes, or grading easements will be required from adjacent properties, according to the project architect.

Water would be provided to the site by the Riverhead Water District, and sewage effluent would be disposed of via connection to the municipal sewer system (Riverhead Sewer District).

More specifically, the site will be designed to distribute water supply and sewage from and to the respective municipal improvement district's facilities and infrastructure, which are adjacent to the site. Water supply distribution mains will contain redundant connection from the Riverhead Water District, as mandated by the SCDHS, and be of such size as to provide adequate supply for fire protection, irrigation and domestic use purposes.

A gravity sewer collection system, comprised of underground pipes and manholes, shall be provided to serve all of the buildings on the site, and convey the collected wastewater to an on-site, below-ground, pumping station. Wastewater will be pumped from this collection point to the existing service connection of the Riverhead Sewer District, located at the southeast corner of the site. The Riverhead Sewer District will treat the site's sewage at its "state-of-the-art" sewage treatment plant, located off Riverside Drive, just south and west of Indian Island County Park. The Sewer District shall convey the site's sewage to its treatment facility via an existing network of gravity collectors and pumping stations. The plans, with the last revision date of October 17, 2007, have been received and approved by the Riverhead Sewer District. As per the aforementioned correspondence "[s]ewer connection is available to service this parcel" and, according to the Superintendent of the Sewer District, the plant has capacity to treat the sewage generated by the proposed project.

According to the project engineer, in accordance with Town regulations, all surface run-off generated on-site must be contained on-site, therefore all run-off will be directed to parking lot leaching catch basins and stormwater leaching piping or pools. The leaching piping may be of specially-coated steel or high-density polyethylene ("HDPE") material. The leaching pools may be of precast concrete or HDPE material. All options of materials and method of stormwater infusion into the groundwater aquifer will be evaluated for this project.

The purpose of the proposed project is to develop the privately-owned, commercially-zoned subject property with retail development in conformance with the recommendations of the *Town of Riverhead Comprehensive Plan* and the site's DRC zoning classification. The proposed development would meet the purpose and intent of the DRC zoning district. The use of TDRs in the development of this project would assist in meeting the goals of the Town to protect open space in the APZ zoning district in other portions of Riverhead, while concentrating development in areas that can accommodate increased square footage due to the availability of infrastructure capacity.

Demolition and building construction will occur in conformance with Chapter 52, *Building Construction*, of the Town of Riverhead Town Code (hereinafter the “Town Code”). The current schedule anticipates a 17-month build-out, which accounts for approximately four months dedicated to civil design, civil design approval, and permit acquisition.

In order to implement the proposed action, the following permits and/or approvals would be required:

Required Permits and Approvals

Permit or Approval	Agency
Site Plan Approval and Relaxation of Dimensional Regulations	Town of Riverhead Planning Board
Subdivision Approval for Land Swap	Town of Riverhead Planning Board
Water Connection	Riverhead Water District
Sewer Connection	Riverhead Sewer District
Water and Sanitary Review	Suffolk County Department of Health Services
Highway Work Permit	Suffolk County Department of Public Works
Referral	Suffolk County Planning Commission
SPDES General Permit for Stormwater Discharges for Construction Activities: GP-02-01 and Notice of Intent	New York State Department of Environmental Conservation

Probable Impacts of Proposed Action

Subsurface Conditions, Soils and Topography

Based upon a Freon spill that occurred adjacent to the northwest side of the Hazeltine building in 1987, a total of 14 groundwater monitoring wells were installed both on-site and off-site since the early 1990s and have been sampled on a continuous basis. The initial results indicated significant groundwater impacts from Freon. The on-site air stripping system reportedly removed approximately 10,333 pounds of Freon from April 1993 to November 1998. The air stripping system was shut down in August 1999, and the monitoring of the groundwater wells has been reduced over the years with the continued decrease in the detected concentration of Freon. In October 1999, SCDHS stated that no further groundwater remediation was necessary, however groundwater monitoring both on-site and off-site was still required. This sampling continued through 2003 even as the treatment system, including the air stripper and associated piping, were being dismantled.

The most recent groundwater monitoring well results were reviewed by the SCDHS and the NYSDEC to determine if the Freon plume has been successfully remediated. According to an SCDHS letter, dated January 29, 2004, the results were satisfactory, and Malcolm Pirnie's request to abandon the remaining wells was approved. The wells were abandoned along with the remediation system in 2004. Therefore, mitigation of the groundwater plume was found to be complete. Similarly, closure of the on-site underground structures was granted by the SCDHS in late 2003. Mitigation of the existing, identified underground on-site structures can be considered complete.

A site-specific Health and Safety Plan ("HASP") has been developed along with a site-specific Material Handling Plan ("MHP"). Both of these documents address not only the previously-identified contaminants at the subject property, but also provide the proper protocol for encountering previously-unidentified contaminants and/or underground tanks and structures. Implementation of the HASP and MHP will help to ensure that no significant environmental impacts would result from potential residual contamination that may exist.

A substantial portion of the site has already been disturbed by the previous development on the property. Additional disturbance of the soils would occur as a result of excavation and grading for the proposed development. As most of the soil on the site is classified as either Carver or Plymouth soils, there are few limitations to development (with the exceptions of slopes and lawns and landscaping), and no significant adverse impacts to soils are expected.

Since more than one acre of site development is contemplated, a NYSDEC General Permit for Stormwater Discharges (GP-02-01) will be filed by the developer or its representative, which includes a Notice of Intent ("NOI") to obtain coverage under the general SPDES permit, issued for this project. A detailed *Soil Erosion & Sediment Control Plan* and *Soil Erosion & Sediment Control Plan and Notes* (also known as the Stormwater Pollution Prevention Plan ["SWPPP"]) has been submitted to the Town Planning Department and will be submitted to the NYSDEC prior to start of construction, for review and comment. Specific erosion and sediment controls are described within the *Mitigation* section, below.

The change in topography during construction will be designed to yield zero surplus and zero import of soil material. The anticipated cut and fill for this site is approximately a balanced amount of 160,000 cubic yards. Therefore, truck traffic associated with the import or export of natural materials from the site is not expected, although there would be truck traffic associated with the removal of construction and demolition debris.

Overall, based upon the analysis presented, it is anticipated that there would be no significant adverse impact to soils and topography. Moreover, erosion and sedimentation control measures would be implemented to minimize potential impacts.

Water Resources

In order to ensure the protection of groundwater, the proposed project will comply with the relevant recommendations of the "Highest Priority Areawide Alternatives" of the *208 Study* regarding Hydrogeologic Zone III, as described below.

- Sanitary waste will be handled by connection to the Riverhead Sewer District;
- The use of inorganic, fast-acting fertilizers will be restricted; and
- Stormwater on the site will be collected and recharged on site through the use of on-site inlets spread throughout the site and stored underground in leaching pools and/or piping in order to minimize the transport of nutrients, metals and organic chemicals to groundwater.

The subject site is situated within the Central Suffolk SGPA. Based upon a review of the *SGPA Plan*, the proposed project is generally consistent with the recommendations of the Central Suffolk SGPA.

In accordance with Town regulations, all surface runoff generated on-site must be contained on-site, therefore all runoff will be directed to parking lot leaching catch basins and stormwater leaching piping or pools. The leaching piping may be of specially-coated steel or HDPE material. The leaching pools may be of precast concrete or HDPE material. All options of materials and methods of stormwater infusion into the groundwater aquifer will be evaluated for this project. Stormwater management, as mandated by Town standards, requires the ability to store runoff from a two-inch rainstorm event during a 24-hour period. That storage volume shall be automatically leached into the groundwater aquifer, by the nature of the infrastructure provided. The total estimated stormwater storage volume is 263,995 cubic feet. The stormwater management system (which is divided into five stormwater drainage areas) would be capable of handling 276,897 cubic feet of drainage, thus exceeding the requirement.

The potential exists for storm drains to be impacted by inadvertent discharges related to current site operations -- more specifically general debris and runoff associated with vehicular discharges. Sediment traps, located within the catch basins, would be inspected and cleaned out on a regular basis. In addition, sweeping of the parking areas would also occur in order to prevent debris from entering the stormwater management system. No other potential contamination from project operations is expected.

All regulatory requirements would be satisfied to ensure proper management of stormwater runoff generated by the project to protect groundwater. Thus, the proposed action would be consistent with the *NURP Study*.

Best management practices (“BMPs”) for this site are implemented by containing impervious surface runoff in subsurface leaching structures, designed to contain an adequate volume of stormwater runoff per Town specifications. Systems will be constructed with a total below-grade storage capacity of two inches of direct runoff. All stormwater facilities will be located a minimum of four feet above the groundwater table, so as to provide adequate straining and filtration of suspended and settle-able material, including removal of a portion of any micro-organisms which may be present. It is noted that this form of recharge is consistent with the BMP's established in the *NURP Study*, which found that impacts to groundwater are minimized by attenuation in subsoils. Consequently, no significant surface water or drainage impacts are anticipated.

According to the project engineer, total sewage flow is estimated as the consumptive use of domestic water for the site or approximately 24,163 gallons per day (“gpd”). Peak flows of four times that amount, or 96,652 gpd, are anticipated and will be utilized as a pumping station design parameter. The pumping station will have two sewage pumps available to pump average day and peak day flows to the Sewer District facilities. A letter requesting availability has been submitted to the Riverhead Sewer District. The plans, with the last revision date of October 17, 2007, have been received and approved by the Riverhead Sewer District. As per the aforementioned correspondence “[s]ewer connection is available to service this parcel.” The project engineer, Lou Kalogeras, was verbally assured by the Sewer District Superintendent, at a meeting, that the sewage treatment plant capacity is sufficient to handle the projected flow associated with the proposed action. The Superintendent also indicated that the letter of availability would not have been issued without comment if capacity of the plant was of concern.

According to the project engineer, estimated water use for domestic purposes of a “dry store” retail center has been clearly studied in the past by the SCDHS. Domestic water use estimates are based on SCDHS Standards of 0.03 gpd per square foot of “dry use” space and 30 gallons per day per restaurant seat. This results in a total domestic water use demand of approximately 24,163 gpd ($0.03 \text{ gpd/sf} \times 487,435 \text{ sf} + 318 \text{ seats} \times 30 \text{ gpd/seat}$). Irrigation demand will be minimal, and is estimated at about 50 gallons per minute (“gpm”) for an 8-hour period or about 24,000 gpd, during turf growing seasons. In correspondence dated March 20, 2007, the Superintendent of the Riverhead Water District indicated that the subject property is “within the boundaries of the Riverhead Water District and can be served by same.” Therefore, there would be no significant adverse impact to water supply resources.

Based upon the analysis presented above, the proposed action is not expected to have a significant adverse impact on water resources, as it will be connected to public sewer and water, stormwater runoff will be captured and recharged on-site and the proposed project would meet the recommendations of the *NURP Study*. Furthermore, the proposed project conforms to the recommendations of the *SGPA Plan* in its preservation of open space and agricultural lands with the purchase of the TDR credits.

Ecology

According to the *Site Plan*, approximately 98 percent of the existing natural vegetation on the subject site would be removed to facilitate the development of the proposed retail center. Specifically, the majority of the site would be cleared, leaving a narrow wooded buffer along the northern property line. Upon completion, 1.81 percent of the Pitch Pine-Oak Forest would remain on-site. The remnant of the Pitch Pine-Oak Forest to remain would not offer the same wildlife habitat as previously existed. However, undeveloped woodland similar to those on-site are located in the immediate vicinity of the subject site. In addition, all of the existing Successional Old Field habitat would be removed from the site with the redevelopment of the subject site. Under the proposed action, approximately 10.37 percent of the site would be replanted with landscape species and turf. These plantings would be situated within landscaped islands in the parking areas.

The types and density of plant material used during the landscaping of the project would increase the desirability of these new habitats to wildlife species listed. However, the landscaped areas proposed will not benefit the majority of the wildlife species. Both of the above referenced ecological communities are distributed throughout New York State, and are ranked by the New York State Natural Heritage Program (“NHP”) as being secure on a global and statewide level. The proposed project will result in approximately 87.82 percent of the site being characterized as Paving - Hard Structures. This would represent a significant increase in this community type.

In sum, 1.81 percent natural vegetation would remain on-site and an additional 10.37 percent would be established as landscaping. The balance, 87.82 percent, would be pavement and buildings. Considering the surrounding area, this represents the loss of approximately one-half of the remaining Pitch Pine - Oak Forest community. The Pitch Pine – Oak Forest community is ranked “apparently secure” and “demonstrably secure” globally and as “apparently secure” in New York State by NHP. Furthermore, while all of the relatively small Successional Old Field community will be eliminated on site, there are large similar communities in the immediate area. In addition, this community is ranked as “apparently secure” both globally and in the State by NHP. As such, the loss of the existing ecological communities as a result of the proposed project is not anticipated to have a significant impact on the regional ecology.

As a result of the relatively small size of the existing habitats and the intensity of the surrounding land uses, many of the wildlife species expected on-site are those that are tolerant of human activity. The proposed alterations in the habitat composition on the subject site would have a direct impact on the wildlife species. Specifically, types and density of species present would be impacted. Implementation of the proposed action would result in the removal of the majority of the woodland areas found on site. Species that require wooded habitats would be limited to the northern edge of the property. This narrow buffer, in conjunction with the treed areas surrounding the residential development adjacent to the site to the north, would provide some habitat potential for certain species. It must be understood, however, that according to this DEIS, the ecological value of this property is somewhat limited as it is an isolated area surrounded by development.

It is expected that species requiring cover for nesting and larger ranges for foraging would be the most impacted. Therefore, the species expected to use this wooded area to remain on the subject site are likely to be relatively common suburban, human tolerant species. There would be limited potential for forest and edge species and no potential for sensitive forest interior species, which were not expected even under the existing conditions. The habitats found on the project site are expected to provide suitable habitat for a limited variety of wildlife. Thus, the proposed project will favor those species that prefer heavily-developed suburban and urban habitats and those that are extremely tolerant of human activity. While the species that would ultimately occupy the site would be tolerant of human activity, all species (including the tolerant ones) would be impacted by the proposed clearing, habitat alterations and subsequent increase in human activity.

In determining impacts upon the existing wildlife populations, it is assumed that equilibrium in population size is established for each species as determined by availability of resources in the habitat. Thus, the removal of habitat will cause a direct impact on the abundance and diversity of wildlife using the site. Although the assumption that species are at equilibrium is an oversimplification, and population sizes of many species are controlled below the carrying capacity by other factors, it does provide a worst-case scenario in determining the impact of habitat loss. In the short term, lands adjacent to the subject property will experience an increase in the abundance of wildlife populations due to displacement of individuals by the construction phase of the proposed project. Ultimately, competition between the displaced species and the species already utilizing the resources of the surrounding lands should result in a net decrease in population size for most species. The overall effect on the density and diversity of both local and regional populations should be minimal, as the area represents only a small portion of similar habitats available in the vicinity. However, there will be a reduction in the total population of the various animal species on the whole because of the loss of habitat from the proposed project.

Of the species listed as being likely on the site, the whip-poor-will, eastern box turtle, eastern spadefoot toad and eastern hognose snake are listed as special concern species. These species would be impacted by habitat loss, with no substantial mitigation available under the current project plans. Although there is documented concern about their welfare in New York State, these special concern species receive no additional legal protection under Environmental Conservation Law §11-0535. No threatened or endangered species were observed on site. The NHP documented the presence of the eastern tiger salamander, an endangered species, as well as a rare ecological community (coastal plain pond shore) and a rare vascular plant (long-beaked beakrush) in the vicinity of the site. As indicated in Section 3.3 of this DEIS, the rare ecological community and vascular plant are not anticipated on-site. Thus, no impacts to same would be expected.

With regard to the tiger salamander, considering the separation from the documented breeding ponds, which are approximately 2,400 feet away, and the intensity of the surrounding development it is not anticipated that the tiger salamander would utilize the subject site. As such, there would be no impact to the tiger salamanders under the proposed action.

A *Landscape Plan* for the proposed project was prepared by Land Design Associates. The majority of the plantings are recommended for use in harsh environmental conditions. Most plantings have a high tolerance for drought, wind and salt residue from snow clearing in winter storms. All of the plants are strong in their ability to withstand commercial vehicular use environments. Many of the plants are used for naturalizing, while none of these species are recognized as invasive. As per information provided by Land Design Associates, two of the species proposed for use in the landscape design have been known to exhibit invasive tendencies when left in areas that are unmanaged or minimally managed (i.e., waterway restoration areas). These species are the Bayberry (*Berberis* sp.) and Privet (*Ligustrum* sp.). However, these species, as proposed in the *Landscape Plan*, would not exhibit invasive tendencies, as they would be planted within parking areas, and would be regularly maintained with pruning and cleaning.

The plants chosen are used in many low maintenance commercial planting designs. The pre-planned design principle allows maintenance to be simplified. Maintenance crews can establish planned schedules with checklists of required tasks to be performed. Standard annual or bi-annual pruning should be performed with any landscape installation. Fertilization is only necessary in the first year. Fertilization can be accomplished organically, if it is required. Watering is required in the first year in order to allow plants to acclimate to their new environment. Watering is recommended in times of drought to prevent decline in the growth of the plantings.

Information provided by Land Design Associates indicates that a number of the plant species chosen have significant wildlife and habitat value. Many of the plants have fruits and berries, which provide food for the wildlife species in the area. In addition, many of the proposed plants would provide beneficial habitat value to wildlife in adjacent areas, although they will not create a permanent habitat, as they will be maintained. It is possible that a number of permanent habitats may be established in the upper portions of some trees. There are a number of Long Island wildlife species that are adapted to the native vegetation. Therefore, by providing some native plant species in this planting area, the quality of the wildlife habitat in the areas neighboring the site can be maintained.

Some tree species included in the planting design provide extensive branching in their upper canopies, which can be utilized by nesting species. Additionally, many of the proposed trees and shrubs contain flowers during the warm months. This would provide additional benefit to species such as bees, which would then attract birds to the subject site. Note that in locations where the attraction of bees may be problematic, the plants would be maintained to only provide foliage, not flowers.

Overall, the proposed action would result in the clearing of a large portion of the existing natural vegetation areas on the subject site. However, as previously explained, the isolated nature of the site provides limited ecological benefits, and natural vegetation on adjacent properties would provide similar communities and habitats to those present on the subject site. This would, to some degree, minimize potential impacts to wildlife species currently occupying the subject site. In addition, the proposed action involves the vegetation of portions of the subject site with landscape species. These areas would provide some habitat for species tolerant of human activity. Finally, in an effort to mitigate potential losses to vegetation and open space, the proposed action involves the preservation of farmland through the purchase of TDRs.

Land Use, Zoning and Community Character

The proposed project consists of the redevelopment of a former industrially-developed site into a destination retail center, in accordance with the existing DRC zoning of the subject property. The *Site Plan* prepared for the proposed project indicates 12 retail establishments within the subject. Based upon the proposed configuration, the retail center would not constitute strip-style development. The subject property would consist of a gross floor area of 487,435 square feet of retail space with 12,174 square feet of gross restaurant space containing 318 seats, for a total of 499,609 square feet of gross floor area. The lot coverage would be 480,990 square feet or 26.58 percent, less than the 30 percent permitted with the transfer of development rights, but more than the 15 percent permitted without the transfer of development rights. In addition, the floor area ratio ("FAR") would be 0.276, significantly less than the 0.60 permitted in the DRC zoning district with the transfer of development rights, and also less than the 0.30 permitted without the transfer of development rights. While the proposed development requires 2,265 parking spaces, the *Site Plan* includes 2,424 parking stalls, of which 259 would be landbanked. Of the total, 48 would be handicap. There would be nine loading spaces. Of the 2,424 paved parking stalls, 636 spaces would be full-size (10.0 feet-by-20.0 feet), 1,621 spaces would be 9.5 feet-by-19.0 feet, and 167 spaces would be 9.0 feet-by-18.0 feet. Therefore, the applicant is requesting a relaxation of the parking stall size standard.

Based upon the *Site Plan* prepared by E.S. Kalogeras, dated October 23, 2007, the following is analysis of the zoning compliance of the proposed plan with the requirements of the DRC Zoning District.

DRC Zoning Use District: Bulk and Dimensional Regulations

PARAMETER	REQUIRED/PERMITTED	PROPOSED
Minimum Lot Area	40,000 sf	1,809,900.46 s.f. (41.55 acres)
Minimum Lot Width at Front Street	200 feet	463± feet
Maximum Building Lot Coverage (with Sewer and no TDRs)	15%	26.52%**
Maximum Building Lot Coverage (with TDRs)	30%	26.57%
Maximum Impervious Surface	75%	87.82%***
Maximum Height of Buildings	35 feet*	≤ 50 feet
Maximum FAR (with Sewer and no TDRs)	0.20	0.276**
Maximum FAR (with TDRs)	0.60	0.276
Contiguous Landscaping ¹	20%	12.2%***
Interior Parking Landscaping	10%	6.5%***

*Preservation credits may be used to increase the height to 50 feet.

**Requires the purchase of 92 TDRs.

***Requires the relaxation of dimensional standards.

Implementation of the proposed project would require the relaxation of several of the zoning requirements and the purchase of 92 TDRs, as discussed below. The various yard setback requirements and the proposed project’s consistency therewith are shown on the *Site Plan* in the *DRC Zoning Setback Requirements* chart. No variances for yard setbacks are required.

Restaurants are not a permitted principal use within the DRC zoning district. However, in the prior application involving this site, restaurants were permitted by the Town Board. The Town previously indicated that their size and function were subordinate to the primary use of the property. Therefore, unless the Town permits them as an accessory use, the applicant would seek a use variance for same.

In a DRC Zone:

“Preservation credits may be used to increase the development yield associated with site plan applications made to the Town Board pursuant to Article XXVI of the Riverhead Zoning Ordinance. In its review and approval of such site plan applications, the Town Board may increase the allowable development yield at a rate of an additional 1,500 square feet of floor area per preservation credit redeemed to a maximum 0.3 floor area ratio.” (Note: The Planning Board is now the entity handling site plan approval with TDR credits.)

¹ This value includes both landscape and natural species.

The intent of the Town's TDR program is:

“to implement the land use policies set forth in the Town of Riverhead Comprehensive Plan with specific reference to protection of the lands located within the Agricultural Protection Zone (APZ), the preservation of agricultural lands, the support of the existing agricultural industry, and the necessary and appropriate economic development of the community.”

In addition, regarding TDRs, according to §108-332, *Commercial site plan* of the Riverhead Zoning Code, “the agency responsible for commercial site plan approval shall be the administrator for application of preservation certificates on commercial site plan application as follows: (1) In the event that preservation credit certificates are to be applied to commercial development as set forth in this chapter, the agency responsible for commercial site plan approval shall have the authority to vary the development standards set forth in this chapter; including but not limited to parking, floor area ratio and lot coverage requirements. The agency responsible for commercial site plan approval shall utilize the standards set forth in § 267-b of the Town Law of the State of New York in determining whether to vary development standards as set forth herein.” In this case, the agency would be the Planning Board.

According to E.S. Kalogeras, P.E., Consulting Engineer, the maximum floor area allowed for this development without TDRs is 361,980.09 square feet (1,809,900 square feet of site area times 0.2). One TDR is needed for each 1,500 square feet of proposed gross floor area exceeding the maximum of 361,980.09 square feet. Given the fact that the proposed floor area exceeds this amount, it is estimated that 92 TDRs would be needed for this project. According to Mr. Richard Hanley, the Director of the Riverhead Town Planning Department, each TDR preserves 43,560 square feet (one acre) of farmland. Therefore, 92 TDRs would result in the preservation of an estimated 92 acres of farmland within the Town of Riverhead.

The TDR zoning ordinance allows for the relaxation of dimensional standards. The proposed site plan requires relaxation of the standards for contiguous landscaping, impervious surface, interior parking landscaping and parking stall dimension. An alternative plan has been prepared that would not require relaxation of dimensional standards. That plan requires 30 TDR credits in order to be constructed. The proposed site plan requires 92 TDR credits, or 62 additional credits over the plan that does not require relaxation of standards. The relaxation of dimensional standards requested in the proposed plan will allow an additional 62 acres of agricultural land to be preserved through the purchase of development rights.

The additional density allowed on the site by relaxing the standards, as described above, would allow for the preservation of an additional 62 acres of land in the TDR sending district, where the *Town of Riverhead Comprehensive Plan* has identified a priority for maintaining farmland and open space. In addition, while the proposed plan will not meet the requirements for contiguous landscape area on the site, this property is situated in an area identified in the *Town of Riverhead Comprehensive Plan* for increased density (due to the infrastructure that is already in place and the goal to concentrate development in areas already developed to help prevent sprawl). Furthermore, the additional density that would result from the relaxation of dimensional standards will result in a higher real estate property value for tax purposes and higher increased sales taxes and jobs.

Benefits associated with the preservation of additional land, via the purchase of TDRs, include the protection of groundwater resources, as the sending areas are most likely not sewered and would likely require the installation and use of approximately 62 separate septic systems. In addition, the Riverhead CSD would receive substantial property taxes without an increase in the number of school children.

In addition to the purchase of TDRs, the following are the dimensional standards that require relaxation:

- Impervious Surface: The proposed *Site Plan* contains 1,589,604 square feet of impervious surface where a maximum of 1,357,425 square feet are allowed without relaxing the standards. This is an additional 232,179 square feet of impervious surface over what is allowed.
- Contiguous Landscape Area: The proposed *Site Plan* has 220,295 square feet of contiguous landscape area (12.2 percent) where 361,980 square feet of contiguous landscape area (20 percent) is required. Accordingly, the proposed plan has 141,685 square feet less contiguous landscape area than required.
- Interior Landscaping in Parking Lot: The proposal includes 41,534 square feet (6.5 percent) of interior landscaping in the parking lots, whereas 63,500 square feet (10 percent) is required. Therefore, the proposal contains 21,966 square feet less interior landscaping than required.
- Parking Stall Size: As previously mentioned, 1,788 of the proposed 2,424 parking spaces would require the relaxation of parking stall size standards. The breakdown of parking stalls and their sizes is included on the *Site Plan* and listed below:

<u>Parking Stall Size (in feet)</u>	<u>Number Provided</u>
10.0 x 20.0	636
9.5 x 19.0	1,621
9.0 x 18.0	167

The proposed layout requires dimensional relief for parking stall dimension, contiguous landscaping, parking lot landscaping and impervious surface all of which were granted to Wal-Mart in its recent approval. The mass of the proposed project is not out of scale for the area. The project has a greater percentage of contiguous landscaping than the approved Wal-Mart project located west of Kroemer Avenue on CR 58. The adjacent industrial property occupied by Adchem has a greater building lot coverage ratio than is proposed, and buildings that are located close to the property line. The buildings proposed along the frontage of CR 58 have a similar setback and scale as other adjacent buildings along the frontage, and are similar to the automotive dealerships, hotel and electronic store located across CR 58 from the property, as well as buildings located on the north side of CR58, including the adjacent automotive dealership and the Applebee's restaurant, located on the east side of Kroemer Avenue.

As part of the proposed action, a building occupied by a wholesale club is proposed to be located approximately 100 feet from the rear property line, approximately twice the required 50-foot rear building setback. The loading docks are to be located approximately 360 feet from the rear property line on the opposite side of the building. The main entrance to the store is proposed on the opposite side of the building facing the front parking field. Accordingly, most of the activity will be concentrated away from the rear property line. The next closest building to the rear property line, located at the end of the junior anchor buildings, is proposed at approximately 370 feet from the property line and has loading docks facing opposite the rear property line. In order to provide additional screening and security, a fence is proposed along the rear property line. Existing tree cover in the rear buffer (and the adjacent landbanked parking) is proposed to be maintained to the greatest extent possible with additional planting between the trees to provide additional screening. Some existing trees may require removal (i.e., next to the pavement) to allow for grading. However, additional evergreen landscaping will be planted along the cleared portions of the rear buffer.

A mobile home park is located beyond the eastern property line of the subject parcel separated from the site by an approximately 50-foot-wide parcel owned by the Foxwood Corporation. The mobile home park is situated within the same zoning use district as the subject property. Buildings near the mobile home park are to be located a minimum of 40.7 feet from the property line, where a 25-foot-wide setback is required. In addition, the 50-foot-wide parcel located between the subject parcel and the mobile home park, in which the subject parcel has an access easement, is proposed to remain wooded to provide an additional buffer. This area is not included in the calculation of the contiguous landscaping area of the site. The minimum distance proposed between buildings and the mobile home park is 90.7 feet. This distance, along with the maintenance of wooded vegetation in this area, provides significant setbacks and screening.

Several sections of the *Town of Riverhead Comprehensive Plan* focus on non-residential development within the Town. Chapter 2 – “Land Use Element,” indicates that in the future, among the characteristics Riverhead should possess is a “a thriving commercial corridor along Route 58, with reduced traffic congestion and an attractive visual quality.” In addition, Chapter 6 – “Business District Element,” suggests “Route 58 should absorb most of the demand for regional and destination retail uses and thus should continue to be a mainstay for generating jobs and tax revenue.” Finally, Chapter 7 – “Economic Development Element” indicates “Riverhead should continue to pursue a diverse economic base by promoting office and industrial development, agriculture, retail development, and entrepreneurial and small-business activity in appropriate locations.”

According to Page 2-12 of the “Land Use Element” of the *Comprehensive Plan*, the purposes of the Destination Retail Center district is “to provide a location for large retail centers along Route 58 that attract customers from the East End, Long Island, and beyond, while linking development to open space protection along the Route 58 corridor and in Agricultural zones.” The preferred commercial land uses are outlet centers, shopping center over 100,000 square feet in size, cinemas, hotels and new automobile dealerships.

The proposed development of the subject site with a retail center would be in keeping with the character of uses along Route 58, which is predominantly commercial. The subject property is situated on the Route 58 commercial corridor, approximately one-half mile east of the terminus of the Long Island Expressway. Page 6-6 of the *Comprehensive Plan* states that “[c]ommunity members made clear that they would prefer to concentrate future commercial strip development along Route 58, since it has already been transformed into a commercial corridor...” Moreover, the adjacent properties to the east and west, as well as those to the south of the site along Route 58, are predominantly commercial in nature. As such, there would be no significant adverse impacts to same from the proposed development.

Page 6-6 of the “Business District Element” of the *Comprehensive Plan* goes on to say that, “yet as successful as Route 58 has been from a *commercial* perspective, it suffers from traffic congestion and poor aesthetics, and these issues need to be addressed before additional development is allowed there.” Focus groups did not like the “strip” aesthetics of the corridor, including a collection of “prototype buildings” of nationwide retail stores, vast areas of concrete parking lots containing little vegetation and garish free-standing signs. “Design improvements to Route 58 make sense not only from an aesthetic point of view, but also from an economic standpoint; they can help increase consumer interest and bolster property values.”

Overall, the proposed project conforms to the *Comprehensive Plan* by providing a destination retail center, the use for which the site is zoned. As noted earlier, the concept of destination retail for the Route 58 corridor was thoroughly examined in the *Comprehensive Plan* and implemented through the changing of the zoning in the area on the Town’s own motion. As the proposal applies the destination retail concept it comports with the *Comprehensive Plan*.

Therefore, the proposed action is not expected to have a significant adverse impact on land use, zoning and community character.

Transportation

Eschbacher VHB performed a *Traffic Impact Study* for the proposed project. It should be noted that the *Traffic Impact Study* evaluated a 530,420-square-foot retail center. Since the initial analysis, the proposed square footage has been revised to 519,741 square feet (for purposes of the traffic analysis). This reduction means slightly fewer vehicle trips can be expected than were analyzed, making this analysis conservative in that the expected Build scenario intersection delays are overstated by a small amount.

The analysis of future conditions, with and without the proposed project (“Build” and “No Build” conditions, respectively), was performed to evaluate the effect of the proposed project on future traffic in the area. The No Build condition presents the expected future traffic conditions that can be expected to occur, whether the proposed retail complex is built or not. The No Build condition serves as a comparison to the Build condition, which presents expected future traffic conditions resulting from both project and non-project generated traffic.

Based upon the expected time necessary for project completion, three years into the future (year 2009) was selected as an appropriate analysis period. An annual growth rate of two percent per year was applied to the existing turning movement counts at the study intersections to account for increases in general population and background growth not related to the proposed project. The two percent background growth rate used in this analysis is slightly greater than the 1.67 percent estimate made by the Town of Riverhead for the Long Island Transportation Plan.

A second source of future traffic growth under No Build conditions is other specific planned developments within the study area. Six other projects were identified within the study area. These projects are:

- Browning Hotel Properties, Inc. is currently constructing two hotels with a total of 254 rooms on the north side of CR 58, on the west side of the NYSDOT facility;
- Headriver LLC is seeking approval to construct a Wal-Mart, three restaurants, and 27,000 SF of retail space on the north side of CR 58, on the east side of the NYSDOT facility;
- 14,500 SF of retail space proposed for the southwest corner of CR 58 and Kroemer Avenue;
- A Stop & Shop supermarket on the southwest corner of CR 58 and Mill Road;
- A PC Richard & Son store on the south side of CR 58, west of Gatewood/Commerce Drive; and
- A 137,000 SF retail building on the northwest corner of NY 25 and Tanger Mall Drive.

The additional traffic to be generated by this project was calculated using *Trip Generation* (2003, Seventh Edition) published by the Institute of Transportation Engineers (“ITE”). This widely utilized reference source contains data for Retail Space (Land Use Code #820) and Discount Club (Land Use Code #861).

Site-Generated Trips

Peak Hour	Total Trips	Entering Trips		Exiting Trips	
		Percent	Volume	Percent	Volume
Weekday AM	477	63%	299	37%	178
Weekday PM	2,063	49%	1,003	51%	1,060
Saturday	2,915	51%	1,486	49%	1,429

Not every project-generated trip will result in an additional vehicle on area roads. This is because some of the vehicles entering the site will come from the stream of vehicles currently using CR 58. Project generated trips which are drawn from existing traffic are known as “Pass-By” trips, since they are drawn from the flow of vehicles currently passing by the project site while traveling to and from other destinations.

The ITE has compiled and published data from pass-by studies in *Trip Generation*. Based on that data, credits for the expected number of pass-by trips at The Shops at Riverhead were calculated. The pass-by percentages used are 35 percent for the AM and PM peaks and 30 percent for the Saturday peak.

The No Build scenario represents the expected traffic conditions at the study intersections in the year 2009 *without* the proposed Shops at Riverhead. The Build scenario adds the expected traffic from The Shops at Riverhead to the No Build traffic. Also, included in the Build scenario are roadway improvements proposed to be built as part of the development of the Shops at Riverhead, as discussed below. Consequently, the expected impact of the proposed project can best be determined by comparing the Build level of service analysis results to the No Build results.

All study intersections will experience significant increases in delay when comparing Existing to No Build conditions in all three time periods (AM peak, PM peak, and Saturday peak). At the Kroemer Avenue and Mill Road/Pulaski Street intersections, the overall average delays will typically increase by fifteen to twenty seconds during the PM peak. The increase in the Saturday peak delay at Tanger Mall Drive will be in a similar range, but at Kroemer Avenue and Mill Road the average delay is projected to increase by approximately thirty-five seconds, with the overall LOS changing from A to D at Kroemer Avenue and from C to E at Mill Road. These No Build increases in delay will result from overall growth in the general area plus the impacts from the six specific other projects in the immediate study area, and can be expected to occur with or without construction of the proposed Shops at Riverhead.

At the currently unsignalized intersection of Commerce Drive/Gatewood, it will become very difficult for vehicles coming from the side streets to enter onto CR 58. However, this intersection will be signalized in the near future as part of the PC Richard project, thus allowing side street vehicles to enter onto CR 58 without excessive delay. This signalization has been included in the No Build analysis.

Except at Mill Road, the intersection delays along CR 58 can be expected to *improve* when comparing the Build to the No Build condition. The construction of the second eastbound lane on CR 58 from Kroemer Avenue to Mill Road will eliminate the present growing bottleneck on CR 58 and significantly mitigate the impact of both the other planned developments and the proposed Shops at Riverhead on CR 58. Coordination of the traffic signals also contributes to the reduction in intersection delays.

As discussed earlier, the Mill Road intersection will experience significant increases in delay when comparing Existing to No Build conditions. The vehicle trips generated by the proposed Shops at Riverhead in the Build condition will add to the No Build delays at Mill Road caused by the overall background growth and the impact of the other six specific projects included in the No Build and Build analysis.

Possible long term improvements to the Mill Road intersection include realigning Pulaski Street so that instead of ending at the CR 58/Mill Road intersection, it would instead intersect CR 58 opposite the existing traffic signal at the entrance to Riverhead Centre. This would primarily improve conditions on the northbound approach of the Mill Road/CR 58 intersection, but all approaches would benefit collaterally as well. This project is still in the planning stages.

Suffolk County has proposed redesign of the CR 58/Mill Road intersection as part of an ongoing Corridor Study of CR 58 (This corridor study is in addition to the Early Improvement Project on CR 58 recently announced by the County Executive.) Among the improvements would be acquisition of additional right-of-way and added capacity on both the northbound and southbound approaches. These improvements, combined with the relocation of the west end of Pulaski Street, would combine to noticeably improve future traffic conditions at the CR 58/Mill Road intersection.

Access to the project site will be via a signalized intersection on CR 58. The access roadway will have three exiting lanes (two for left turns to eastbound CR 58, and one for right turns to westbound CR 58) and two entering lanes. The entering and exiting lanes will be separated by a raised median.

A potential future second access point is on the west side of the property, at Kroemer Avenue. Although the project site does not have frontage on Kroemer Avenue, some adjacent properties do. Efforts to obtain access to Kroemer Avenue via a portion of the Adchem property have been unsuccessful. In addition to attempting to obtain access via the Adchem property, the developer has executed a “land swap” with the adjacent Riverhead Auto Mall. The land swap gives the project site a border with the right-of-way of a LIPA overhead powerline. Despite the current LIPA policy of only granting revocable licenses across powerline right-of-ways, as opposed to granting permanent easements, the developer is currently negotiating with LIPA to obtain access across this right-of-way to Kroemer Avenue. LIPA has made a determination that the layout of the proposed second access roadway to Kroemer Avenue through the right-of-way is a parallel occupancy. LIPA has a policy of not granting access that runs parallel to their power lines. The developer is challenging the determination and attempting to obtain an exception to the determination.

Should access to Kroemer Avenue be obtained, approximately twenty-five percent of traffic entering and exiting the site can be expected to use the Kroemer Avenue entrance instead of the main access point, resulting in lower vehicle delays than would otherwise exist at the main site access point intersection with CR 58. All efforts to obtain a second access to the Kroemer Avenue signal are contingent upon dedication of the north leg of Kroemer Avenue, which is currently privately owned, to the Town of Riverhead.

The developer has also attempted to obtain a second access point to Mill Road. This access would cross SCTM parcel 0600-101-1-8, an approximately 23-acre parcel on the west side of Mill Road, north of the Millbrook Mobile Home Park.

Based on the observations and the results of the study, Eschbacher VHB has concluded the following:

- With the proposed construction of a second eastbound lane on CR 58 from Kroemer Avenue to Mill Road, construction of a second eastbound left turn lane at Mill Road, and coordination of the traffic signals along CR 58, intersection delays at the study intersections along CR 58 other than at Mill Road can be expected to improve when comparing the Build to the No Build scenario;
- The long term project to relocate the termination of Pulaski Road to the Riverhead Centre traffic signal and the improvements being considered in the CR 58 Corridor Study by Suffolk County would combine to noticeably improve future traffic conditions at the CR 58/Mill Road intersection;
- The proposed site access driveway intersection with CR 58 can be expected to operate at a reasonable LOS during the peak traffic periods;
- The intersection of Commerce Drive/Gatewood will likely require signalization in the near future, with or without construction of the proposed Shops at Riverhead. A signal will be installed as part of the PC Richard project; and

- Sufficient on-site parking is being provided.

Based on the above, it is the opinion of Eschbacher VHB that the proposed project will not have any significant adverse traffic impacts that cannot be mitigated.

Air Quality and Noise

RTP Environmental prepared an air quality analysis for the proposed project. The anticipated impacts on air quality were estimated using the same models used to evaluate existing conditions. Traffic data were developed for a future year 2009 signifying project completion. For the year 2009, two model scenarios were run at Old Country Road (CR 58) at Mill Road/Pulaski Street, one with projected 2009 traffic volumes only (No Build Case) and one with project traffic added to the projected 2009 traffic volumes (Build Case). Based on the conclusions from the traffic analysis by Eschbacher VHB, as mentioned earlier, Build case traffic conditions were modeled using existing roadway configurations.

The one-hour (rolled back) background value was added to the projected traffic impacts with the project to yield a value of 4.2 ppm for the worst case sidewalk receptor. This value is again well below the 35 ppm one-hour Federal and State carbon monoxide standard. The peak combined eight-hour value is 2.9 ppm. This value is also well below the Federal and State ambient eight-hour standard for carbon monoxide.

As part of the carbon monoxide analyses presented above, sensitive receptors such as schools, hospitals, parks, etc. in the vicinity of the analyzed intersection were identified and modeled as a sensitive receptor. One sensitive receptor was found to be in the vicinity of the analyzed intersection and was included in the analyses for Existing, No Build and Build Conditions. The sensitive receptor represents the Medical Center on Commerce Drive (just northeast of the project site). The maximum impact concentration is well below the one-hour and eight-hour standards.

The proposed project is in a severe ozone non-attainment area. As detailed in 6NYCRR Part 240, the proposed action does not involve approval, funding or implementation of the Federal Highway Administration/Federal Transit Administration ("FHWA/FTA"), and therefore, is exempt from a Conformity Determination under Part 240. In addition, based on the above microscale analyses, the project will only cause minor contributions to any new localized carbon monoxide levels surrounding the project site.

Air quality impacts associated with the construction and operation of the proposed facilities are anticipated. These impacts result from the operation of construction equipment and fugitive emissions during construction and the actual air pollutant emissions from operating the proposed facilities.

Impacts to air quality from project construction activities are anticipated to be short-term and relatively insignificant. The Shops at Riverhead project will require demolition activities, site grading and construction. The construction process is expected to be completed in one phase by 2009.

During construction, the operation of heavy construction equipment is a source of temporary dust emissions that can impact local air quality. Dust is generated from, but not limited to, demolition, including blasting, land clearing, ground excavation, and earth moving. In addition, the use of heavy equipment and the emissions generated from off-road engines can add to potential local impacts. The temporary and site specific nature of construction activities make it difficult to estimate potential emissions. Further, the varied nature of construction and phasing of activities make emission estimates increasingly difficult. Construction also utilizes different types of controls that are also useful in the reduction of fugitive dust emissions. Typical dust suppression, such as the use of water trucks, covered storage piles and trucks can greatly reduce construction impacts. In addition, other site controls, such as stormwater pollution prevention activities and good housekeeping, can reduce site dust generation. Stormwater pollution prevention activities, such as phased construction activities, minimizing the extent of disturbed soils, stabilizing soils, gravel roadbeds, wheel washes, etc. can provide benefits to both off-site water and air impacts. Regular equipment maintenance and upkeep can also reduce negative impacts from on-site equipment usage.

The operation of point and fugitive sources of air pollution at the facilities within The Shops at Riverhead will result in minimal increases in the overall atmospheric air pollutant burden based on the nature of typical retail operations and associated activities. Heating, ventilating and air conditioning systems (“HVAC”) release small amounts of air pollutants that when compared to the regional burden are insignificant and should not cause an exacerbation of applicable standards or guidelines. At this time, it is unknown whether any HVAC systems installed as part of the project will require air permitting or registrations.

The proposed project will have an insignificant air quality impact on other air quality related values such as visibility impairment, acid deposition, impacts on soils or impacts on vegetation. The relative air pollution burden added by the construction and operation of the project is insignificant when compared to the current and future background sources in the region.

RTP Environmental also prepared a noise analysis for the proposed project. Primary noise sources with the potential for noise impacts include HVAC equipment, loading/unloading activities, movement of delivery trucks to and from the loading bays/docks, and the delivery truck back-up alarm. All building mechanical and HVAC equipment will be housed inside buildings or designed to have no impact on adjacent noise-sensitive land uses. All the loading bays are of the flush design where the truck/trailer is backed up flush against the loading bay. The flush design practically eliminates the loading/unloading noise associated with the older open platform designs as these activities are effectively enclosed inside the building. Consequently, noise from the loading or unloading of goods is expected to be inconsequential. Furthermore, the loading and unloading of goods/products is subject to Section 81-5.F of the Riverhead Town Code, which limits loading and unloading to the hours between 8:00 PM and 7:00 AM of the next day.

Monitoring Location N1 was situated near the southwest corner of the Millbrook Community, a trailer park community. The project site is located immediately to the west. This site is also the northwest corner of an outdoor seasonal recreational facility. At the time of the monitoring program, the facility was not open. This site represents the nearest noise sensitive receptors to the project site and to the section of CR 58 with the greatest increase in project-induced traffic. Location N2 is situated at the Glenwood Village entrance, a trailer park community, at Glenwood and CR 58. Actual residences are located approximately 700 feet to the south of CR 58. Land uses immediately adjacent to this site are commercial. A hotel is located approximately 250 feet to the west. This site was selected to assess the potential increase in traffic noise due to the project. Location N3 is situated along the southern property boundary of the Foxwood Village residential development. Residences adjacent to this location are over 1,500 feet from CR 58 to the south and over 1,300 feet from Mill Road to the east. Land uses immediately adjacent to this site are residential. This site supplements the other two monitoring locations.

On-site delivery truck routes are located along the perimeter of the site, along the southern half of the western property line, along the entire eastern property line, and the eastern third of the northern property line. Residential land uses are adjacent to the northern property line (Foxwood Village community) and a portion of the eastern property line (Millbrook community). The noise conditions at these locations are represented by noise monitoring Locations N3 and N1, respectively.

Of particular concern are the semi-tractor trailer trucks during the more sensitive nighttime hours. Estimates of maximum noise levels were made using heavy truck maximum pass by noise level data in TNM, and L_{eq} noise levels were estimated using TNM 2.0. The developer conservatively estimates that up to four heavy trucks and two medium trucks in a one-hour period will be making deliveries to the stores along the eastern section of the site, moving at a speed of 15 mph. While most deliveries are expected to occur during the daytime hours, it is nonetheless assumed that deliveries may be made sometime during the nighttime hours. Noise levels from delivery trucks are expected to be 48 dBA at N1 and 50 dBA at N3. The maximum ambient hourly noise levels were 54 dBA and 47 dBA at the corresponding locations. The estimated maximum delivery truck noise level is expected to be 73 dBA for both locations. Maximum noise levels of 81 dBA and 86 dBA have been observed during the nighttime hours at Locations N1 and N3 respectively.

Backup alarms are required safety devices under federal motor carrier and OSHA regulations. A property or store owner may run afoul of the safety requirement in mandating or regulating the loudness level or operation of a backup alarm. The alarm is readily and unmistakably audible at 15 feet by design (industry advocates 10 dB above ambient noise level) to alert anyone behind the truck that it is backing up. Since noise levels of back-up alarms vary greatly from truck to truck, estimates of the resulting noise levels at receptor locations are therefore infeasible.

The major source of noise affecting the community noise environment from the proposed development is the additional traffic introduced by the project. As the resulting total traffic volumes for the alternatives considered are similar to (or slightly lower than) those of the proposed action, analysis results and findings presented herein apply to all of the Build alternatives. The peak traffic hourly L_{eq} noise levels that can be expected with the additional traffic as a result of the Shops at Riverhead under the Build and No Build conditions. In general, the project site under the Build Alternative is expected to have no significant impact relative to the No Build noise levels.

As can be seen above, increases in noise levels due to the proposed project are expected to be one dBA or less. Therefore, the proposed action is not expected to significantly change the noise environment in the adjacent community.

Of the primary noise sources, building mechanical and HVAC equipment and loading bay activities are not expected have any impacts. All building mechanical and HVAC equipment will be enclosed within buildings or otherwise designed to satisfy the Town noise ordinances and building permit requirements. The flush design of the loading bays greatly attenuates the noise from the loading and unloading activities, effectively enclosing the operation.

Under the “worst case” nighttime delivery scenario, the hourly noise level (L_{eq}) does not exceed the NYSDOT nor the NYSDEC 6-dBA noise level increase criteria for a noise impact. In fact, the delivery truck noise level at Location N1 is expected to be significantly lower than the existing maximum hourly L_{eq} .

The maximum single heavy truck pass-by noise level at Locations N1 and N3 can be expected to exceed the Town’s daytime and nighttime maximum noise level limits of 65 and 50 dBA. However, the maximum number of such occurrences in any one hour period is expected to be less than 4 times, each lasting no more than 30 seconds.

Vehicle back-up alarms are a required safety device that warns of danger. As is the case in most noise regulations and guidelines, the Town noise ordinance specifically exempts warning and safety devices.

For all three locations, traffic noise levels under the Build condition is expected to increase by one dBA or less versus that under the No Build condition, well below the 6 dBA that NYSDEC and NYSDOT consider a significant increase and below the 3 dBA that is considered a perceptible change by most people. Consequently, secondary noise impacts are not expected.

In conclusion, with the exception of the occasional heavy delivery truck movements along the eastern property line and the northern eastern property line generating pass-by maximum noise levels exceeding the Town noise level limits as are most existing noise levels, the proposed project is not expected to have significant noise impacts by NYSDEC and NYSDOT noise impact guidelines.

Socioeconomics

An Economic Impact Analysis was prepared by Dr. Pearl M. Kamer. The proposed shopping center is close to the Tanger Retail Outlet, which draws its customers from throughout the New York Metropolitan Region. Therefore, it is likely that The Shops at Riverhead will serve substantial numbers of customers from elsewhere on Long Island, from New York City and even beyond. The purchasing power brought to the community by these customers will help support local hotels, restaurants and other tourist-related facilities. They will also provide additional sales tax revenues to fund Suffolk County government.

The Town of Riverhead will benefit directly from the construction of this project from the building permit fees that will be paid to the Town by the developer. This has become an issue in the Town of Riverhead, where housing starts have fallen to their lowest level in 12 years. While Riverhead's population is increasing, the number of new housing starts last year decreased, according to 2006 building department statistics. The building department issued 119 permits for new homes in 2006 as compared with 190 in 2005. Historically, almost 400 new home permits were issued annually. Permits issued for new condominiums have also declined markedly. These declines reflect a combination of economic conditions and rezoning within the town. Given this situation, the building permit fees associated with the Shops at Riverhead should be a welcome source of revenues to the town.

The project will also have demonstrative positive effects on the local economy when all retail facilities are fully occupied and operational. The proposed Shops at Riverhead will employ a significant number of workers, most of whom will be drawn from the immediate community. More than 1,400 full-time equivalent jobs could be created at the Shops at Riverhead. The wages associated with these jobs will provide a significant boost to the local economy. A total annual payroll of more than \$35 million in current dollars has been estimated for the Shops at Riverhead.

The property tax analysis assumes a seven percent vacancy rate and a 20 percent expense ratio resulting in a net income of \$7,683,858. Using a .10 capitalization rate results in a market value of \$76,838,581. Applying the current Town of Riverhead equalization rate of 11.54 percent results in an assessed value of \$8,867,172. Applying the current town and school tax rate of \$137.258 per \$1,000 of assessed value results in total annual property taxes of \$1,217,090. Riverhead Central School District #2 would receive more than \$720,000 annually in additional real property taxes from the Shop's at Riverhead. Moreover, the district will not incur any additional costs in connection with the development since no residential housing is being proposed. The Town of Riverhead would receive more than \$260,000 in additional real property taxes annually.

According to the project engineer, the TDR's required for this project are based on the total site area, which is 1,809,900.46 square feet (41.55 acres). The floor area allowed by right is 20 percent of this square footage, which equals 361,980.09 square feet. The proposed gross floor area of the project is 499,609 square feet, which is 137,629 square feet above what is allowed by right. One TDR is needed for each 1,500 square feet over what is allowed by right. Dividing 137,629 by 1,500 indicates that 92 TDRs will be needed. Since each TDR preserves 43,560 square feet (one acre) of farmland, 92 TDRs would preserve approximately 92 acres of farmland within the Town of Riverhead.

Crop production remains an important industry in Suffolk County. As of the second quarter of 2006, 2,389 workers were employed in crop production in Suffolk County according to the New York State Labor Department. The aggregate payrolls of these workers exceeded \$19.9 million. At an estimated 4.3 jobs per acre in crop production, preservation of an estimated 92 acres would result in the preservation of some 396 agricultural jobs.

The proposed shopping center also forecloses the possibility of constructing 92 residential units elsewhere in the Town. If these units were constructed in the sending zone, they could overburden existing roads, schools and public services and require major capital investments in new infrastructure. The development of the subject property at the density proposed and the associated protection of open space in areas of the Town identified as sending areas will protect those areas in which development could have significantly more adverse impacts on the existing infrastructure. It will also prevent urban sprawl.

The preservation of farmland has an ancillary benefit in that it helps to preserve the ambience of the East End of Long Island in support of tourism. Tourism is a major industry on Long Island and much of it is concentrated in eastern Suffolk. According to the New York State Labor Department, Long Island's hotel industry employs almost 6,000 workers and generates total payrolls in excess of \$38 million. In the aggregate, hotels and related services, including food services, employ more than 75,000 persons and generate almost \$350 million in payrolls on Long Island.

As noted above the proposed action would create over 1,000 construction jobs and close to 1,500 permanent jobs. In addition, the purchase of TDRs to permit the construction of the proposed retail complex would allow the preservation of 92 acres of farmland, which would ultimately preserve approximately 400 agricultural jobs. Moreover, the development of The Shops at Riverhead would generate approximately \$1.22 million in annual property tax revenue.

The Riverhead community lacks the full range of retail establishments characteristic of a well-served community. The Shops at Riverhead would fill this gap. Overall, there appears to be sufficient purchasing power both locally and throughout Long Island to support the retail activities proposed for The Shops at Riverhead.

Community Facilities and Services

It is estimated that the Riverhead CSD would receive approximately \$720,517 annually in additional real property taxes from the Shops at Riverhead. As the subject site would be redeveloped as a destination retail center, no school-aged children would be generated on-site. Thus, the implementation of the proposed action would not result in any additional costs associated with providing educational services to school-aged children generated on-site, and the school district would experience a direct net benefit associated with the proposed action.

The subject property is serviced by the Riverhead Fire Department. Correspondence was forwarded to the Chief of the Department, Edward Carey advising of the proposed project and requesting information on the Fire Department. A response to the written correspondence has not been received. In addition, several telephone calls were also placed to Chief Carey, to follow-up the correspondence sent by Freudenthal and Elkowitz. Chief Carey was unable to estimate the additional costs that could be incurred in servicing the proposed shopping center. However, it is believed that the estimated \$46,249 in additional property tax revenues that the Fire Department would receive would partially, if not completely, compensate the Department for the cost of servicing the proposed destination retail center. In addition, buildings would be built to the New York State Building and Fire Codes, and thus, would incorporate the latest construction and fire protection techniques, materials and equipment, including sprinklers.

The subject property is situated within the service area of the Riverhead Town Volunteer Ambulance Corps. Correspondence was forwarded to the Ambulance Corps advising of the proposed project and requesting information on the Corps. A response from Chief Joseph Gadizinski of the Ambulance Corps indicates that the Ambulance Corps currently has 75 members and responded to 2,500 calls in 2006. The Ambulance District would receive an estimated \$9,737 in additional real property taxes annually from the Shops at Riverhead, which should compensate for any additional resources needed to service the proposed retail center.

The subject property is under the jurisdiction of the Riverhead Town Police. Correspondence was forwarded to Chief of Police David J. Hergermiller advising of the proposed project and requesting information relative to service availability. A response to such correspondence has not yet been received. In addition, the Town Police Department did not respond to repeated follow-up phone calls. According to Greenberg Farrow, a private security patrol will traverse the proposed retail center both during and after operating hours. Furthermore, each individual store may provide additional security measures. In addition, a fence would be installed around the perimeter of the property, to the north. The Town of Riverhead would receive approximately \$260,457 in additional tax revenue, a portion of which would be allocated to the Town of Riverhead Police Department. It is anticipated that this additional tax revenue would help offset costs incurred by the Police Department to service the proposed development.

Using solid waste generation factors from *Environmental Engineering* Fifth Edition the anticipated solid waste generation for the subject site would be approximately 8,355 lbs/day (121.6± tons/month). Under the proposed action, solid waste would be removed from the subject site by a licensed carter and disposed of at an appropriate facility. It is not expected that the additional solid waste would have a significant adverse impact on local or regional solid waste management plans or resources.

Visual and Cultural Resources

The proposed development has limited frontage on Route 58, the only public roadway on which the property is located. Therefore, only a portion of the development would be visible from the roadway. The views to the subject site from Route 58 would be of the two small buildings at the front of the site and of the buildings located on the eastern portion of the site. These would be visible through the entry drive.

Vegetation would be preserved and supplemented along the perimeter of the property, especially at the northern property boundary, adjacent to the residential development. As depicted on the aerial photographs prepared by Greenberg Farrow, existing vegetation on the residential property to the north also will assist in screening the proposed development. Screening vegetation would be planted along all the other property lines in order to minimize the views into the site from the surrounding properties. A dense vegetated border exists along the eastern property boundary. This vegetation, especially that situated within the residential property to the east, will assist in screening the proposed development.

The aerial photographs illustrate that the scale of the proposed retail buildings would blend with the scale of the non-residential buildings already existing along Route 58.

Building elevations depict the front facades of all of the proposed buildings. The elevations illustrate the varying facades of all the proposed establishments and how they work together to comprise a cohesive design as far as size and scale. The rendering, depicting several of the proposed retail establishments on the east side of the site, reinforces this idea of differing but complementary façade designs. The *Landscape Plan* also illustrates how cohesive landscaping can bring together the varying elements within the proposed retail center.

Overall, the proposed project visually conforms to the more-recent development that has occurred along Route 58. The size and scale of the proposed buildings are such that they will blend with existing buildings in the area. The existing vegetation and proposed supplemental screening vegetation along the rear and side yards will assist in blocking views into the site from neighboring properties. Therefore, the proposed project is not expected to have a significant adverse visual impact.

The applicant has prepared a *Lighting Plan* that meets the requirements of Article XLV *Outdoor Lighting* of the Town of Riverhead Zoning Code. The *Lighting Plan* includes four different types of luminaries – three pulse-start, metal halide flat glass pole-mounted types of 25 feet in height distributed throughout the parking areas, and one metal halide wall-mounted type. The *Lighting Plan* shows the proposed location of all luminaries as well as the details regarding quantities, types, lumens and foot candles. The *Lighting Plan* also illustrates the photometrics based upon the placement of the specific luminaries. The plans shows that 30 feet from the rear property line, adjacent to the residences to the north, lighting levels range from 0.0 to 0.8 foot candle. Along the western property line (industrial property) the levels range from 0.0 to 4.4 foot candles. The lighting level along the eastern property (adjacent to the vacant 50-foot-wide easement, lighting levels range from 0.0 0.3 foot candle. Finally, lighting levels along the property frontage of Route 58 range from 0.1 to 5.6 foot candles. These higher lighting levels are located near the property entrance. The applicant respectfully submits that the proposed *Lighting Plan* meets the requirements of Article XLV of the Town Code and provides a safe environment for employees and visitors to the site, while avoiding the potential for light spill over or intrusion.

Both the original Tracker Phase IA and Phase IB and Extended Phase IB archaeological reports indicate that no prehistoric or historic artifacts or features were found on the site. The reports recommended that no further archaeological investigations are warranted.

In addition, the OPRHP noted that based upon the original Phase IA and Phase IB reports conducted by Tracker, there would be no impact to cultural resources listed or eligible for listing on the State and National Register of Historic Places.

Therefore, the proposed action would have no significant adverse impact on archaeological or historical resources.

Proposed Mitigation Measures

SUBSURFACE CONDITIONS, SOILS AND TOPOGRAPHY

Subsurface Conditions

The required mitigation of this property, prior to development, would be limited based on the information provided by the previous site investigations and regulatory agencies. The most recent groundwater monitoring well results were reviewed by the SCDHS and the NYSDEC to determine if the Freon plume has been successfully remediated. According to a SCDHS letter, dated January 29, 2004, the results were satisfactory, and Malcolm Pirnie's request to abandon the remaining wells was approved. The wells were abandoned along with the remediation system in 2004. Therefore, it is assumed that mitigation of the groundwater plume is complete.

Similarly, closure of the on-site underground structures was granted by the SCDHS in late 2003. Mitigation of the existing, identified underground on-site structures can be considered complete. If during construction, any additional previously unidentified underground structures are encountered they will be properly delineated and sampled.

All drums and debris along with mounds of soil will also be removed and disposed of in accordance with applicable regulations. If the drums contain liquids, they will be tested prior to disposal. In addition, all drums will be inspected for damage and leakage.

A site-specific HASP, along with a site-specific MHP have been prepared for the subject property. Both of these documents address not only the previously-identified contaminants at the subject property, but also provide the proper protocol for encountering previously-unidentified contaminants and/or underground tanks and structures.

Soils and Topography

While no significant adverse impacts to soils or topography have been identified, the following mitigation measures would be implemented to ensure that soils and topographic impacts are minimized.

A SWPPP entitled *Soil Erosion & Sediment Control Plan* has been prepared. This plan was prepared to fulfill the requirements of the Phase II stormwater regulations. The *Soil Erosion & Sediment Control Plan* contains measures such as silt fence installation, a stabilized construction entrance, haybale protection, inlet protection and similar measures to minimize erosion and prevent sediment from being transported off the site (see further discussion in Section 4.2 of this DEIS). Details of the proposed sediment traps and typical retaining walls with silt fencing, among other details and notes are contained in the *Soil Erosion & Sediment Control Plan*. Methods and materials to be employed in the installation and maintenance of the erosion control measures would conform to the *New York Guidelines for Urban Erosion and Sediment Control*. Specific measures are outlined below:

- Proposed temporary sediment basins and a temporary drainage swale, if necessary, would be installed in the center of the site to prevent sediment runoff from the property;
- A construction vehicle storage/maintenance pad would be placed in the center of the site to limit the amount of vehicle movement on and off the site on a daily basis;
- Specific notes (narrative) describing the planned erosion and sediment control practices, including sediment basins, temporary construction access points, temporary block and crushed rock inlet protection, temporary diversions, the use of level spreaders, tree preservation and protection, land grading, clearing and grubbing, and temporary sediment traps and scour holes is contained in the *Soil Erosion & Sediment Control Plan Notes*. This plan also discusses the vehicle storage/maintenance area and spill containment plan, the overall construction schedule, the maintenance schedule for the erosion control measures and the planting schedule;

- Proper maintenance of erosion control measures would be performed by periodic inspection and after heavy or prolonged storm events. Maintenance measures include, but are not limited to, cleaning of sediment basins or traps, cleaning or repair of sediment barriers, cleaning and repair of berms and diversions and cleaning and repair of inlet protection;
- Appropriate means, such as spraying of exposed soils and the use of tarpaulins or the equivalent to cover exposed materials, would be used to control fugitive dust;
- A stabilized construction entrance would be maintained to prevent soil and loose debris from being tracked onto local roads. The construction entrance would be maintained until the site is permanently stabilized. The *Soil Erosion & Sediment Control Plan* contains details and sections of both the entrance pad and the wheel cleaning pad; and
- Sediment barriers, erosion control measures and tree protection measures would remain in place until disturbed areas are permanently stabilized. After permanent stabilization, paved areas would be cleaned and drainage systems cleaned and flushed, as necessary.

WATER RESOURCES

No significant adverse impacts to water resources were identified as part of the analysis presented in Section 4.2. In order to protect the groundwater quality and the resources of the Central Suffolk SGPA, the development would be connected to the municipal water and sewer system. Stormwater generated on the site would be collected and recharged in compliance with Town standards. A detailed *Soil Erosion & Sediment Control Plan* has been prepared for the proposed development. The proposed project would comply with the Phase II Stormwater Regulations. Finally, the proposed project would adhere to the recommendations set forth in the *208 Study* and the *NURP Study*. Implementation of these measures would assist in ensuring that potential impacts to water resources are minimized.

ECOLOGY

No significant adverse impacts to plants and animals have been identified. However, an extensive landscaping plan would be implemented.

ZONING, LAND USE AND COMMUNITY CHARACTER

As the proposed project exceeds the maximum building coverage and FAR permitted by the DRC zoning district, the purchase of TDRs would mitigate the increased density on the subject site, while protecting approximately 92 acres of open space/farmland within an APZ sending district. Not only would this mitigate the increased density, it would fulfill the purpose and intent of the DRC zoning district (§108.257), which encourages the use of such TDRs to preserve agricultural lands while increasing development yield on appropriately zoned properties, such as the case with the subject property. In addition, the purchase of 92 TDRs would foreclose the opportunity for the construction of the equivalent number of residential units in the sending district, thus minimizing the impacts of such residential units on community facilities and services as well other Town resources.

TRANSPORTATION

As discussed in the Build scenario, CR 58 currently has only one lane in the eastbound direction from Kroemer Avenue to Mill Road. This one lane eastbound stretch is presently becoming a bottleneck, and will only become more so, with or without the proposed project, as the No Build analysis confirms. To mitigate this condition, the developer proposes to contribute to the construction cost of a second eastbound lane from Kroemer Avenue to the southwest corner of CR 58 and Mill Road. A second eastbound left turn lane at the intersection would be part of this work.

At the intersection of the site access drive with CR 58, a new signalized intersection will be constructed. A westbound right turn lane leading into the site will also be constructed along the site frontage on CR 58.

The new signal at the site entrance will be coordinated, using wireless equipment, with the signals along CR 58 at Tanger Mall Drive, Kroemer Avenue, the signal soon to be constructed at Commerce Drive/Gatewood, and Mill Road

AIR QUALITY AND NOISE

Although no significant adverse environmental impacts upon air quality were identified, a typical dust suppression plan would be employed during the construction phase of the project.

The overall operation of The Shops at Riverhead project will have minor impacts on the local and regional air quality. As such, additional mitigation measures are not required based on the available information.

Although no significant noise impacts are anticipated, other than occasional heavy delivery truck movement, the proposed action involves the construction of a six-foot fence with associated evergreen vegetation along parts of the perimeter of the site. This fence would result in a five dBA insertion loss along the northern residential property line and less than one dBA insertion loss at the residential property line to the east. In addition, the configuration of proposed loading docks would reduce the noise level of truck back-up alarms. Finally, loading and unloading is subject to the regulations in Section 81-5.F of the Town Code, which regulates the hours of such activity to between 8:00 PM and 7:00 AM of the next day.

SOCIOECONOMICS

According to the *Economic Impact Analysis*, no significant adverse environmental impacts would occur due to the implementation of the proposed project.

COMMUNITY FACILITIES AND SERVICES

As no significant adverse environmental impacts were identified, no mitigation measures are proposed. However, the proposed project would contribute over \$720,500, annually to the Riverhead CSD, as well as an additional \$496,573± to other Town and County agencies and special districts.

In addition, buildings would be built to the New York State Building and Fire Codes, and thus, would incorporate the latest construction requirements.

A private security patrol would be provided, which would traverse the proposed retail center both during and after operating hours. In addition, a six-foot-high fence will be installed to assist in providing security to the neighboring residential properties.

VISUAL AND CULTURAL RESOURCES

Additional vegetative screening and a six-foot-high fence will be placed along the rear perimeter of the property in order to help screen the proposed project from the neighboring residential development.

As no significant adverse impacts to archaeological or historical resources were identified, no mitigation measures are proposed.

Alternatives and Their Impacts

Pursuant to 6 NYCRR Part 617, the DEIS must contain a description and evaluation of reasonable alternatives to the proposed action. Thus, this section of the DEIS analyzes the impacts of the following alternatives and quantitatively and qualitatively compare these impacts to those associated with implementation of the proposed action, based upon the specific issues outlined above:

- SEQRA-mandated No-Action Alternative (site remains as it currently exists);

- Alternative Site Plan (“By-Right”); and
- Alternative Site Plan (“All Retail”).

The table at the end of this section provides a comparison of the quantitative impacts of the proposed action and the alternatives examined.

NO-ACTION ALTERNATIVE

The no-action alternative involves leaving the site in its present condition including the remnants of the former use as well as wooded areas. The property is privately-owned and commercially-zoned. Thus, the no-action alternative does not meet the objectives of the project sponsor and is not viewed as a feasible alternative by the applicant.

The land use of the site would remain as it currently exists. The site would remain with the remnants of the former industrial development. The zoning of the property would not change, and the property would remain as privately-held, commercially-zoned land with the potential for redevelopment under current zoning. The no-action alternative would not fulfill the goals of the Riverhead Zoning Code and the *Town of Riverhead Comprehensive Plan*.

The aesthetic resources of the subject property would remain unchanged with the no-action alternative. Views would remain limited, however, remnants of the former use would be visible from Route 58. Views toward the site would remain and the appearance of the property would be unchanged.

ALTERNATIVE SITE PLAN (“BY-RIGHT”)

The Alternative Site Plan (“By-Right”) encompasses development of the site under the DRC zoning, with the use of TDRs, but without the relaxation of various zoning requirements (i.e., impervious surface area, contiguous landscaping, parking stall size) requested under the proposed action. This plan contains retail/bank use solely; no restaurants are proposed. The development would consist of eight buildings comprising a total of 406,423 square feet of gross floor area, with a building coverage of 383,039 square feet. Access to the site would be from Route 58. In order to develop the subject property as shown on the Alternative Site Plan (“By Right”), 29.63 TDR credits would be required, based upon regulations set forth in the Riverhead Zoning Code.

The Alternative Site Plan “By-Right” would comply with the all the dimensional standards of the DRC zoning district. TDRs would be purchased to allow the gross square footage proposed in this alternative (406,423). Therefore, this alternative would comply with the intent of the DRC zoning district to allow increased floor area in this TDR receiving area, while protecting farmland in the APZ zoning district, a TDR sending area. As discussed in Section 7.2.7, below, development under this alternative would require 29.63 (30) TDRs. This is approximately 62 TDRs fewer than that required for the proposed action. Therefore, less farmland would be preserved with the implementation of this alternative than with the proposed action.

The Alternative Site Plan (“By-Right”), meets all of the front, side and rear yard setback requirements. The following table presents a consistency analysis with other dimensional requirements:

Dimensional Requirements

Description	Required	Provided
Impervious Surface (Max.)	75% (1,357,425 sf)	75% (1,356,689 sf)
Contiguous Landscape (Min.)	20% (361,980 sf)	20% (362,220 sf)
Interior Parking Landscape (Min.)	10% (55,485 sf)	12.9% (71,396 sf)
Maximum Building Height (Max.)	50 feet	≤ 50 feet
Building Lot Coverage (Max.)		
(With Sewer)	15% (271,485 sf)	21.16% (383,039 sf)
(With TDRs)	30% (542,970 sf)	21.16% (383,039 sf)
Floor Area Ratio (Max.)		
(With Sewer)	20% (361,980 sf)	22.46% (406,423 sf)
(With TDRs)	60% (1,085,940 sf)	22.46% (406,423 sf)

Development under the Site Plan Alternative “By-Right” would conform to the zoning and would blend with the land use and community character along Route 58. Therefore, this alternative would not have a significant adverse impact on the environment.

The Alternative Site Plan (“By-Right”) would not require the relaxation of the landscaping or other standards. Therefore, there would be slightly less building square footage and mass on the property and slightly more landscaping. Therefore, there would be a slight change in the visual characteristics of this alternative versus the proposed action. However, this alternative and the proposed action would be similar in configuration, and the views into and from the site would not be significantly different. Overall, this alternative would not have a significant adverse impact on visual resources.

ALTERNATIVE SITE PLAN (“ALL RETAIL”)

The Alternative Site Plan (“All Retail”) encompasses development of the site under the DRC zoning, with the use of the most TDRs of all the alternatives, with the proposed relaxation of the same zoning requirements (i.e., impervious surface area, contiguous landscaping, parking stall size) requested under the proposed action. This plan contains retail/bank use solely; no restaurants are proposed. The development would consist of 11 buildings comprising a total of 514,580 square feet of gross floor area, with a building coverage of 496,053 square feet. Access to the site would be from Route 58. In order to develop the subject property as shown on the Alternative Site Plan, 101.73 TDR credits would be required, based upon regulations set forth in the Riverhead Zoning Code.

The Alternative Site Plan (“All Retail”) would not comply with the all the dimensional standards of the DRC zoning district. TDRs would be purchased to allow the gross floor area proposed in this alternative (514,580 square feet). Therefore, this alternative would comply with the intent of the DRC zoning district to allow increased floor area in this TDR receiving area, while protecting farmland in the APZ zoning district, a TDR sending area. Development under this alternative would require 101.73 (102) TDRs. This is approximately 10 TDRs more than that required for the proposed action. Therefore, more farmland would be preserved with the implementation of this alternative than with the proposed action. The following is a summary of the dimension requirements and this alternative’s consistency therewith.

Dimensional Requirements

Description	Required	Provided
Impervious Surface (Max.)	75% (1,357,425 sf)	88.3% (1,598,772 sf)
Contiguous Landscape (Min.)	20% (361,980 sf)	7.4% (134,525 sf)
Interior Parking Landscape (Min.)	10% (64,182 sf)	10.8% (69,345 sf)
Maximum Building Height (Max.)	50 feet	≤ 50 feet
Building Lot Coverage (Max.)		
(With Sewer)	15% (271,485 sf)	27.41% (496,053 sf)
(With TDRs)	30% (542,970 sf)	27.41% (496,053 sf)
Floor Area Ratio (Max.)		
(With Sewer)	20% (361,980 sf)	28.43% (514,580 sf)
(With TDRs)	60% (1,085,940 sf)	28.43% (514,580 sf)

Development under the Alternative Site Plan (“All Retail”) would conform to the zoning and would blend with the land use and community character along Route 58. Therefore, this alternative would not have a significant adverse impact on the environment.

The Alternative Site Plan (“All Retail”) would require the relaxation of the landscaping and other standards. There would be slightly more building square footage and mass on the property and slightly less landscaping than the proposed action. Therefore, there would be a slight change in the visual characteristics of this alternative versus the proposed action. There would be less building mass visible along Route 58, as there would only be one small building situated near the roadway. Overall, this alternative would not have a significant adverse impact on visual resources.

Comparison of Quantitative Impacts for Alternatives

Parameter	Proposed Action	No Action	Alternative Site Plan ("By-Right")	Alternative Site Plan ("All Retail")
Type of Development	Retail/Restaurant	None	Retail	Retail
Gross Floor Area in Square Feet	499,609	0	406,423	514,580
Building Coverage in Square Feet	480,609		383,039	496,053
Potable Water Use/Sewage Generation (gpd)	24,163	0	12,193	15,438
TDR Credits	92	0	30	102
Permanent Jobs	1,432	0	1,093	1,469
Annual Property Taxes	\$1,217,090	\$32,888	\$738,501	\$961,828
Solid Waste (tons per month)	121.6	0	53	74.4
Trip Generation				
AM Peak Hour	477	0	364	480
PM Peak Hour	2,063	0	1,665	2,089
Sat. Peak Hour	2,915	0	2,400	2,961

2.0 DESCRIPTION OF PROPOSED ACTION

2.1 INTRODUCTION

This DEIS has been prepared for the proposed action, which consists of the requested approval of a site plan application and use of Transfer of Development Rights (“TDRs”) to permit the construction of The Shops at Riverhead, a 499,609-square-foot (gross floor area) development within 12 buildings on approximately 41.55 acres. The subject property (former Hazeltine site) is located on the north side County Route 58 (Old Country Road), east of Kroemer Avenue, in the hamlet of Riverhead, Town of Riverhead, (approximately one-half mile east of the termination of the Long Island Expressway (see Figure 1). The site is designated on the Suffolk County Tax Maps (“SCTM”) as District 600 – Section 101 – Block 01- Lot 03 and District 600 – Section 119 – Block 01 – Lot 06. In addition, the proposed development involves the swap of 1.01± acres of land located within SCTM District 600 – Section 101 – Block 01 – Lot 03 for an equal amount of land located in adjacent lot SCTM No. District 600 – Section 119 – Block 01 – Lot 5.1.

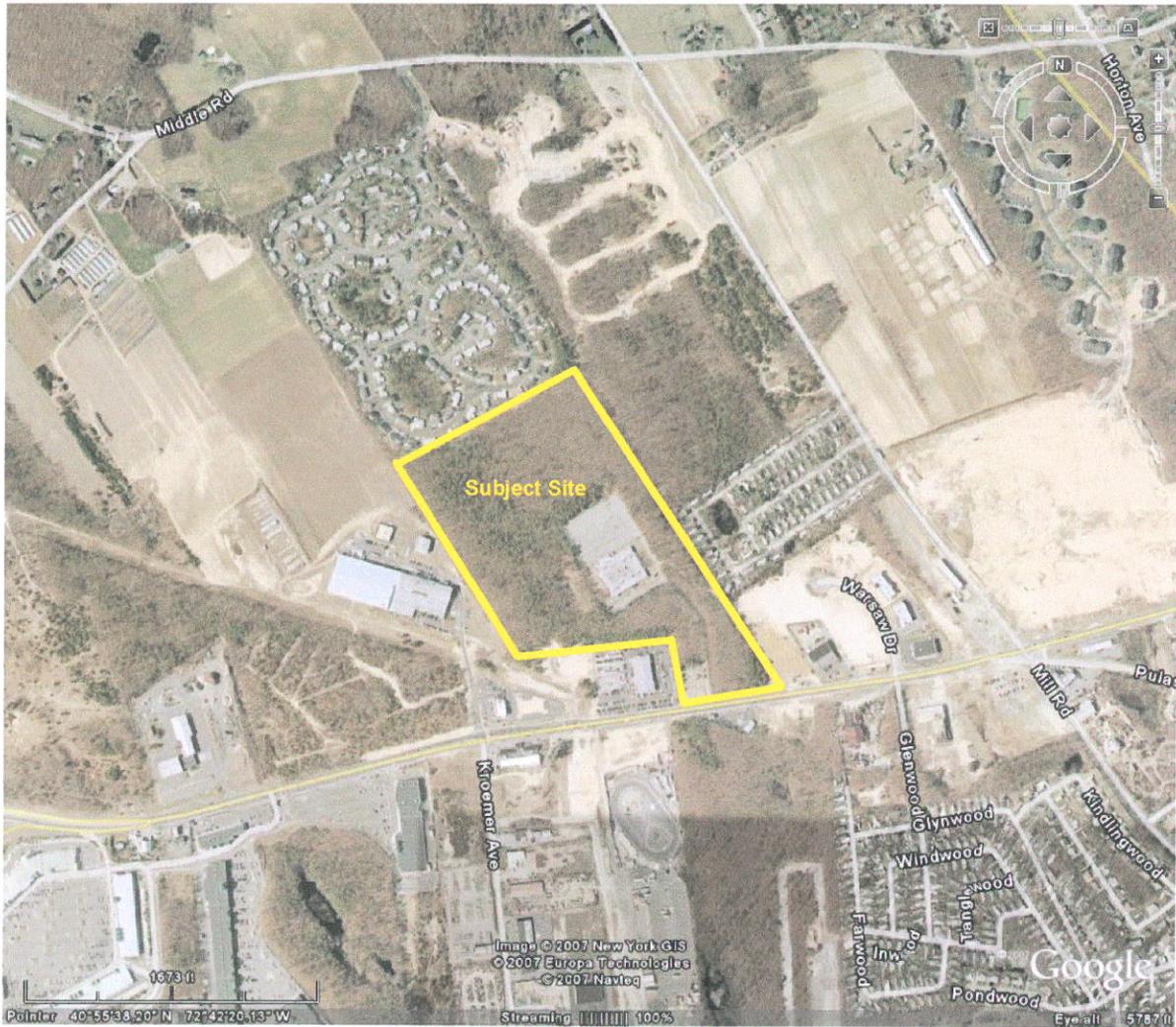
The DEIS is divided into 12 sections, the first of which is the Executive Summary. This section, Section 2.0, provides a description of all components of the proposed project including: a complete description of the proposed plan; a history of the site; the project’s purpose, benefits and needs; proposed demolition and construction; and the required permits and approvals.

Section 3.0 of this DEIS provides a discussion of the environmental setting for the project, broken down by topic. Section 4.0 of the DEIS is devoted to impacts that are likely to occur upon project implementation. Existing conditions, described in Section 3.0, are superimposed with post-development conditions. Potential beneficial and adverse environmental impacts are presented in this segment of the document. There is a corresponding impact analysis section for each of the existing conditions sections.

Section 5.0 of this DEIS presents mitigation measures that reduce or eliminate those impacts that were revealed in the analyses presented in Section 4.0. Section 6.0 enumerates those short-term and long-term impacts described within Section 4.0 that cannot be mitigated. Alternatives and their impacts are discussed in Section 7.0 of the DEIS. Among these alternatives is the “No-action” alternative that is required to be discussed pursuant to the SEQRA and its implementing regulations at 6 NYCRR Part 617. Other alternatives include an all-retail alternative without zoning relaxations and an all-retail alternative similar to the proposed action (without restaurants). Section 8.0 presents a brief discussion of natural resources consumed as a result of project implementation, and Section 9.0 includes an analysis of potential growth-inducing aspects of the proposed project. Section 10.0 of the DEIS presents a discussion of the energy sources to be used, expected levels of consumption and means to reduce consumption. The final two sections, 11.0 and 12.0, present a glossary of terms used in the DEIS as well as a list of references, respectively.



Site Location Map



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2.2 PROJECT DESCRIPTION

The proposed action involves a request for site plan approval and use of TDRs to permit the construction of a retail shopping center within the Destination Retail Center (“DRC”) zoning district within the Town of Riverhead. The site is zoned as a DRC and will be developed as such following zoning requirements for this zoning category. The proposed plan consists of a gross floor area of 487,435 of retail space and 12,174 square feet of restaurant space (to seat 318 people), with buildings situated along the perimeter of the site. Therefore, the total gross floor area of the proposed project is 499,609 square feet. Initial site clearing shall comprise approximately 25 acres to facilitate construction of the retail center. Impervious parking will be provided for 2,165 vehicles. In addition, 259 vehicle parking stalls have been reserved in various “land-banked green” areas along the perimeter of the site. The landbanked parking areas, if constructed, will be comprised of porous pavement. Landscaping and tree planting areas, specially-designated buffers, building setbacks, etc. will be provided per DRC zoning requirements, with relaxation of standards as allowed in receiving zones for TDRs to (a) allow for additional density on the subject site, and (b) provide for the preservation of more open space through the purchase of additional TDRs. Some natural vegetation will remain around the site, and additional plantings will supplement existing vegetation. Building data are shown on the *Site Plan* dated October 23, 2007 and prepared by E.S. Kalogeras, P.E., Consulting Engineer (“the project engineer”) (see Table 1 below).

Table 1 - Existing and Proposed Site Data

Site Coverage	At Present in acres (percent)	After Completion in acres (percent)
Natural Vegetation	37.45± (90.13±)	0.75± (1.81±)
Landscaping	0.00 (0.00)	4.31± (10.37±)
Roads, Buildings, Other Paved Surfaces	4.10± (9.87±)	36.49± (87.82±)
Total	41.55± (100.00±)	41.55± (100.00±)

Grading of the site will provide an almost flat surface throughout, except for subtle undulations allowing for conveyance of stormwater to proposed stormwater infrastructure inlets. Where gradual, stabilized grading cannot be created to meet adjacent properties, retaining walls shall be constructed to hold back soils at those abrupt grade changes, or grading easements will be required from adjacent properties, according to the project architect.

Water would be provided to the site by the Riverhead Water District, and sewage effluent would be disposed of via connection to the municipal sewer system (Riverhead Sewer District).

More specifically, the site will be designed to distribute water supply and sewage from and to the respective municipal improvement district's facilities and infrastructure, which are adjacent to the site. Water supply distribution mains will contain redundant connection from the Riverhead Water District, as mandated by the SCDHS, and be of such size as to provide adequate supply for fire protection, irrigation and domestic use purposes.

A gravity sewer collection system, comprised of underground pipes and manholes, shall be provided to serve all of the buildings on the site, and convey the collected wastewater to an on-site, below-ground, pumping station. Wastewater will be pumped from this collection point to the existing service connection of the Riverhead Sewer District, located at the southeast corner of the site. The Riverhead Sewer District will treat the site's sewage at its "state-of-the-art" sewage treatment plant, located off Riverside Drive, just south and west of Indian Island County Park. The Sewer District shall convey the site's sewage to its treatment facility via an existing network of gravity collectors and pumping stations. According to correspondence, dated October 18, 2007, from the Riverhead Sewer District (see Appendix P), the site is located within the boundaries of the sewer district. Also, the plans with the last revision, dated of October 17, 2007, have been received and approved by the Riverhead Sewer District. As per the aforementioned correspondence "[s]ewer connection is available to service this parcel" and the plant has capacity to treat the sewage generated by the proposed project, according to the Superintendent of the Sewer District.

According to the project engineer, the only drainage features present on the property consist of a natural drainage swale and man-made recharge basin located in the western portion of the site. Development of the project will result in these features being filled to accommodate parking facilities for the proposed destination retail center. In addition, the property is underlain by soils having good percolation characteristics, which will allow for the efficient and rapid infiltration of surface runoff. In accordance with Town regulations, all surface run-off generated on-site must be contained on-site, therefore all run-off will be directed to parking lot leaching catch basins and stormwater leaching piping or pools. The leaching piping may be of specially-coated steel or high-density polyethylene (“HDPE”) material. The leaching pools may be of precast concrete or HDPE material. All options of materials and method of stormwater infusion into the groundwater aquifer will be evaluated for this project. The final decision on materials will be determined by the project sponsor. All of the above methods and materials for stormwater recharge are viable for this project, hence, cost evaluation may be the governing factor of final selection.

2.3 SUMMARY OF EXISTING SITE CONDITIONS AND BRIEF HISTORY OF PROJECT

2.3.1 Site and Surrounding Area Conditions

The site is comprised of two parcels (identified as SCTM# 600-101-01-03 and 600-119-01-06) of 40 and 1.55 acres, respectively, for a total of 41.55 acres. In addition, the proposed development involves the swap of 1.01± acres of land located within SCTM District 600 – Section 101 – Block 01 – Lot 03 for an equal amount of land located in the adjacent lot designated as SCTM District 600 – Section 119 – Block 01 – Lot 5.1. The subject site is presently wooded with scrub oak and pine. Additionally, a portion of the site was originally cleared and developed as a major office/manufacturing facility including buildings, parking field and road network by Hazeltine Corporation, a former owner. The former buildings have been removed except for the first floor slabs and foundations, which comprise approximately 1.1 acres of the site, and which will be removed during site preparation for the proposed project. Most of the site is relatively flat with small pockets of depressions and hills scattered around the property. The site's former parking field and road network of approximately three acres will also be removed to allow for the proposed retail development and associated infrastructure.

All existing on-site utilities for the former Hazeltine Corporation have been abandoned either in-place or completely removed. Those remaining will not be re-used for the proposed project. The site is served by the Riverhead Water and Sewer Districts by adjacent municipal infrastructure on Route 58, in the form of transmission water mains and sewers. A connection to the Riverhead Sewer District for this site was provided across Route 58, near the property line when the Sewer District was extended in the 1990s. Large capacity water mains are located on the south side of Route 58 for future connection by the proposed project. The former site was not connected to the Sewer District and may contain a septic system, which may have been abandoned in place. The exact nature of the abandonment is not known at this time.

The subject property is currently zoned Destination Retail Center (“DRC”), which permits the development of retail stores or shops, car dealerships, hotels and banks. The subject site is also within the receiving zone for TDRs. An aerial photograph, depicting the current conditions of the site is included as Figure 2.

The subject site is located within the Central Suffolk Special Groundwater Protection Area (“SGPA”), a Critical Environmental Area (“CEA”).

The existing land uses surrounding the subject property are as follows:

North: Single-family residential uses predominate in the Foxwood Village to the north of the subject site;

East: To the east of the subject site are both residential and commercial uses;

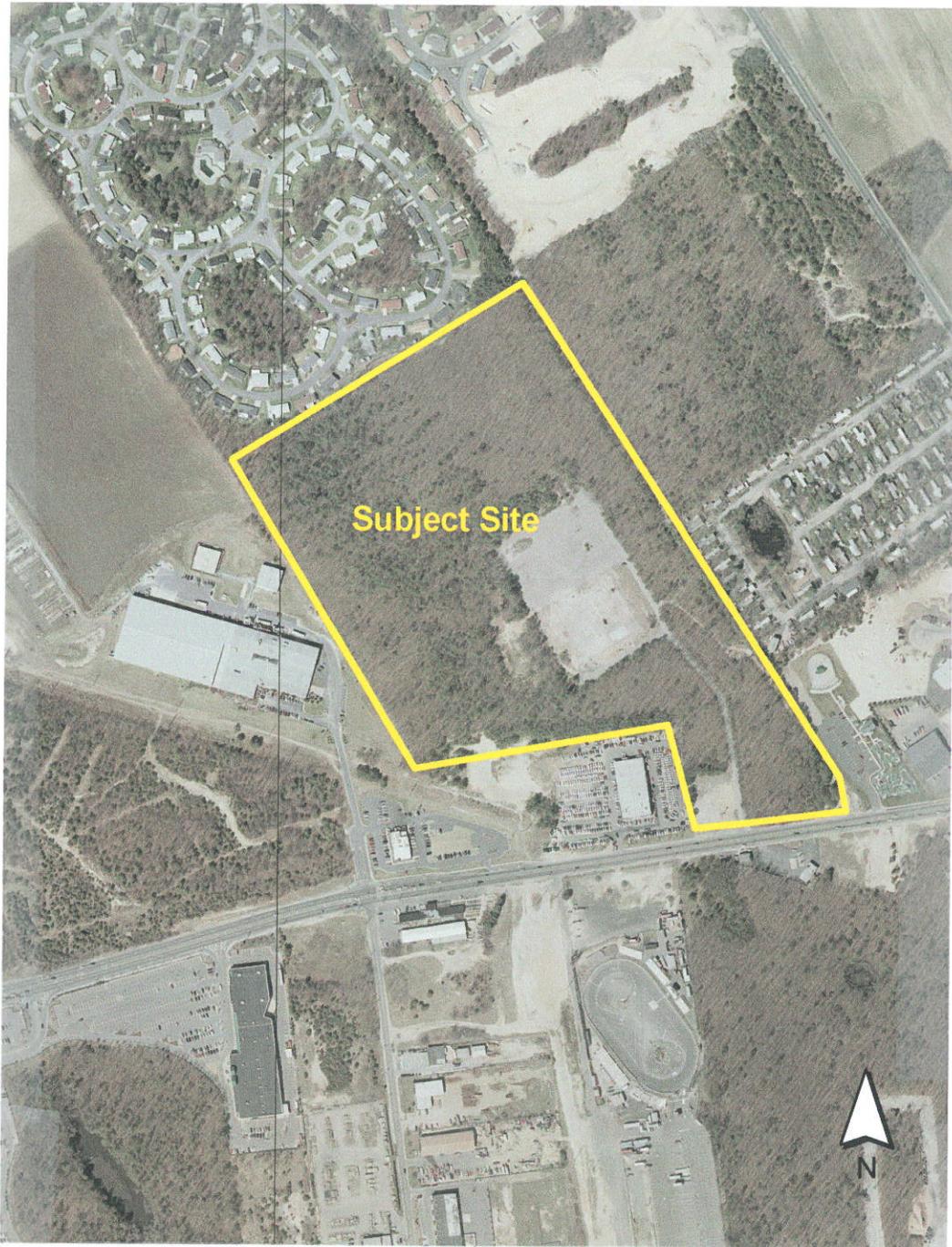
South: Land uses to the south of the subject site are commercial (office and retail), industrial, motor vehicle raceway, lodging, residential and vacant land; and

West: Uses to the west of the subject site are commercial, vacant land, and industrial.

A more detailed discussion of existing land uses is contained in Section 3.4.2 of this DEIS.



Aerial Photograph of the Subject Site



No Scale Available

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The roadway network surrounding the subject property has been described by Eschbacher VHB (the “traffic engineer”) as follows:

County Road 58 – Old Country Road has two eastbound lanes, two westbound lanes, and a center left turn lane from the Long Island Expressway to east of Mill Road, except that between Kroemer Avenue and Mill Road, there is only one eastbound lane. The speed limit on CR 58 in the study area is 45 mph. CR 58 is currently the subject of a planning study by the Suffolk County Department of Public Works (“SCDPW”);

Tanger Mall Drive provides access to and from the Tanger Mall complex on the south side of CR 58, west of the subject property;

Kroemer Avenue runs north/south, connecting CR 58 (south side) and NY 25, and has one lane in each direction. There is also a leg of Kroemer Avenue on the north side of CR 58 that provides access to Applebee’s restaurant and the facilities of Adchem Corporation. The speed limit on Kroemer Avenue is 30 mph;

Commerce Drive is a dead end street on the north side of CR 58. It serves a Panera Bread franchise, a Harley-Davidson dealer, and a group of medical/office buildings. Opposite Commerce Drive is Gatewood, a privately-maintained roadway that provides access to CR 58 from the Glenwood Trailer Park; and

Mill Road, east of the site, runs north/south from Osborne Avenue to NY 25. It has one lane in each direction, and the speed limit is 30 mph. The termination of Pulaski Street intersects Mill Road on the south side of CR 58, making an irregular five-legged intersection. The westbound approach of Pulaski Street to Mill Road is controlled by a stop sign. Pulaski Street runs southeast into Polish Town.

2.3.2 Brief History of the Property

According to the *Phase I Environmental Site Assessment: Former Hazeltine Property* prepared by Nelson, Pope & Voorhis, LLC, dated June 26, 2003, although there are no Sanborn Maps for the subject property, aerial photographs from 1957 through 1994 were examined for the property. The majority of the property had been vacant wooded land during that time, with the exception of the former Hazeltine industrial facility, which occupied a portion of the site until it was abandoned and mostly demolished.

Review of aerial photography indicated the presence of a large warehouse/office building and a Quonset hut as well as associated parking areas. All that remains are partial foundations and remnants of the buildings and parking areas. There were no buildings or foundations situated within the wooded area on the site. According to the DEIS prepared for Marquee Plaza (discussed below), Hazeltine used the Quonset Hut “primarily as a storage warehouse in which a small area was set aside for use as a training area for electronic assembly.” The building was constructed between 1948 and 1955. The “larger, one-story main production building, encompassing approximately 45,000 s.f., was built by Hazeltine in 1957...Virtually no additional clearing has occurred on the site since 1957” (Page1-1).

The property was the subject a prior DEIS for the formerly-proposed development known as Marquee Plaza. An application was submitted to the Town of Riverhead Town Board by the previous applicant (Route 58, Riverhead LLC) for a special permit pursuant to Chapter 108 of the Town Code seeking approval for the construction of a 55,000-square-foot multi-screen indoor movie theater and two restaurants of 7,200 square feet and 3,600 square feet. A Full Environmental Assessment Form was submitted to the Town on October 17, 2001. The action was classified as “Type I” and the Town Board declared itself to be Lead Agency in February 2001. A Positive Declaration was issued, and a DEIS was prepared for the proposed project. The DEIS was accepted by the Town Board in August 2002.

A Final EIS was prepared and accepted by the Town Board in December 2002. The Town Board adopted a Findings Statement on January 22, 2003. Subsequent to the adoption of the Findings Statement, the Suffolk County Planning Commission recommended that the project be approved. However, subsequent to the adoption of the Findings Statement, the Riverhead Planning Board recommended approval with the elimination of the restaurants since they were not contemplated in the then-proposed DRC district. The Planning Board again reviewed the FEIS and the Town Board amended the original Findings Statement, thereby concluding the SEQRA process.

Subsequent to the conclusion of the SEQRA process, the Town Board granted the request for special permit to allow the development of the restaurant use within Riverhead Marquee Plaza.

Development of Marquee Plaza did not occur and the property was sold to the current owner.

2.4 PURPOSE, NEED AND BENEFITS OF THE PROPOSED PROJECT

The purpose of the proposed project is to develop the privately-owned, commercially-zoned subject property with retail development in conformance with the recommendations of the *Town of Riverhead Comprehensive Plan* and the site's DRC zoning classification. The proposed development would meet the purpose and intent of the DRC zoning district, which is:

“to provide a location for large retail centers along Route 58 that attract customers from the East End of Long Island and beyond, while linking development along the Route 58 corridor to open space protected in the Agricultural Protection (APZ) Zoning Use District. It is the further intent to allow increased floor area in the DRC Zoning Use District with the use of transferred development rights where appropriate.”

The use of TDRs in the development of this project would assist in meeting the goals of the Town to protect open space in the APZ zoning district in other portions of Riverhead, while concentrating development in areas that can accommodate increased square footage due to the availability of infrastructure capacity.

2.5 DEMOLITION AND CONSTRUCTION

2.5.1 Demolition

In order to redevelop the subject property, the proposed project involves the demolition of the remainder of the structures that are present on the subject property. These structures include concrete slabs and partial foundations associated with the former Hazeltine buildings and parking areas. No existing structures would remain. According to the project architect, the building foundation is going to be crushed and used on site as fill.

Prior to demolition and construction on the subject property, the following would be performed:

- Erosion and sedimentation control measures would be installed on the site. It should be noted that a Stormwater Pollution Prevention Plan (“SWPPP”) detailing specific erosion and sedimentation control measures to be utilized has been prepared and is included in this DEIS;
- All buildings would be thoroughly inspected for the potential for hazardous materials, and any such materials, if encountered, would be handled and disposed of in accordance with prevailing regulations;
- A rodent survey of the buildings would be performed and a rodent-free certification would be obtained prior to any demolition at the subject property; and
- Demolition permit(s) would be obtained from the Town of Riverhead prior to any demolition at the subject property.

2.5.2 Construction

According to Greenberg Farrow, the project is proposed to be constructed in one phase with the developer (Heritage-Riverhead Retail Developers, LLC) responsible for all of the site work and all of the pad preparation. Responsibility for construction of the various building will depend on the final business terms of the legal agreements between the developer and the various tenants. It is anticipated that the majority of the buildings will be constructed by the developer with some of the buildings (including the Costco and furniture store and possibly) others being constructed by the tenants. Demolition and building construction will occur in conformance with Chapter 52, *Building Construction*, of the Town of Riverhead Town Code (hereinafter the “Town Code”). The current schedule anticipates a 17-month build-out, which accounts for approximately four months dedicated to civil design, civil design approval, and permit acquisition (see schedule in Appendix A). The following is the proposed timeline for construction activity (some of the activities may be overlapping):

- Civil Design (30 days);
- Civil Design Approval (30 days);
- Permit Acquisition (30 days);
- Clearing (20 days);
- Subgrade Preparation for Buildings (20 days)
- Mass Excavation (56 days);
- Finish Building Pads (20 days);
- Subgrade Preparation for Parking Areas (60 days);
- Install Stormwater System (60 days);
- Install Water System (60 days);
- Connection to Sewer System (60 days);
- Install Dry Utilities (60 days);
- Install Site Lighting (30 days);
- RCA Parking Lot (60 days);
- Concrete Work (30 days);

- Install Landscaping (30 days);
- Install Paving (30 days); and
- Site Clean-up (10 days).

Hours of Construction

Hours of construction activity would be limited so that they would comply with Chapter 81, *Noise Control*, of the Town Code. According to the Town Code, major construction work (including construction and demolition, excavating and earthmoving) may only take place between 7:00 AM and 8:00 PM, weekdays. This schedule does not apply to interior alteration and repair work within an entirely-enclosed building. When constructing during permitted times, the sound level cannot exceed 80 dBA at the property line. Furthermore, impulsive peak sound pressure level at or across a real property line cannot exceed 130 dBA.

2.6 REQUIRED PERMITS AND APPROVALS

In order to implement the proposed action, the following permits and/or approvals would be required:

Table 2 – Required Permits and Approvals

Permit or Approval	Agency
Site Plan Approval and Relaxation of Dimensional Regulations	Town of Riverhead Planning Board
Subdivision Approval for Land Swap	Town of Riverhead Planning Board
Water Connection	Riverhead Water District
Sewer Connection	Riverhead Sewer District
Water and Sanitary Review	Suffolk County Department of Health Services
Highway Work Permit	Suffolk County Department of Public Works
Referral	Suffolk County Planning Commission
SPDES General Permit for Stormwater Discharges for Construction Activities: GP-02-01 and Notice of Intent	New York State Department of Environmental Conservation

3.0 EXISTING ENVIRONMENTAL CONDITIONS

3.1 SUBSURFACE CONDITIONS, SOILS AND TOPOGRAPHY

3.1.1 Subsurface Conditions

A Phase I Environmental Site Assessment (“ESA”), dated June 26, 2003, was completed by Nelson, Pope & Voorhis, LLC (“NP&V”) for a property consisting 66.6 acres (including the 41.55±-acre subject property). The additional acreage extended from the northeast portion of the subject site to Mill Road. Upon completion of the Phase I ESA, a Limited Phase II Environmental Site Assessment (Phase II), dated September 9, 2003, was completed by NP&V (see Appendix B). See Section 2.3.2 of this DEIS for a brief history of the subject property. The most-recent use of the subject property was as the former Hazeltine industrial facility, consisting of a large main manufacturing building, a Quonset Hut used for training and storage and associated parking areas.

The Phase I ESA was conducted to identify recognized environmental concerns (“RECs”) and potential environmental concerns (“PECs”) for the subject property. According to the ESA the following RECs were identified:

- A 13,000 pound Freon spill that occurred adjacent to the northwest side of the Hazeltine building in 1987, which was found to have impacted the underlying groundwater. This may have been associated with the aboveground Freon storage tank that was located on the west side of the building;
- The existing on-site sanitary system and associated subsurface leaching pools, which may have received industrial waste from the main on-site building. This includes the sanitary system located off the southwest corner of the building, two leaching pools located on the south side of the building, the leaching pool located on the north side of the building, and the two leaching pools located off the northwest corner of the building;

- The unidentified discharge point of a floor drain located in the northern storage room of the main building;
- Large batteries and transformers located in the southern storage room;
- A large soil mound of unknown origin located in the woods off the northwest corner of the paved parking area;
- The soil surrounding the former in-ground hydraulic lifts located in the former Quonset hut in addition to the unidentified discharge points of seven floor drains also located in the former Quonset hut. Additionally, there was a stained area north of this hut;
- The condition of the recharge basin, which received discharge from a clay pipe and was used for recharge from the air stripping system that was shut down in August 1999. There are two recharge basins located on-site. A small recharge basin (now off-site) is present in the northeast corner of the paved parking area of the main building and a large recharge basin is located in the southwest corner of the parking area. No subsurface stormwater leaching pools were observed in the paved parking areas located on-site;
- The use and condition of a vent pipe on the west side of the small transformer room and the possible linkage to an underground storage tank (“UST”);
- The presence of two water supply wells -- one on the south side of the main building and the other on the north side of the former Quonset hut; and
- The possible presence of asbestos containing material (“ACM”) in the main building. Several areas within the building contain vinyl floor tiles, which may contain ACM.

In order to address the RECs identified in the Phase I ESA, a Limited Phase II was completed by NP&V that included a geophysical survey, Geoprobe soil probes, hand auger samples, headspace analysis and the collection of soil samples for laboratory analysis.

Geophysical Survey

The geophysical survey consisted of ground penetrating radar (“GPR”) and was used to determine the presence and location of USTs and on-site sanitary leaching pools associated with the main building. The UST was identified off the southern wall of the main building, and the leaching pools were located off the southwest corner of the building. The GPR was also used in the area of the Quonset hut to identify six concrete pits, three on each side of the building that received the discharge from six of the seven floor drains. The seventh floor drain was tentatively identified as discharging to the on-site sanitary system.

Soil Borings/Sampling

Soil borings were drilled around the main building and the Quonset hut using a Geoprobe. Three soil borings were drilled on three sides of the UST located near the main building. The depth of the borings ranged from eight to 12 feet below grade surface (“bgs”) and 12 to 16 feet bgs. Headspace analysis was conducted on the soil samples from each boring, and the sample with the highest headspace reading was selected for laboratory analysis. Four of the eight sanitary leaching pools were also sampled using the Geoprobe. In addition, two filled-in leaching pools located off the northwest corner of the main building were sampled.

In the vicinity of the Quonset Hut, six soil samples were collected from the soil surrounding two in-ground hydraulic lifts and two hydraulic fluid tanks at depths of eight to ten feet bgs. In addition, a soil sample was collected at a similar depth from the on-site sanitary leaching pool located off the northeast corner of the building.

Hand Auger Soil Samples

Soil samples were collected from the leaching pool associated with the main building floor drain, the mound of soil located off the northwest corner of the parking lot and the recharge basin to the west of the main building utilizing a hand auger. These samples were collected from the top six inches of material at all the sampling locations.

Analytical Results

The results of the headspace analysis that was conducted on the soil samples that were collected from around the main building UST did not indicate any significant hydrocarbon soil vapor levels. The soil samples collected during the field activities were submitted for analytical testing including petroleum fingerprint analysis, volatile organic compounds (“VOCs”), semi-volatile organic compounds (“SVOCs”), Resource Conservation and Recovery Act (“RCRA”) metals, and Suffolk County Department of Health Services (“SCDHS”) SOP 9-95 Pump-out and Soil Cleanup Criteria, including metals.

The results of the samples collected from the main building sanitary system and floor drain, the Quonset hut sanitary system and four of the six floor drains, the recharge basin, the soil mound, and the UST did not detect any compounds except for slightly elevated metals, which were still below applicable regulatory standards. Similar results were found for the soil samples collected from the in-ground lifts and the hydraulic fluid tanks with regard to petroleum fingerprint analyses and SVOCs.

The samples from the two remaining Quonset hut floor drains did exhibit elevated concentrations of several SVOCs and metals, and the samples collected from the main building leaching pools exhibited slightly elevated VOCs and metals. However, only chrysene in the sample from floor drain #6 in the Quonset hut exceeds the SCDHS SOP 9-95 standard.

Conclusion

The results from the NP&V Limited Phase II indicate that the soil samples collected from the around the main building UST and sanitary system and the Quonset hut sanitary system do not exceed the SCDHS SOP 9-95 standards. The results from the six pits receiving the discharge from the floor drains in the Quonset hut indicate that a few SVOCs were detected, but only chrysene in one sample was elevated above the SCDHS standard. The results from the two main building leaching pools indicated slightly-elevated VOCs and metals, but all were below the SCDHS standards.

The results from the main building floor drains, the recharge basin, the soil mound located near the main building, and the in-ground lifts/hydraulic fluid tanks in the Quonset hut indicated that none of the parameters analyzed for were elevated or exceeded the SCDHS standards.

In October 2003, NP&V remediated the floor drain discharge pit located off the northeast corner of the former Quonset hut (which has since been removed) due to previously detected SVOCs. In addition, NPV traced the overflow pipe to a stone leaching field, which appeared to be clean. A drywell on the northeast corner of the former hut was uncovered and a line traced to a discharge pit on the north side of the former building. The soil was removed from this pit, and a concrete base was discovered at the bottom, therefore, no further sampling was completed by NPV. The overflow pool did not appear to have been used, and, accordingly, was not cleaned out or sampled. A cesspool was uncovered on the south side of the former hut. A sample was collected for VOCs and SVOCs. In addition, an endpoint sample was collected from the floor drain discharge point. Based on the results of these samples, in addition to the lack of evidence of a UST, NP&V requested a closure letter from the SCDHS. This closure letter was issued on October 31, 2003 (see Appendix B).

Additional Environmental Data

A total of 14 groundwater monitoring wells were installed both on-site and off-site since the early 1990s and have been sampled on a continuous basis. The initial results indicated significant groundwater impacts from Freon and to a lesser extent TCA (1,1,1-trichloroethane). The on-site air stripping system reportedly removed approximately 10,333 pounds of Freon from April 1993 to November 1998. The air stripping system was shut down in August 1999, and the monitoring of the groundwater wells has been reduced over the years with the continued decrease in the detected concentration of Freon.

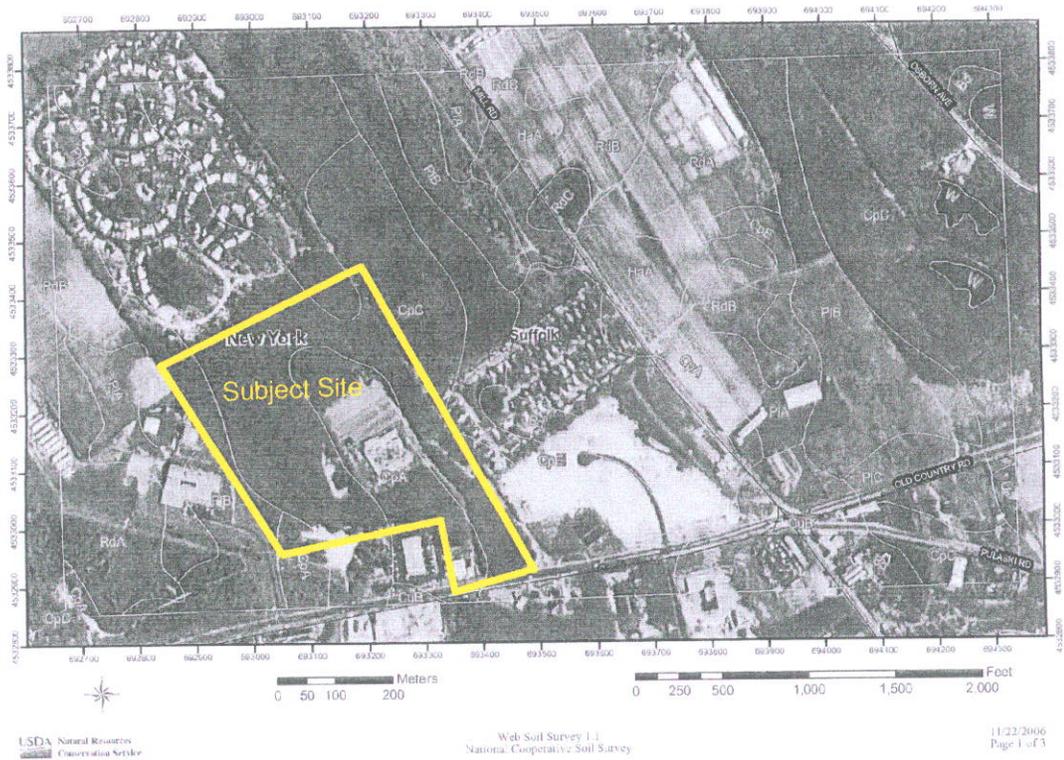
In October 1999, SCDHS stated that no further groundwater remediation was necessary, however groundwater monitoring both on-site and off-site was still required. This sampling continued through 2003 even as the treatment system, including the air stripper and associated piping, were being dismantled. In January 2004, SCDHS, in consultation with the New York State Department of Environmental Conservation (“NYSDEC”) stated that no further action was required at the Site based on the groundwater results. In March 2004, Malcolm Pirnie stated that all the remaining monitoring wells have been abandoned (see Appendix B).

3.1.2 Soils

According to the *Soil Survey of Suffolk County, New York* (USDA, 1975) (hereinafter “Soil Survey”), soils are classified according to distinct characteristics and placed (according to these characteristics) into “series” and “mapping units.” A “series” is a group of mapping units formed from particular disintegrated and partly weathered rocks which lie approximately parallel to the surface and which are similar in arrangement and differentiating characteristics such as color, structure, reaction, consistency, mineralogical composition and chemical composition. “Mapping units” differ from each other according to slope and may differ according to characteristics such as texture.



SOIL SURVEY OF SUFFOLK COUNTY, NEW YORK



Source: United States Department of Agriculture, *Web Soil Survey*
<http://websoilsurvey.nrcs.usda.gov/app/>

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The soils on the subject property consist of several series including the following:

- Carver and Plymouth Sands (CpA) - 0 to 3 percent slopes;
- Carver and Plymouth sands (CpC) - 3 to 15 percent slopes;
- Plymouth loamy sand (PIA) - 0 to 3 percent slopes; and
- Plymouth loamy sand (PIB) - 3 to 8 percent slopes.

The following subsection contains descriptions of the soil types found on the subject property as summarized from the *Soil Survey*.

Carver and Plymouth Sands, 0 to 3 Percent Slopes (CpA) - These soils are mainly on outwash plains; however, they are also on some flatter hilltops and intervening draws on moraines. A small part of this mapping unit is slightly undulating. This unit can be made up entirely of Carver sand, entirely of Plymouth sand, or of a combination of the two soils.

The Carver soil in this mapping unit has the profile described as representative of the Carver series. The Plymouth soil has a profile similar to the one described as representative of the Plymouth series, except that its texture is sand throughout the profile, rather than loamy sand.

Included with these soils in mapping are small areas of Plymouth loamy sand and areas of loamy sands that have a profile similar to soils of the Carver series. Also included are soils that are like Carver soils that have dark iron and humus coatings on the sand grains in the upper part of the subsoil. Also included are small areas of Haven or Riverhead soils on moraines that have dense cover of vegetation and a complex topography.

The hazard of erosion is slight on the soils in this unit. These soils are droughty. Natural fertility is low.

Carver and Plymouth Sands, 3 to 15 percent slopes (CpC) - These soils are mainly on rolling moraines; however, they are also on the side slopes of many drainage channels on the outwash plains. Individual areas of this mapping unit are large on the rolling topography of the Ronkonkoma moraine, and in these areas slopes are complex. On the outwash plain, this unit is in long, narrow strips parallel to drainageways. This unit can be made up entirely of Carver sand, entirely of Plymouth sand, or of a combination of the two soils.

The Carver soil in this mapping unit has a profile similar to that described as representative of that series. The Plymouth soil in this unit has a profile similar to that described as representative of the Plymouth series, except that its texture is sand throughout the profile, rather than loamy sand.

Generally included with this unit in mapping are areas of Plymouth loamy sand or loamy coarse sand that are very close to sand in texture. Also included are small areas of Carver and Plymouth sands, 0 to 3 percent slopes. Small areas of these soils on moraines are as much as 25 percent gravel throughout, especially along the crest of low ridges. Also included are soils similar to this Carver soil that have dark iron and humus coatings on the sand grains in the upper part of the subsoil. In the bottom of many closed depressions, these soils have siltier accumulations from adjoining hillsides; and in some places silty lenses are deep into the substratum.

The hazard of erosion is slight to moderate on the soils in this unit. These soils are droughty, and natural fertility is low. In some places, slope is a limitation to use.

These soils are not well suited to crops commonly grown in the county. These sandy soils severely limit installation and maintenance of lawns and landscaping shrubs. Almost all of these soils are in woodland. Many areas in the western part of the county, particularly along the north shore, are used as homesites.

Plymouth loamy sand, 0 to 3 percent slopes (PIA) - This soil has the profile described as representative of the series. It is mainly on outwash plains south of the Ronkonkoma moraine. It is also on flat hilltops and in drainageways on morainic deposits. The areas generally are nearly level, but they are somewhat undulating in some places. Areas on outwash plains are large and uniform, and areas on the moraine are small and irregular.

Included with this soil in mapping are small areas of Riverhead soils that have a texture that is marginal to loamy sand. Also included are some loamy sands that have a profile similar in appearance to the soils of the Carver series.

The hazard of erosion is slight on this Plymouth soil. This soil is fairly well suited to crops commonly grown in the country. Many areas were formerly cleared for farming, but most of these areas are idle or are in brush or trees. Small areas that are in large tracts with Riverhead or Haven soils are the only areas used for farming. In the western part of the county, most of this soil is used for housing developments and as industrial sites.

Plymouth loamy sand, 3 to 8 percent slopes (PIB) - This soil is on moraines and outwash plains. Slopes are undulating, or they are single along the sides of intermittent drainageways. The undulating areas generally are large. The areas along intermittent drainageways are narrow and long, and they follow the course of the drainage channel.

The hazard of erosion is slight on this Plymouth soil. This soil tends to be droughty.

This soil is fairly well suited to the crops commonly grown in the county. Some areas were formerly used for farming, but most such areas are in brush or are idle. In the western part of the county, this soil is used mainly for housing developments.

Table 3 summarizes the planning and engineering limitations of the various soils found on the subject property. However, it should be noted that most of these limitations can be overcome by proper and careful design, as will be discussed in Section 4.1.2 of this DEIS.

Table 3 - Soil Engineering and Planning Limitations

Symbol	Mapping Unit	Slopes	Homesites	Streets and Parking Lots	Lawns and Landscaping	Sewage Disposal Fields
CpA	Carver and Plymouth Sands	0-3%	SL	SL	SE(A)	SL
CpC	Carver and Plymouth Sands	3-15%	SL to M(B)	M to SE(B)	SE(A)	SL to M(B)
PIA	Plymouth loamy sand	0-3%	SL	SL	SE(A)	SL
PIB	Plymouth loamy sand	3-8%	SL	M(B)	SE(A)	SL

Engineering and Planning Limitation Rating:

SL = Slight - Few or no limitations or limitations can be overcome at little cost.

M = Moderate - Limitations are harder to correct or not possible to correct entirely.

SE = Severe - Use severely limited by some characteristics difficult or costly to overcome.

Reasons for Limitations:

(A) Sandy Surface Layer

(B) Slope

Source: *Soil Survey of Suffolk County, New York*, United States Department of Agriculture, Soil Conservation Service (1975)

Information conveyed in the *Soil Survey of Suffolk County* is general data that is useful for preliminary assessments and guidelines as to the characteristics of the soil to depths of approximately five feet. Due to the generalities and the potential for actual on-site soils to differ from the *Soil Survey*, actual on-site investigations were performed.

Two sets of soil borings were performed by Whitestone Associates, Inc. (hereinafter “Whitestone”) in June and July, 2006. The first geotechnical investigation was performed on June 23, 2006 for a proposed “anchor” retail store to be situated in northwestern portion of the subject property. Borings were taken at the all four corners (B-1 through B-4) of the proposed buildings (see Figure 4 and Appendix C).¹ According to Whitestone, the primary goal of the preliminary subsurface soils investigation was assess soil bearing capacity, soil re-use options, depth to groundwater, and impact of potentially problematic soils. The field and laboratory protocols are described in the *Report of Preliminary Geotechnical Investigation, Riverhead, New York, June 30, 2006* (see Appendix C of this DEIS). A general description of the subsurface conditions follows. The specific soil boring data are included in Appendix C of this DEIS.

Surface Cover: The borings encountered approximately two inches of topsoil at the surface.

Natural Sand: Underlying the topsoil, the borings encountered natural coastal plain deposits that generally consisted of either yellowish brown, relatively loose dense, medium to fine sand with variable amounts of silt and gravel; and brownish yellow, relative medium dense, medium to fine sand with a trace amount of silt and variable amounts of gravel. The borings were terminated within these materials at depths of approximately 15 to 18 feet below ground surface (“bgs”).

Groundwater: Groundwater was encountered in boring B-3 and B-4 at depths of approximately 7.5 feet bgs, and 10.5 feet bgs respectively, as part of this investigation. Groundwater conditions likely will fluctuate seasonally with tidal effects and following periods of rain.

¹ It should be noted that the site plan used as the base map for the soil borings was an earlier version of the layout and does not reflect the currently-proposed plan, which is the subject of this DEIS.

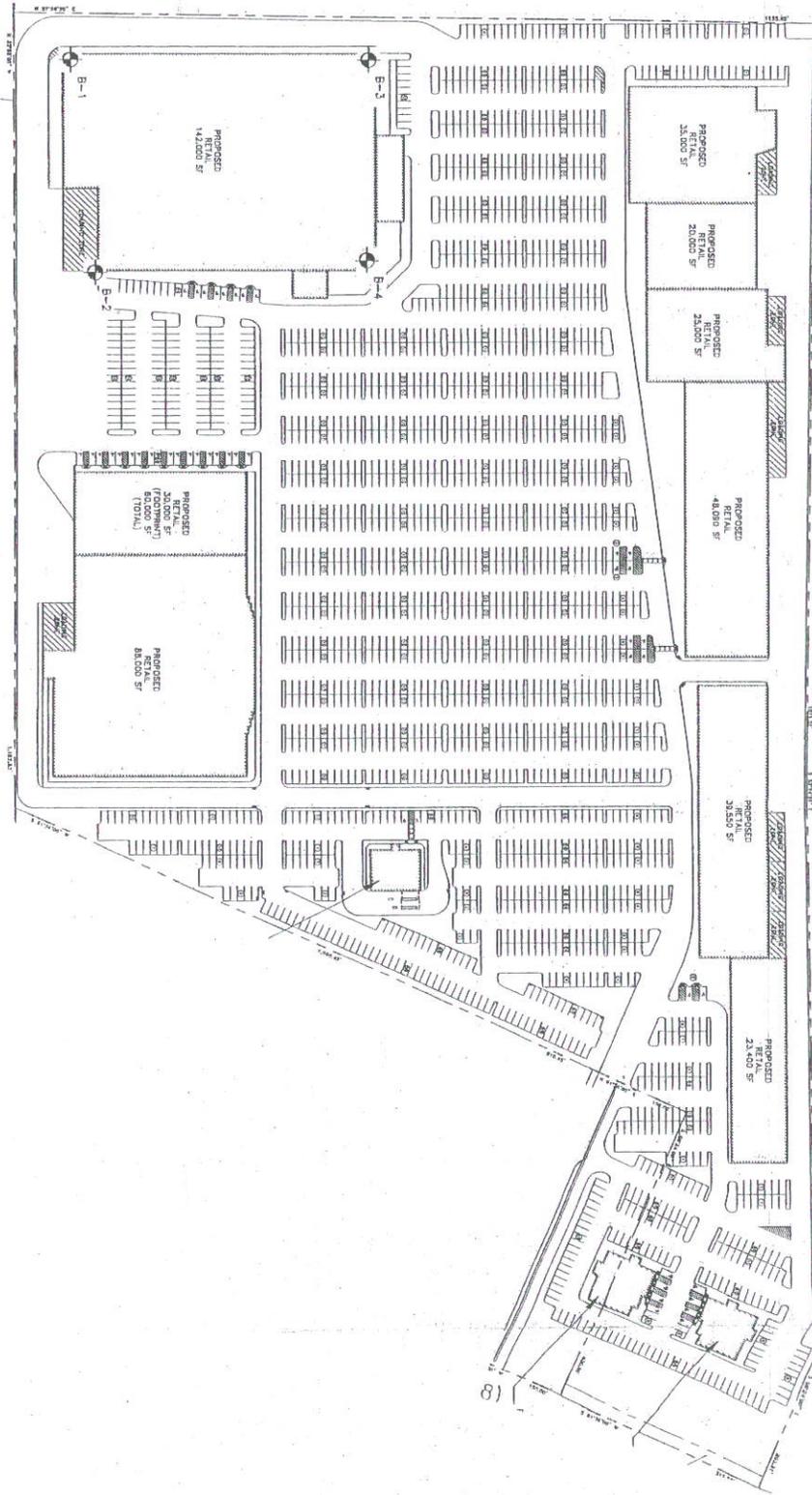


Figure 4

LEGEND

 B-1 BORING LOCATION (APPROX.)
 SUBJECT PROPERTY BOUNDARY (APPROX.)

REFERENCE

THIS PLAN IS BASED UPON A DECEMBER 5, 2005 ALIGNMENT PLAN PREPARED BY NELSON & POPE ENGINEERS & SURVEYORS

TITLE: **BORING LOCATION PLAN**

CLIENT: COSTCO WHOLESALE CORPORATION

PROJECT: PROPOSED COSTCO WHOLESALE FACILITY
 OLD COUNTRY ROAD (CR 5B)
 RIVERHEAD, SUFFOLK COUNTY, NEW YORK



WHITESTONE ASSOCIATES, INC.

35 TECHNOLOGY DRIVE
 WARREN, NEW JERSEY 07059
 908.668.7777 • 908.754.5936 FAX

30

PROJECT #: WJ06-8805

BY: RF

PROJ. MGR.: KTD

DATE: 06/29/06

SCALE: N.T.S.

FIGURE: 1

The geotechnical report noted that the soils encountered at the site should be adequate for shallow foundations and should have a high permeability for stormwater infiltration, contingent upon the application of the recommendations presented in the report (see Appendix C) and further subsurface investigation.

The second geotechnical investigation was performed in July 2006 over other portions of the subject property. Fifteen (15) test borings were conducted throughout the subject property (see Figure 5 and Appendix C). Field and laboratory testing protocols are discussed in July 17, 2006 geotechnical report located in Appendix C of this DEIS. A general description of the conditions encountered is provided below and the conditions at the specific soil borings are contained in Appendix C.

Surface Cover: The borings encountered approximately two inches of topsoil at the surface. Existing cracked asphalt pavement and a concrete slab on grade with vegetation growing between the cracks was also observed during the visual site inspection within the proposed new parking lot area.

Natural Sand: Underlying the topsoil, the borings encountered natural coastal plain deposits that generally consisted of either brownish orange, relatively loose dense, medium to fine sand with variable amounts of silt and gravel; and light yellow to white, relatively medium dense, medium to fine sand with a trace amount of silt and variable amounts of gravel. The borings were terminated within these materials at a depth of approximately 18 feet bgs.

Groundwater: Groundwater was encountered in boring B-5 at a depth of approximately 12.5 feet bgs. Groundwater conditions likely will fluctuate seasonally with tidal effects and following periods of rain.

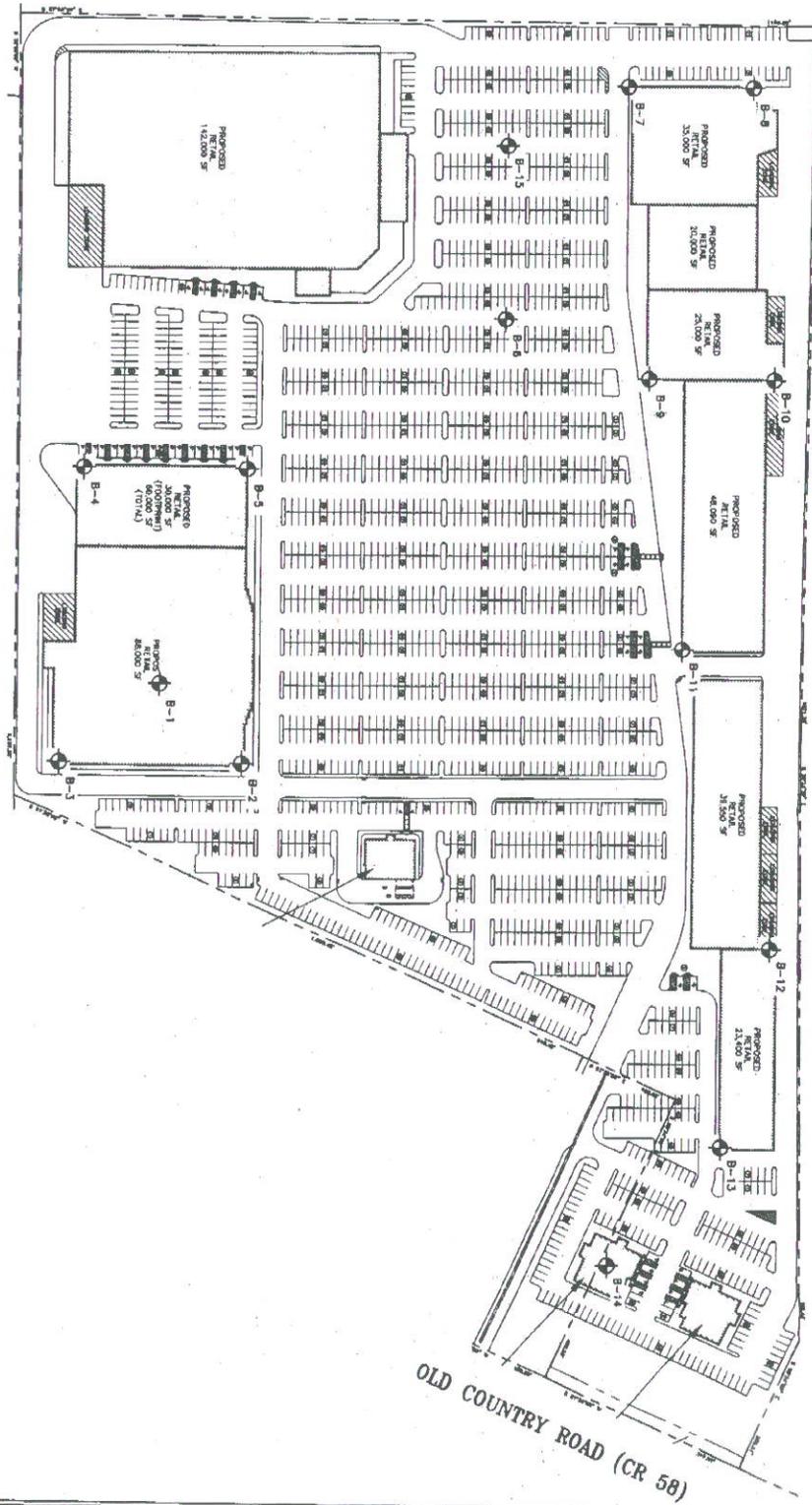


Figure 5

LEGEND

◆ B-1 BORING LOCATION (APPROX.)

--- SUBJECT PROPERTY BOUNDARY (APPROX.)

REFERENCE

THIS PLAN IS BASED UPON A DECEMBER 5, 2005 ALLOCATION PLAN PREPARED BY NELSON A. POPE ENGINEERS & SCIENTISTS

TITLE:	BORING LOCATION PLAN
CLIENT:	COSTCO WHOLESAL CORPORATION



WHITESTONE ASSOCIATES, INC.
 35 TECHNOLOGY DRIVE
 WARREN, NEW JERSEY 07059
 908.668.7777 • 908.754.5936 FAX

PROJECT:	PROPOSED COSTCO WHOLESAL FACILITY OLD COUNTRY ROAD (CR 58) RIVERHEAD, SUFFOLK COUNTY, NEW YORK	PROJECT #:	WJ06-8818	BY:	RF	PROJ. MGR.:	NEJ	DATE:	07/05/06	SCALE:	N.T.S.	FIGURE:	1
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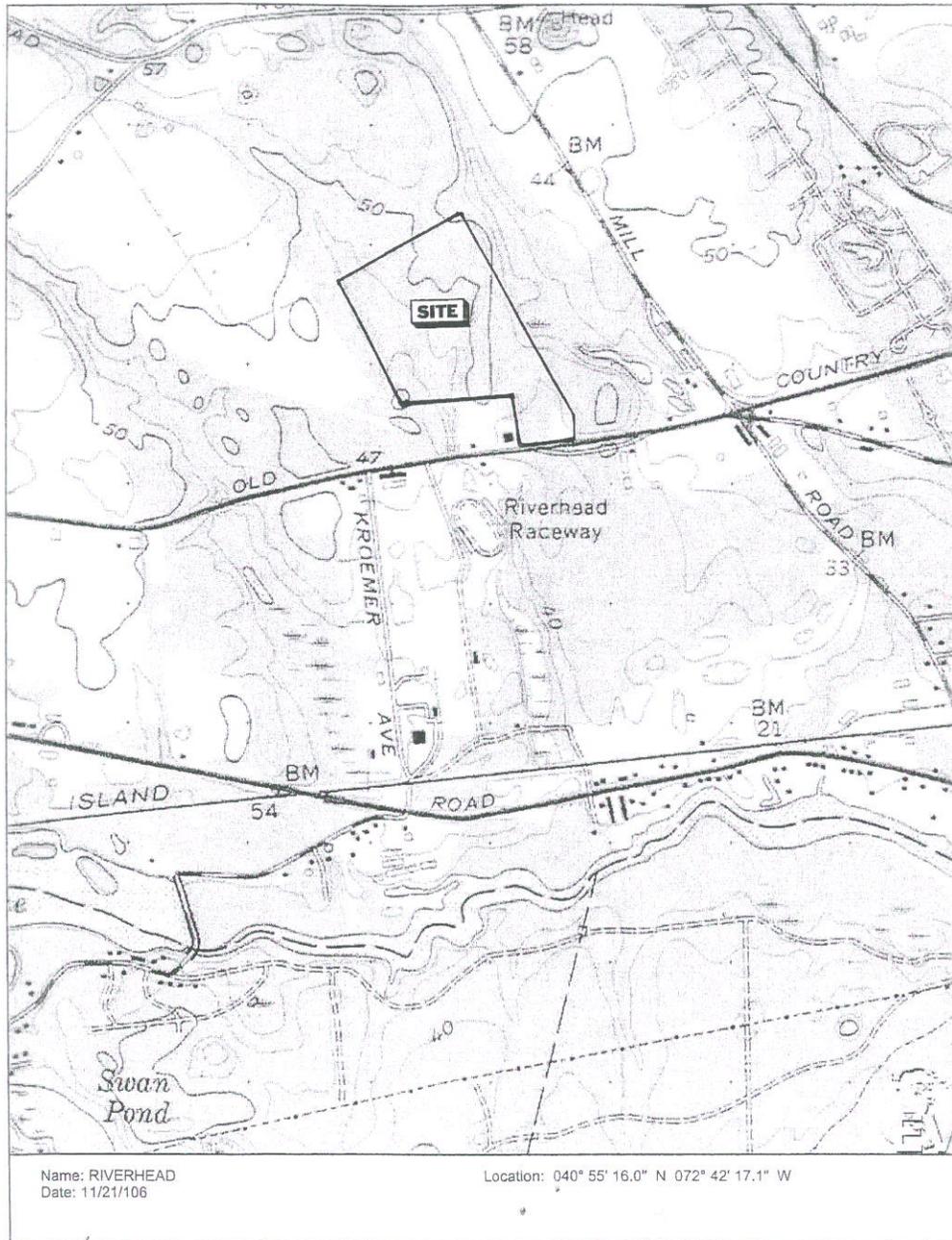
As with the other report, this geotechnical report noted that the soils encountered at the site should be adequate for shallow foundations and should have a high permeability for stormwater infiltration contingent upon the application of the recommendations presented in the report (see Appendix C).

3.1.3 Topography

According to the USGS Topographic Map, Riverhead Quadrangle (see Figure 6) the elevation on the site is generally at 50 feet above mean sea level (“msl”). Based upon a site-specific survey performed by Joseph A. Ingegno, Land Surveyors (see Appendix D), the elevations on the property range from 30± feet to 50± feet. As the site was previously developed, much of the front and central portions of the property have been graded and leveled for the former buildings and parking areas.



Excerpt of Topographic Map



Source: U.S.G.S. Topographic Map, Riverhead Quadrangle, Earthvisions, Inc., 1996
Scale: Not Available

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Figure 6

3.2 WATER RESOURCES

3.2.1 Groundwater

Depth to Groundwater and Flow Direction

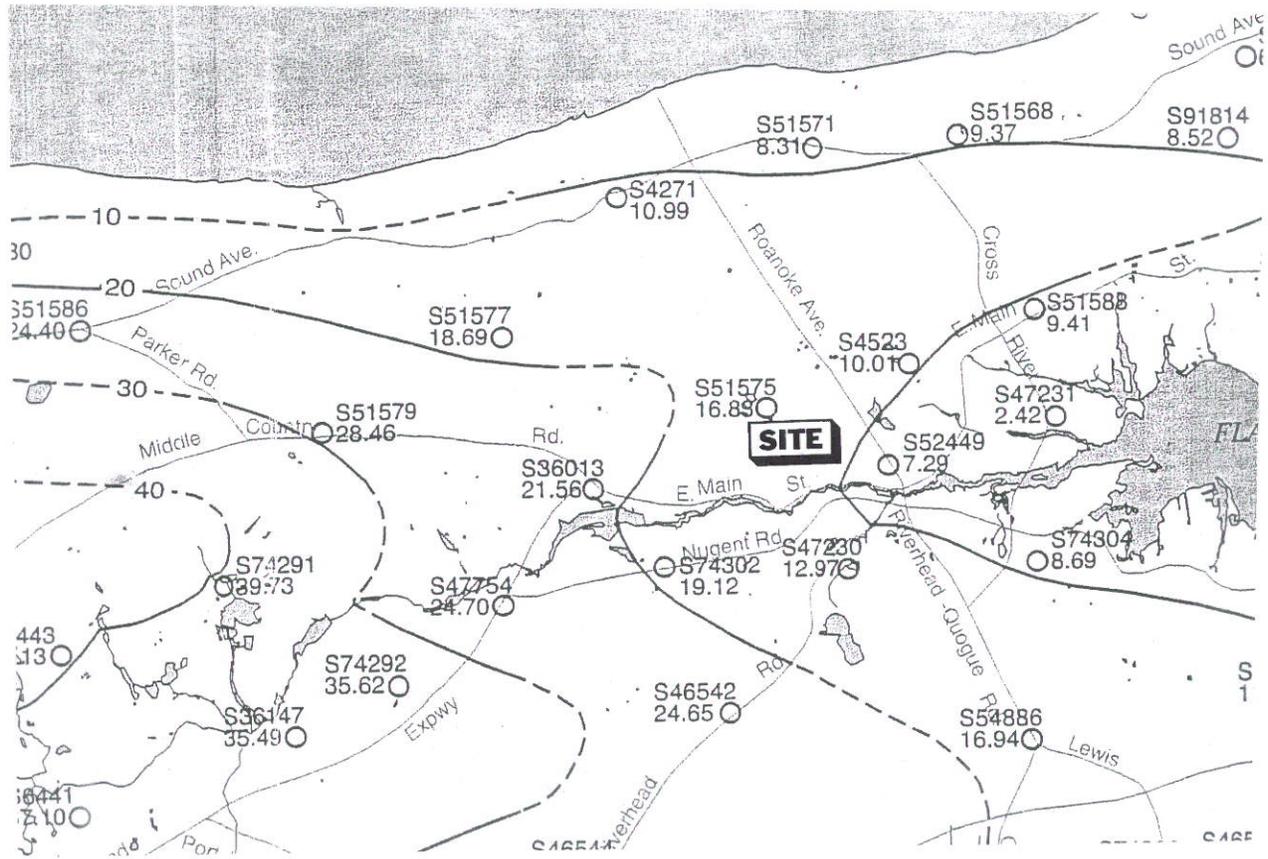
Long Island is considered a sole source aquifer region, which means that the groundwater is the single water supply source. Thus, land uses have the potential to impact the quality of the water supply.

There are three major aquifers under Long Island: the Upper Glacial, the Magothy and the Lloyd. The Upper Glacial and Magothy are the significant water supply sources for most of Long Island. In recent years, suburbanization has caused contamination in areas of the Upper Glacial aquifer, since it is closest to the surface.

According to the *Water Table of the Upper Glacial Aquifer, Eastern Long Island, Plate 1B* (March-April 2000) (hereinafter “Water Table Map”), the water table lies at approximately 15± feet above mean sea level (“msl”) (see Figure 7). The direction of groundwater flow is generally horizontally to the southeast, based upon the *Water Table Map*. As described above, on-site soil borings revealed that groundwater was encountered between 7.5 and 12.5 feet bgs.



Excerpt of USGS Water Table Contour Map



Source: Water Table of the Upper Glacial Aquifer on Eastern Long Island, New York
USGS, March-April 2000

Scale: 1:125,000

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The Long Island Comprehensive Waste Treatment Management Plan (208 Study)

In 1978, Long Island was divided into eight hydrogeologic zones in *The Long Island Comprehensive Waste Treatment Management Plan (the 208 Study)*. The subject site is located in Hydrogeologic Zone III (see Figure 8).

Zone III encompasses the eastern portion of the Magothy recharge zone, which is generally very high in water quality. Zone III, located in the middle portions of Suffolk County, still has good quality groundwater in both the Upper Glacial and Magothy aquifers. Portions of the Glacial, and to a lesser extent, the Magothy aquifers have been contaminated by nitrates from fertilizers and on-site wastewater disposal systems and by synthetic organic chemicals from industrial and other discharges. Initially, the nitrate contamination was a result of farming practices and then, later, of urbanization. However, as much of the area is in low-density, primarily non-agricultural land use, median nitrate-nitrogen concentrations in water from wells in the area have always been low. Additionally, as the hydraulic conductivities of both aquifers are high, there is considerable potential for water supply development in this area.

The *208 Study* lists structural, non-structural and non-point source control options for wastewater management for each Hydrogeologic Zone. Page 81 of Volume 1 discusses the Highest Priority Areawide Alternatives for Zone III. They are as follows:

- Require nitrogen removal for treatment plants recharging effluent;
- Provide for the routine maintenance of on-site disposal systems;
- Restrict the use of inorganic, fast-acting fertilizers. Promote the use of low-maintenance lawns;
- Prohibit the construction of new landfills or the expansion of existing landfills. Presently operating landfills should be upgraded, insofar as possible, in order to minimize groundwater contamination;
- Control stormwater runoff to minimize transport of nutrients, metals and organic chemicals to groundwaters;

- Strengthen and enforce regulations pertaining to industrial waste disposal, product storage and transportation of residuals; and
- Prohibit the use of certain chemical cleaners in on-lot systems.

3.2.2 Special Groundwater Protection Area Plan

Under the federal Safe Drinking Water Act, the Nassau-Suffolk region has been designated a sole-source aquifer. In addition, New York State has adopted laws in order to protect the groundwater quality of such aquifers. One such law is the New York Environmental Conservation Law (“ECL”), Chapter 43-B, Article 55 (Sole Source Aquifer Protection). According to Article 55:

“It is declared to be the public policy of this state to provide funds for the preparation and implementation of groundwater watershed protection plans in order to maintain existing water quality in special groundwater protection areas within federally designated sole source aquifer areas contained within counties having a population of one million or more and to further the implementation of nonpoint source controls for the protection of the potable supply underlying the entire recharge area.”

According to the legislation, the designated planning entity, which in the case of Long Island is the Long Island Regional Planning Board, shall prepare the plan for the special groundwater protection area. The plan shall be designed to ensure the non-degradation of the high quality of groundwater recharged within the special groundwater protection area. Where local plans already exist which effectuate the goals of this article, such local plans shall be evaluated and incorporated as is appropriate into the work of the planning entity.

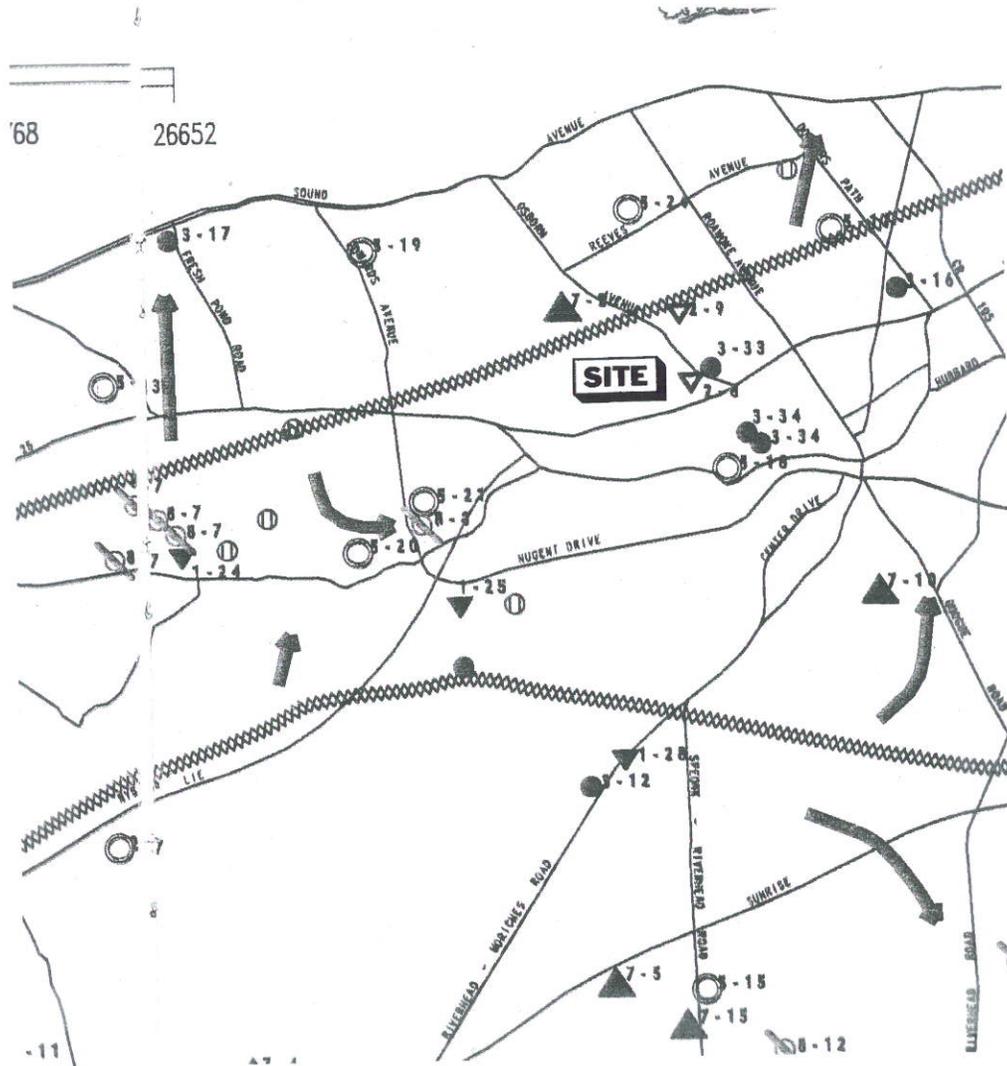
Special Groundwater Protection Areas (“SGPAs”) are significant, largely undeveloped or sparsely developed geographic areas of Long Island that provide recharge to portions of the deep flow aquifer system. They represent a unique final opportunity for comprehensive, preventative management to preclude or minimize land use activities that can have a deleterious impact on groundwater. Nine SGPAs are located on Long Island: North Hills; Oyster Bay; West Hills/Melville; Oak Brush Plains; South Setauket Woods; Central Suffolk; Southold; South Fork; and Hither Hills. The subject property is situated within the Central Suffolk (North) SGPA (see Figure 9). The land use plan (Figure 3-22) for the Central Suffolk SGPA (North) recommends the subject parcel for “industrial.” A discussion of the recommendations for the Central Suffolk SGPA and consistency of the proposed project therewith, is included in Section 4.2 of this DEIS.

3.2.3 Drainage and Stormwater Runoff

Currently, drainage occurs directly into the ground, as there are no functioning stormwater facilities located on the site. Prior to demolition of the structures, removal of impervious surfaces and discontinuation of use of the recharge basin, stormwater from impervious surfaces was contained on-site through the use of a recharge basin and a drainage swale. Remnants of the recharge basin still exist (and will be discussed in Section 3.3 of this DEIS), but it no longer serves a stormwater management function.



Excerpt of the Special Groundwater Protection Area Map



Source: Figure 3-6, Groundwater Conditions in the Central Suffolk SGPA, The Long Island Comprehensive Special Groundwater Protection Area Plan, Long Island Regional Planning Board, 1992.
Scale: 1 inch = 2 miles

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Long Island Segment of the National Urban Runoff Program (“NURP”)

Years of study, including various 208 studies, have provided conclusive evidence that in many areas pollutant loading contributed by non-point sources exceeds that contributed by point sources, and urban runoff is the most significant non-point source.

With regard to stormwater runoff, the *NURP Study* has made the following findings with regard to groundwater and surface water:

Groundwater

- Most of the runoff into recharge basins is derived from rain that falls directly on impervious surfaces, except during storms of high intensity, high volume and/or long duration;
- In general, with the exception of lead and chloride, the concentrations of inorganic chemicals measured in stormwater runoff do not have the potential to adversely affect groundwater quality;
- Infiltration through the soil is generally an effective mechanism for reducing lead and probably chromium from runoff on Long Island. Although the NURP Study findings concerning chromium are not conclusive, data from a spill at Farmingdale indicate attenuation. Chloride is not attenuated. The effect of infiltration on nitrogen is undetermined; Coliform and fecal streptococcal indicator bacteria are removed from stormwater as it infiltrates through soil;

- In view of the need to assure groundwater of acceptable quality, further investigations of stormwater runoff as a possible significant source of organic chemicals are essential. In addition, the significance of illegal discharges of organic chemicals that runoff may carry into storm drains or recharge basins cannot be discounted. However, on the basis of the limited runoff data, along with the results of a substantial number of organic chemicals analyses from ongoing Long Island monitoring programs related to water supply, ambient groundwater quality and sources of pollution, it appears that no change in the use of recharge basins is warranted;
- Lead concentrations in runoff entering a recharge basin appear to be directly related to the extent and characteristics of the road network and the type and volume of traffic in the drainage area served by the basin;
- Plastic-lined basins with overflow to a recharge structure and unlined recharge basins are equally effective in recharging stormwater to the groundwater reservoir and in attenuating chemical constituents in stormwater; and
- Plant growth on a basin floor enhances infiltration because the plant root system keeps the soil layer loose and permeable, and provides channels for infiltrating water. Removal of basin vegetation is not necessary, and may indeed decrease the infiltration rate.

Surface Water

- Any control of chemical constituents in runoff requires awareness of the year-round presence. The use of highway deicing salts in winter explains the high chloride concentrations found in runoff during that season;

- Stormwater is a major source of coliform loading to Long Island bays. Some of the bays in Suffolk County contain areas where impaired water quality exists for reasons other than stormwater runoff (e.g., localized duck farm discharges); and
- The evidence accumulated in the *NURP Study* strongly supports the belief that fecal coliform loads are derived from non-human sources. Estimates indicate that the dog population could be a major source of the fecal coliform load in stormwater runoff. Dogs and birds are common throughout the study area, but the data are not sufficiently conclusive to permit ideal source or combination of sources.

3.2.4 Sewage Disposal

The subject property does not contain any active uses. Therefore, no sewage effluent is currently generated on the site. The Hazeltine facility previously generated sewage effluent, which was disposed of on-site through the use of septic systems. The site is currently located within the Riverhead Sewer District (see correspondence in Appendix P).

3.2.5 Water Supply

The subject property does not contain any active uses. Therefore, no water is currently used on the site. When in operation, the Hazeltine facility was supplied water by the Riverhead Water District. Water mains within the roadway are still available for connection by future occupants of the land.

3.2.6 Surface Water, Wetlands and Floodplain

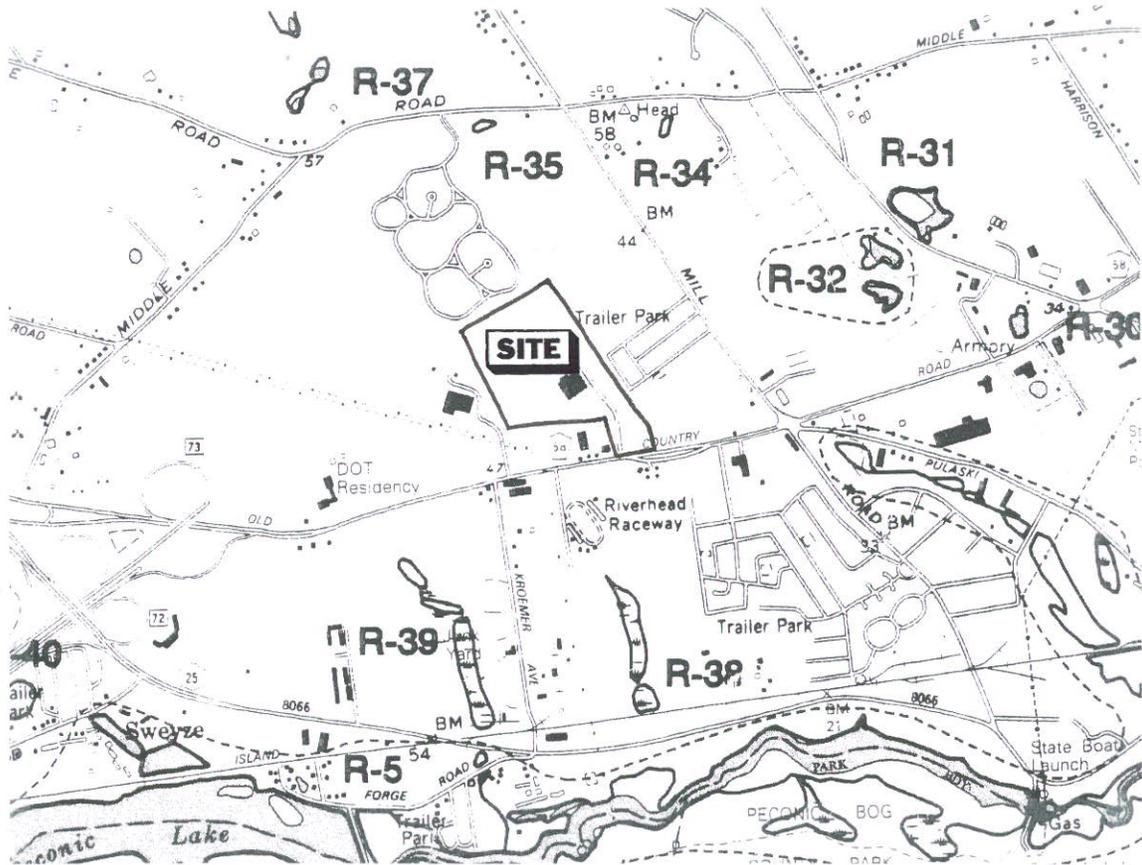
The NYSDEC Suffolk County Freshwater Wetlands Map 18 of 39 (Riverhead Quadrangle) was reviewed for the presence of wetlands on or directly adjacent to the site (see Figure 10). The map revealed that there are no NYSDEC-regulated wetlands within or contiguous to the subject property.

Examination of the NYSDEC Tidal Wetlands Mapping (Project Index Sheet 4 of 5) revealed that a tidal wetland map is not printed for the area of the subject property. Therefore, there are no tidal wetlands within or contiguous to the subject property.

National Wetlands Inventory (“NWI”) Map Number 733 (Riverhead Quadrangle), based upon aerial photography of 1994, was examined as to the potential presence of wetlands on or adjacent to the subject property (see Figure 11). There is a wetland shown on the property. The wetland is designated as PUBFx – Palustrine, Unconsolidated Bottom, Semi-permanently flooded, Excavated. This potential “wetland” is the former recharge basin that is no longer in use. The NWI map is a guidance document that alerts interested parties about potential consultation with the United States Army Corps of Engineers (“USACOE”) to determine jurisdiction and/or the need for permits. This “wetland” is not a “water of the United States” based upon the definition found at 33CFR Part 328, (see Appendix E). Therefore, they would not be regulated by the USACOE.

There are no other surface water bodies located on the subject property.

Excerpt of the New York State Freshwater Wetlands Map



Source: New York State Department of Environmental Conservation,
Suffolk County Map Number 18 of 39, Riverhead Quadrangle, 1991
Scale: 1" = 2,000'

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The Flood Emergency Management Agency (“FEMA”) Flood Insurance Rate Map No. 36103C0462 (Panel 462 of 1026) was consulted as to the flood zone in which the subject property is located. This map indicates that the site is not within a special flood hazard zone.

In addition, the subject property is not located within the New York State Coastal Zone, based upon a review of Coastal Zone Map No. 50.

3.3 ECOLOGY

An ecological assessment of the subject site and an analysis of potential ecological impacts associated with the development of same was performed by Thomas W. Cramer, ASLA in March 2007 and updated in January 2008. The ecological assessment summarized herein is based on a combination of field observations, inspection of aerial photographs and a previous ecological assessment of the subject site. A copy of the full ecological assessment is included in Appendix F of this DEIS.

Existing Habitats

As previously indicated, the general aspect of the subject site is of an abandoned lot containing the foundations of two demolished buildings (the large Hazeltine facility and a reputed Quonset hut) and associated parking areas, which are surrounded by successional woodlands. It should be noted that this site also contains a recharge basin to the west of the former Hazeltine building.

Using information presented in New York State Natural Heritage Program's ("NHP") publication *Ecological Communities of New York State* (Reschke, et. al., 2002), which provides a detailed discussion of various ecological communities found within New York State, the subject property can be divided into three (3) habitat types: "Pitch Pine – Oak Forest," "Successional Old Field," and "Paving – Hard Structures." Both the Successional Old Field and the Paving – Hard Structures habitat types are the direct result of previous human activities on the site. Figure 12 illustrates the approximate locations of the various habitats on site.

Figure 12 – Existing Habitat Types on the Subject Site



The largest habitat type on the subject property is The Pitch Pine - Oak Forest, which occupies approximately 35.45 acres of the site. The NHP describes this habitat type as follows:

“Pitch pine-oak forest: a mixed forest that typically occurs on well-drained, sandy soils of glacial outwash plains or moraines; it also occurs on thin, rocky soils of ridge tops.

The dominant trees are pitch pine (*Pinus rigida*) mixed with one or more of the following oaks: scarlet oak (*Quercus coccinea*), white oak (*Q. alba*), red oak (*Q. rubra*), or black oak (*Q. velutina*). The relative proportions of pines and oaks are quite variable within this community type. At one extreme are stands in which the pines are widely spaced amidst the oaks, in which case the pines are often emergent above the canopy of oak trees. At the other extreme are stands in which the pines form a nearly pure stand with only a few widely spaced oak trees.

The shrublayer is well-developed with scattered clumps of scrub oak (*Quercus ilicifolia*) and a nearly continuous cover of low heath shrubs such as blueberries (*Vaccinium pallidum*, *V. angustifolium*) and black huckleberry (*Gaylussacia baccata*).

The herbaceous layer is relatively sparse; characteristic species are bracken fern (*Pteridium aquilinum*), wintergreen (*Gaultheria procumbens*), and Pennsylvania sedge (*Carex pensylvanica*).

Characteristic birds include rufous-sided towhee (*Pipilo erythrophthalmus*), common yellowthroat (*Geothlypis trichas*), field sparrow (*Spizella pusilla*), prairie warbler (*Dendroica discolor*), pine warbler (*Dendroica pinus*), blue jay (*Cyanocitta cristata*), and whip-poor-will (*Caprimulgus vociferus*).”

The Pitch Pine – Oak Forest community is ranked by the NHP as “apparently secure” and “demonstrably secure” on a global scale, and as “apparently secure” on a state-wide level.

The Pitch Pine – Oak Forest community is one of several communities commonly referred to as “pine barrens,” which are areas that are typically characterized by pitch pines, oaks and other vegetative species that are tolerant of dry, acidic soil conditions, and occur in areas with a high degree of disturbance (i.e., forest fires). However, as defined by Article 57 of the New York State Environmental Conservation Law (“NYS ECL”), the subject site is not within the designated Long Island Central Pine Barrens.

Pine barrens communities are often subject to periodic fires, which result in the successional nature of these communities. Individual pitch pines can withstand heat levels that destroy other species of trees. Moreover, the heat from the fire aids in the opening of the pitch pine cones for seed dispersal. Pitch pines and scrub oaks are rather fire tolerant and are generally the first species to recover after a fire. Therefore, pine barrens communities with high fire frequency are typically dominated by pitch pine and scrub oak. These two species also require full exposure to sunlight and cannot tolerate extensive shade. As the period between fires becomes longer, less fire tolerant trees, such as oaks, become dominant and few pine seedlings reach maturity, resulting in a Pitch Pine-Oak Forest habitat. Furthermore, given sufficient time and lack of forest fires, the large canopies of the oaks (75 to 100 feet) will overshadow the smaller canopies of the pitch pines (50 to 75 feet) and Scrub oaks (3 to 9 feet) and out-compete them for sunlight, resulting in a pure stand of oaks. Fertile soils and the absence of drought also favor dominance by the large oaks.

As the Pitch Pine-Oak Forest has the lowest fire frequency of the pine barrens communities, oaks would be expected to dominate and few, if any, pitch pines would exist in the canopy. Understory species would be limited to those that are able to withstand shade conditions or that require more moisture. The conditions on the subject site reflect this. There is almost no scrub oak found in the understory, except on the edges of previously-cleared areas. The understory on the subject site is sparse, and includes species such as oak seedlings (*Quercus* sp.), black huckleberry (*Gaylussica baccata*) and blueberry (*Vaccinium* sp.), as well as herbaceous species such as bracken fern (*Pteridium aquilinum*), wintergreen (*Gaultheria procumbens*), trailing arbutus (*Epigaea repens*), Pennsylvania sedge (*Carex pensylvanica*) and mosses (see Appendix F of this DEIS for a complete list of plant species identified on the subject site). This type of habitat is common for the undeveloped sites in the area. Most of this habitat is found in isolated patches surrounded by development. This condition will promote fire suppression and result in the areas becoming oak-dominant habitats, given sufficient time.

The Successional Old Field habitat comprises approximately two acres of the subject site. The following is a definition of this habitat type as described by NHP:

“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*), quackgrass (*Agropyron 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'slace (*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.”

This ecological community is ranked by NHP as “apparently secure” both globally and within the state.

Succession is the process by which an area that has been cleared or otherwise disturbed reverts to the original vegetative habitat. Successional old field, shrubland and hardwood forest habitats are stages in the process of succession. The first species to colonize a cleared area are generally herbaceous weeds and other plants with wide seed dispersal. These early successional species are replaced first by woody shrubs, then by saplings of tree species that seed in from adjacent wooded habitat or landscaped areas. As time progresses, the trees dominate in both abundance and height, and light penetration is reduced. The tree and shrub species that first colonized the area are then replaced by more shade tolerant species. The resulting forest generally resembles the original forest, although there may be significant differences in species composition, particularly if non-native species have been introduced in the surrounding area.

The Successional Old Field located on site is somewhat different from the NHP description above. Like the description, the area is a result of development of the parcel. However, most of the Successional Old Field is found in the area surrounding the concrete pads that represent the original structure locations. These areas were apparently originally landscaped, as evidenced by a number of ornamental landscape species such as yews (*Taxus* spp.) and junipers (*Juniperus* spp.). In addition to the landscape plants that have naturalized themselves, this area is also colonized with various pioneer plants.

Numerous herbaceous species as well as several shrubs and small trees, such as bayberry (*Myrica pensylvanica*), multiflora rose (*Rosa multiflora*) and black locust (*Robinia pseudoacacia*), are found in this area (see Appendix F of this DEIS for a complete list of plant species identified on the subject site).

Another large area of Successional Old Field habitat is found to the west of the old building site, which was excavated and used as a recharge basin for the subject site. The recharge basin is located in a shallow swale that extends from CR 58 north to the residential community situated to the north of the subject site. Because of the clearing and excavation, herbaceous pioneer species have colonized the area, including pitch pine seedlings. Poor sandy soils have limited rapid colonization of this area, with some of the side slopes of the basin being still unvegetated even after a significant period of time. The bottom of the basin contains several facultative wetland plants (“FACW”). FACW plants are those that usually occur in wetlands, but occasionally are found in non-wetlands; these would include, but are not limited to, highbush blueberry (*Vaccinium corymbosum*) and sedges (*Carex spp.*). However, the recharge basin also contains facultative (“FAC”) species that are equally likely to occur in wetland and non-wetland areas and facultative upland (“FACU”) species that usually occur in non-wetlands areas, but are occasionally found in wetlands. However, the majority of species in the recharge basin are strictly upland plants. The mix of species found in this section of the site suggests that the recharge basin has accumulated silts and fine material in the bottom of the basin that retains moisture for extended periods of time, allowing the wetlands plant species a competitive edge. Because of the limited FACW species and the lack of obligate wetland plant (“OBL”) species (those occurring almost always in wetlands), it is apparent that the recharge basin does not contain open water or moisture for any extended periods of time.

A review of groundwater information shows that this area is not an expression of groundwater. Further, the NYSDEC Freshwater Wetland Maps (Riverhead Quadrangle) does not show any designated wetlands on the site. The nearest NYSDEC freshwater wetland is approximately 1,200 feet south of CR 58 and is designated as “R-38.” The recharge basin area is small in size (0.18 acres, 0.42 percent of the site) and does not constitute an appreciable or unique habitat. In addition, the small recharge area northeast of the parking field has been included in the Pitch Pine-Oak Forest because of its small size and vegetation type.

There is also a small area of Successional Old Field located along the western property line. This area was apparently cleared at the time of construction of the facility to the west of the site. It has since been colonized by grasses and various herbaceous plant species and portions have been mowed periodically by the owner of the adjoining property.

The Paving – Hard Structures habitat on site represents approximately 5.19 acres or 12.5 percent of the site. The following is the closest definition of this habitat as described by NHP:

“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.”

The paved road/path habitats are ranked by the NHP as being secure on both a globally scale and a state-wide level. As described by the NHP, this habitat type on the subject site is colonized by pioneer plant species growing within the cracks in the asphalt paving.

The plant species found or expected to be on the subject site are all common species and are prevalent in the area. Three species were identified on the subject site that are protected under 6 NYCRR Part 193.3(e) as exploitably vulnerable native plants.

Exploitably vulnerable native plants are species that are likely to become threatened in the near future throughout all, or a significant portion, of their ranges within the state if causal factors continue unchecked. The three present species are spotted wintergreen (*Chimaphila maculata*), stripped pipsissewa (*Chimaphila umbellata*), and trailing arbutus. In order to control the “causal factors,” 6 NYCRR Part 193.3(f) states that “*it is a violation for any person, anywhere in the state, to pick, pluck, sever, remove, damage by the application of herbicides or defoliants, or carry away, without the consent of the owner, any protected plant. Each protected plant so picked, plucked, severed, removed, damaged or carried away shall constitute a separate violation.*” No endangered, threatened, or rare plant species, as defined under 6 NYCRR Part 193.3(b, c & d) were found on the subject site.

From a regional standpoint, high-density residential development (Foxwood Village) has recently occurred to the north and northeast of the site. These residential developments now occupy approximately one-half of what was a large (approximately 130 acre) Pitch Pine - Oak Forest community. The remaining balance of this wooded community includes the subject site and an undeveloped wooded parcel, about one-half the size of the subject site. The undeveloped parcel is to the east and extends to Mill Road. Furthermore, previous commercial/industrial development to the west and south, as well as other existing high-density residential and commercial developments to the east, has left the subject site and the smaller undeveloped parcel to the east as an isolated wooded area surrounded by development. Northwest of the subject site is an old farm field in the early stages of succession; other small lots in various stages of successional growth are found within the immediate area of the site.

Wildlife

The abundance and diversity of wildlife on any site is determined by available habitat on and adjacent to that site. As previously indicated, the following habitats were identified on the subject site: Pitch Pine – Oak Forest, Successional Old Field, and Paving – Hard Surfaces. Similar habitats are found on properties surrounding the subject site.

The Pitch Pine – Oak Forest on-site is expected to provide habitat for a number of wildlife species due to its diverse vegetation. In addition, the early successional and landscaped areas on site may provide some wildlife habitat. However, these areas are small in size and would not form any appreciable habitat and/or contain species unique to the area or site. The Paving-Hard Surfaces would provide little or no valuable habitat on-site.

The species present on site are likely to be relatively common suburban, forest-edge species. Considering the intensity of commercial development surrounding CR 58, as well as the residential development and the fragmented natural habitat surrounding the site, sensitive or rare species are not likely to occur on-site.

Development surrounding the subject site has left it, for the most part, as an isolated wooded area. The only other wooded area is a small parcel, about one-half the size of the subject site, to the east, and extends to Mill Road. In addition, various old fields in various stages of succession are found within the immediate area of the site. Due to the mobility and home range size of many wildlife species, the wildlife will be expected to use the subject site and the adjoining habitat areas as a whole. The more human-tolerant species of wildlife will use the adjoining developed sites and the subject site.

The following discussion of the species that are expected to be common to the site based on the existing habitats on-site and in the immediate surrounding areas. In addition, as the ecological assessment of the subject site was performed in the winter, these discussions are also based on the Revised DEIS for Riverhead Marquee Plaza prepared by NP&V, dated September 2002 (prepared for another project on this site).

Birds

It is anticipated that birds would be the most common and abundant wildlife species found on the subject site. Birds that prefer a mix of woodlands, edge and suburban habitats are most likely to utilize the subject site. It is not anticipated that species intolerant of human activity or those that require large undisturbed natural habitats would be present on site. Species commonly observed in suburban habitats that may be found on the subject site include, but are not limited to the following: American crow (*Corvus brachyrhynchos*), blue jay (*Cyanocitta cristata*), gray catbird (*Dumetella carolinensis*), common grackle (*Quiscalus quiscula*), European starling (*Sturnus vulgaris*), American robin (*Turdus migratorius*) and mourning dove (*Zenaida macroura*) (see Appendix F of this DEIS for further details). In addition, it is also possible that the woodland habitat and the open habitat on the subject site may provide habitat for game birds such as the ring-necked pheasant (*Phasianus colchicus*) and the northern bobwhite (*Colinus virginianus*).

The site and surrounding area is suitable for use by raptor (i.e., red-tailed hawk [*Buteo jamaicensis*]) and owl species, most of which nest or roost in forested areas, preying primarily on small mammals in adjacent field and scrub habitats. Note that most raptors nest in high areas away from humans. Therefore, while raptors may roost on the property, most are unlikely to breed on the subject site.

Mammals

Similar to bird species, it is anticipated that mammal species found on the subject site would be those tolerant to human intrusion and disturbed habitats. Some species observed on the subject site include, but are not limited to, the following: white-tailed deer (*Odocoileus virginianus*), raccoon (*Procyon lotor*), eastern gray squirrel (*Sciurus carolinensis*) and red fox (*Vulpes vulpes*). Small rodents and insectivores such as mice, rats, shrews and voles are the most abundant mammals expected on site, but a number of larger mammals may be present where suitable habitat is available. Of the larger rodents, the eastern gray squirrel and chipmunk are common on Long Island and the woodchuck is present in some areas. Gray squirrels were abundant on subject site and are quite tolerant of humans, using both woodland and open habitats as long as large, nut bearing trees are present for foraging and nesting. The woodchuck, or ground hog, has a scattered distribution throughout central Suffolk County. It is found in a variety of habitats including fields, meadows, brushy areas and woods. Limited habitat for this species is found on site.

The eastern cottontail and opossum may also occur on the subject site as they are tolerant of humans and are often found on suburban properties.

The white-tailed deer, the largest mammal on Long Island, is found throughout Long Island and is extremely adaptable. Over the years, as human activity has become more prevalent in this species' range, it has become more tolerant of human activities. Numerous tracks and droppings were observed on the site.

Long Island carnivores include red fox and raccoon. The red fox prefers habitat with limited human development, however the fox may be adapting to the suburban setting. Prey species of the fox include small mammals, particularly mice and rabbits, birds, and insects, which are present on the subject site. The subject site provides natural habitat for the fox and an active den was observed. The raccoon is common throughout Long Island but prefers brushy wooded habitats near water. The raccoon is tolerant of humans and may become a pest, foraging in trash cans, gardens and agricultural fields. Tracks were observed on the site.

Amphibians and Reptiles

Although no reptiles or amphibians were observed on the property, the site may support a limited number of terrestrial species such as Fowler's toad (*Bufo woodhousei fowleri*), eastern garter snake (*Thamnophis sirtalis*), red-backed salamander (*Plethodon cinerus cinerus*), eastern spadefoot toad (*Scaphiopus holbrooki*) and eastern box turtle (*Terrepenne Carolina*).

In general, reptile and amphibian species are considered less mobile than bird and mammal species. As such, they are not expected if suitable habitat is not.

Salamanders (except for the red-backed salamander, which is highly terrestrial) and frogs would not be expected on the property as they typically require either moist woodland habitat or permanent pools. Note that it is not expected that the recharge basin on the subject site is a suitable habitat for most species of frogs and salamanders.

Several species of snakes (i.e., garter snake) may utilize the subject site, as they largely terrestrial and found in a variety of habitats. In addition, the eastern box turtle is common to terrestrial habitats on Long Island, and requires very little water. This species is found in a variety of habitats but prefers moist woodlands.

Rare and Endangered Species

No rare, threatened or endangered plants were observed on site during the current field inspections or during the prior inspections conducted by NPV. Correspondence was forwarded to NHP to determine whether there are any records of rare or state-listed animals or plants, significant natural communities, or other significant habitats in their database(s) for the subject site (see Appendix F). A response, dated January 10, 2007, identified one sensitive/rare plant species, one amphibian species, and one ecological community potentially occurring on or in the vicinity of the subject site.

The plant identified by NHP was the long-beaked beakrush (*Rhynchospora scirpoides*). It is an obligate wetland species (“OBL”), which is defined as a plant that occurs almost always under natural conditions in wetlands. As there are no wetlands on the subject site, this plant would not be found on-site.

The rare ecological community identified by NHP, coastal plain pond shore, is classified as a freshwater wetland. As previously indicated, there are no wetlands on the subject site. As such, this community is not present.

The final species identified by the NHP is the tiger salamander (*Ambystoma tigrinum*). This species was identified in 1998 in the series of ponds west of Kroemer Avenue. The tiger salamander is a mole salamander that spends most of its adult life underground within moist woodlands, except during the breeding season in late winter and early spring. Breeding occurs primarily in vernal ponds and/or in ponds that have no fish that may prey on the eggs and the young salamanders. Adults migrate to the breeding pond and remain in the pond for only a few weeks before returning underground. Although most adults remain proximate to the breeding pond, some individuals may migrate a significant distance following metamorphosis from the larval stage.

The NYSDEC typically requires that 50 percent of woodland vegetation be retained within 1,000 feet of a tiger salamander breeding pond. As the site is more than 1,000 feet from the documented breeding pond, no clearing restrictions would be required. Additionally, CR 58 and the surrounding intensive developments provide sufficient barriers for the species in terms of migrating to the subject site from the documented breeding pond. In addition, there is a small pond within a trailer park approximately 200 feet to the east of the subject site, which apparently receives stormwater runoff from the surrounding roadway network. This pond has not been documented as a tiger salamander breeding pond. Moreover, inspection of the pond in March of 2007 did not identify any egg masses. Thus, it is not anticipated that tiger salamanders would utilize the subject site.

3.4 LAND USE, ZONING AND COMMUNITY CHARACTER

3.4.1 Land Use, Zoning and Community Character

The subject property is currently vacant, and is partially developed with the remnants of the former Hazeltine industrial facility, including the foundation of the former building as well as paved internal roadways and parking areas and a former recharge basin. The remainder of the subject site includes lawn and wooded areas. The subject site is zoned DRC. As previously indicated, the subject site is located on the north side of Route 58 to the east of Kroemer Avenue. Photographs of the subject site and the surrounding area are included in Appendix G of this DEIS. Zoning districts are shown in Figure 13. The land uses and zoning of the surrounding properties are as follows:

North: Single-family residential uses predominate in the Foxwood Village to the north of the subject site. The zoning to the north is Agricultural Protection Zone (“APZ”).

East: To the east of the subject site are both residential and commercial uses. The residential use, Millbrook Village, to the east of the subject property is situated to the north of Route 58 and can be accessed via Mill Road. Commercial uses predominate to the east along Route 58. Among these commercial uses are a family activity center, a strip retail center (Warner Plaza), a large retail center (Riverhead Center) with restaurant uses (Panera Bread, Boulder Creek, TGI Fridays), and office space. The zoning district to the northeast of the site is “APZ.” East of the site, the area is zoned “DRC” and Business Center (“BC”), along Route 58. Farther east (east of Mill Road), the zoning is also “DRC” along the north side of Route 58 and “BC” along the south side of Route 58.

South: Land uses to the south of the subject site are commercial (office and retail), industrial, motor vehicle raceway, lodging, residential and vacant land. Specifically, adjacent to the subject site to the south and southwest are an automobile dealership (Suzuki, Nissan and Hyundai) and a restaurant (Applebee's), respectively (note due to the configuration of the subject site, these uses are also due west). Along the southern side of Route 58 commercial uses predominate to the southwest, with industrial uses predominating along Kroemer Avenue. The motor vehicle raceway use (Riverhead Raceway) is located on the south side of Route 58 across the road from the subject site. Finally, commercial and lodging uses (Holiday Inn Express) predominate to the south and southeast along Route 58, with vacant land and single-family residential uses beyond. The zoning to the south and southwest of the site, on the south side of Route 58, is a combination of "DRC" and "BC" along the roadway.

West: Uses to the west of the subject site are commercial, vacant land, and industrial. The commercial uses (automobile dealership and restaurant) and vacant land front Route 58. The industrial use (Adchem) is adjacent to the subject site to the west, set back from Route 58. Note that a municipal use, the New York State Department of Transportation, lies beyond the vacant land to the west. The zoning to the west of the subject property is "DRC" and the zoning to the northeast is "APZ."

As previously noted, the subject property is located in the "DRC" Zoning Use District – a district that was created pursuant to recommendations made in the *Town of Riverhead Comprehensive Plan* (see Figure 16). The intent of the DRC zoning district is as follows:

"...to provide a location for large retail centers along Route 58 that attract customers from the East End of Long Island and beyond, while linking development along the Route 58 corridor to open space protected in the Agricultural Protection (APZ) Zoning Use District. It is the further intent to allow increased floor area in the DRC Zoning Use District with the use of transferred development rights where appropriate. Development is intended to have a campus-style layout, with no strip or free-standing businesses permitted."

As can be seen in Figure 16, the DRC zoning is concentrated in the western portion of the Town, mainly along Route 58, with some DRC zoning extending south to West Main Street. The subject site is one of the larger parcels that is classified DRC.

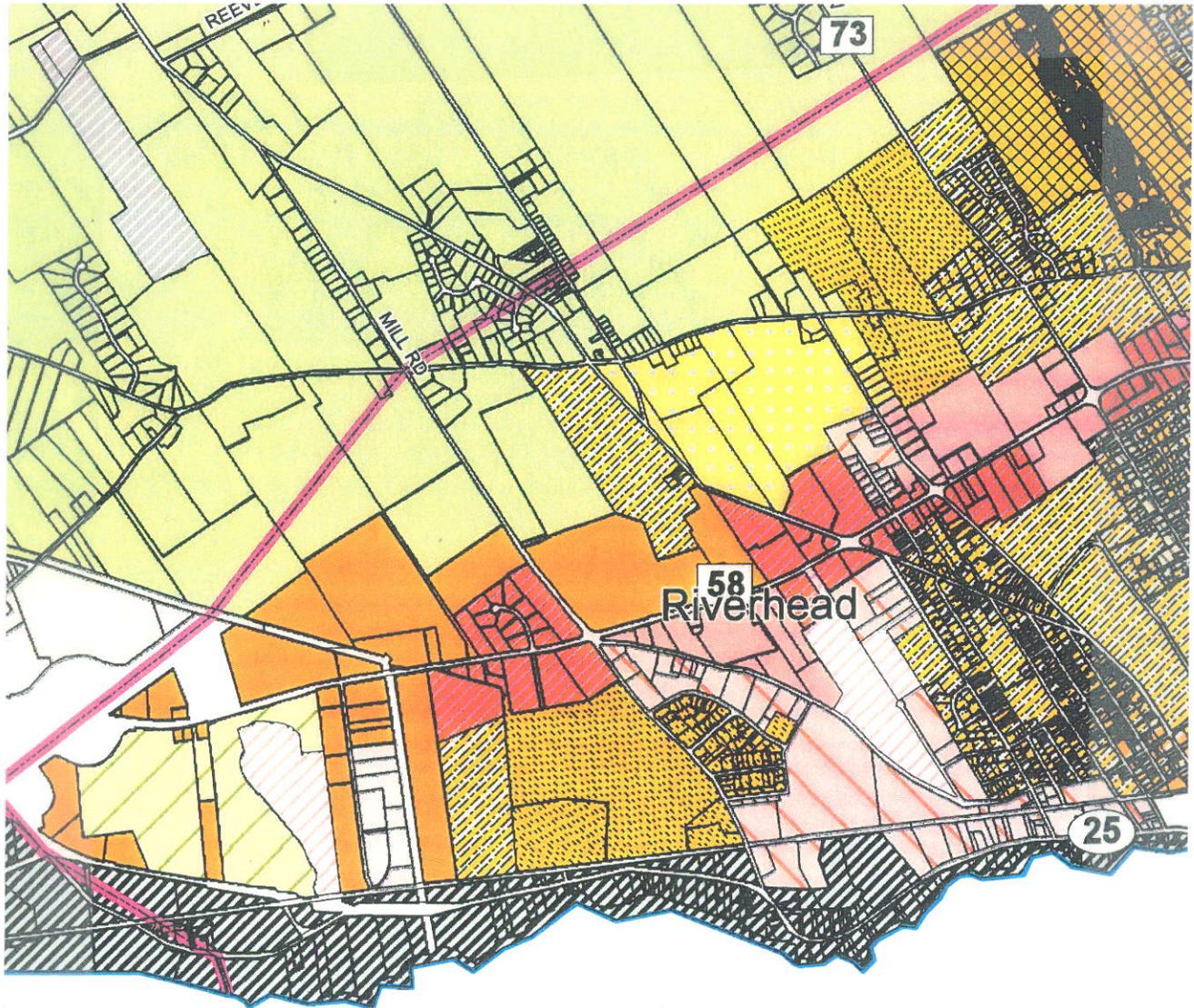
The uses permitted in the DRC District include retail stores and shops, hotels, car dealerships and banks. Drive-through windows for banks and pharmacies are permitted as accessory uses.

Section 108-259 describes some of the lot, yard, bulk and height requirements for the DRC District, but the majority of these dimensional requirements are included in the *Commercial Districts Schedule of Dimensional Regulations* (108 Attachment 3.1). Section 108-259.B. indicates that no individual store can be less than 10,000 square feet in size, except that 10 percent of the total floor area may be improved with retail stores of less than 10,000 square feet, with a minimum size of 3,500 square feet. In addition §108-259.C. states that “properties shall provide a contiguous landscaped area equal to at least 20 percent of the lot area.” Landscaping in this area cannot include grass lawns.

Section 108-260 of the Town Code discusses supplementary regulations including design standards, buffering and transitions and parking standards. The design standards require that the development “have a campus-style layout, with no strip-style development permitted.” In addition driveway openings and curb-cuts should be aligned with existing curb-cuts along Route 58 or other major arterials to reduce the potential addition of traffic lights and conflicting turning movements. Finally, continuous sidewalks, off-street transit stops and bike racks close to the business entrances shall be provided for properties fronting Route 58 or other major arterial street. In addition, buffer/transition requirements include providing buffer plantings or opaque fences, preferably wood, between commercial uses and adjoining residential uses or zones, as well as along frontages with arterial roads.



Excerpt of Town of Riverhead Zoning Use District Map



Source: Town of Riverhead Zoning Use District Map, June 4, 2005
Scale: 1 inch = 400 feet

FREUDENTHAL & ELKOWITZ CONSULTING GROUP, INC.

Legend for the Town of Riverhead Zoning Map

Existing Zoning Use Districts

-  Bus A Business A Zoning Use District
-  Bus PB Professional Business Zoning Use District
-  Def Ins Defence Institutional Zoning Use District
-  MRP Multi-Family Residential Professional Office Zoning Use District
-  PIP Planned Industrial Park Zoning Use District
-  NRP Natural Resources Protection Zoning Use District
-  OSC Open Space Conservation Zoning Use District
-  PRP Planned Recreational Park Zoning Use District
-  RFC Riverfront Corridor Zoning Use District
-  IB Industrial Business Zoning Use District

Downtown Zoning Use Districts

-  DC-1 Main Street Zoning Use District
-  DC-2 Waterfront Zoning Use District
-  DC-3 Office Zoning Use District
-  DC-4 Office/Residential Transition Zoning Use District
-  DC-5 Residential Zoning Use District

Legend for the Town of Riverhead Zoning Map

Adopted Zoning Use Districts

-  APZ Agricultural Protection Zoning Use District
-  Bus CR Zoning Use District
-  BC Business Center Zoning Use District
-  Bus F Business F Zoning Use District
-  CRC Commercial/Residential Campus Zoning Use District
-  DRC Destination Retail Center Zoning Use District
-  Hamlet Boundaries
-  HC Hamlet Center Zoning Use District
-  HR Hamlet Residential Zoning Use District
-  Ind A Industrial A Zoning Use District
-  Ind C Industrial C Zoning Use District

-  OSI Open Space Institution Zoning Use District
-  RA-40 Residence A-40 Zoning Use District
-  RA-80 Residence A-80 Zoning Use District
-  RB-40 Residence B-40 Zoning Use District
-  RB-80 Residence B-80 Zoning Use District
-  RC Residence RC Zoning Use District
-  RLC Rural Corridor Zoning Use District
-  SC Shopping Center Zoning Use District
-  TRC Tourism/Resort Campus Zoning Use District
-  VC Village Center Zoning Use District
-  DC1-5 Boundary
-  Riverhead Town Boundary

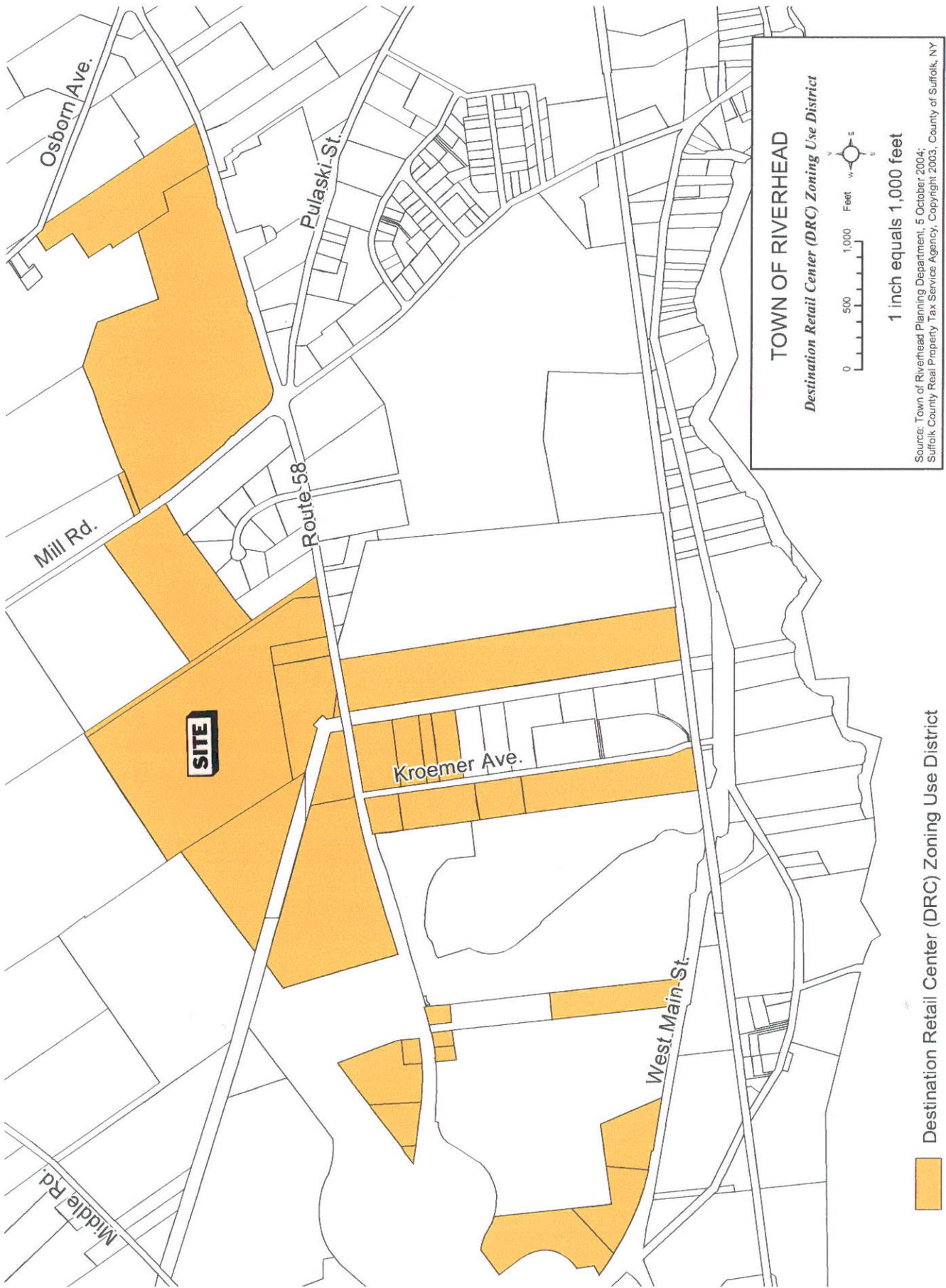


Figure 16

The bulk and dimensional regulations of the DRC Zoning Use District and the project's compliance with such are included in Table 23 in Section 4.4.1 of this DEIS.

3.4.2 Relevant Comprehensive Plans

The *Town of Riverhead Comprehensive Plan* (hereinafter "Comprehensive Plan") dated November 2003, "established a goal to develop a plan that fully takes into account the concerns of the community and strives for fair, balanced solutions to complex problems." According to Page 1-5 of the *Comprehensive Plan*, it is "composed of eleven different elements, each dealing with a distinct topical area of the community. Each element contains goals and recommendations specific to that topic area. The Proposed Land Use Plan in Chapter 2 weaves together those goals and recommendations into a single, coherent plan for development and conservation, providing a snapshot of what the Town would be expected to look like in the future. The other ten elements of the plan are organized as follows:

- Chapter 3: Agriculture Element
- Chapter 4: Natural Resources Conservation Element
- Chapter 5: Scenic and Historic Resources Preservation Element
- Chapter 6: Business Districts Element
- Chapter 7: Economic Development Element
- Chapter 8: Housing Element
- Chapter 9: Transportation Element
- Chapter 10: Utility Service Element
- Chapter 11: Parks and Recreation Element
- Chapter 12: Community Facilities Element."

According to the Page 1-6 of the document "implementation of the Comprehensive Plan will be an incremental process. When the Comprehensive Plan is completed, the Town's zoning ordinance will be updated over the course of the following 12 months to reflect all of the newly adopted goals and policies in this document. Then, as development proposals come forward from the private sector, those new projects will have to conform to the new zoning provisions."

The Land Use Element of the *Comprehensive Plan* indicates that “economic development and environmental conservation should be balanced; to not only sustain expansion of Riverhead’s strong economic base, but also promote livable communities, preserve farmland and agricultural activity, and protect Riverhead’s natural, historic, and scenic resources.” One of the objectives for the future is to have a “thriving commercial corridor along Route 58, with reduced traffic congestion and attractive visual quality.” The Land Use Element discusses the DRC concept, stating that its purpose is to provide for large retail center along Route 58, that would attract customers coming from the East End of Long Island, and beyond, “while linking development to open space protection along the Route 58 corridor and in Agricultural zones.” The site and the surrounding areas along both sides of Route 58 are shown on the Route 58 corridor map (Figure 6-2 of the *Comprehensive Plan*) as being proposed for the DRC district. Virtually the entire Route 58 corridor from the Long Island Expressway to Cross River Drive is shown as being classified in some type of commercial district.

The preferred land uses and design concepts discussed for the DRC within the *Comprehensive Plan* have been translated, in pertinent part, into the DRC zoning district that was adopted by the Town in 2004.

The vision for the Business District Element of the plan indicates that “Route 58 should absorb most of the demand for regional and destination retail uses and thus should continue to be a mainstay for generating jobs and tax revenue” (Page 6-1). This section goes on to indicate:

“over the last four decades, Route 58 has had the location and visibility to attract retailers, the land to accommodate commercial development, and the road capacity to absorb increases in traffic. Route 58 is Riverhead’s largest and most important commercial center, providing essential convenience shopping (grocery stores, drug stores, hardware stores) comparison shopping (Tanger Mall), auto sales, gas stations and auto repair centers, restaurants, personal and professional services, and agricultural products and supplies.”

Moreover, the *Comprehensive Plan* recognizes that:

“Today, the commercially zoned sites along Route 58 are nearly all developed, although retail demand continues to grow. As a result, nearly all commercially zoned parcels along Route 58 will eventually be targeted for commercial development through use variances or rezoning applications. Rather than allow those parcels to convert in a haphazard fashion, a thoughtful, comprehensive rezoning could provide structure to the inevitable trend. Most retailers are less interested in sites beyond Route 58 because they are less centrally and prominently located and thus have a more limited market potential.”

The vision for Route 58, as stated in the *Comprehensive Plan*, is to remain the principal destination for both convenience and comparison retail, while improving design features, landscaping and traffic conditions. In addition, an objective is to serve both local customers and regional patrons. The *Comprehensive Plan* notes that “the proximity to the LIE provides a unique opportunity for [sic] allow for destination-style retail operations...By building up such destination retail establishments, the Town would experience a positive cash flow or retail expenditures resulting in higher commercial property values, commercial tax ratables, and increased sales tax revenue sharing” (Pages 6-35 to 6-36).

One of the other stated policies (Page 6-38) is to establish low base densities for the DRC zoning district, “with sizeable bonus densities for the purchase of development rights.” The increased development on the DRC site would be “offset by asking the destination center to ‘give back’ open space that maintains the rural character and the viability of agricultural activity in Riverhead.”

The concepts that have been described in the *Comprehensive Plan* have been translated into practices with the adoption of the Destination Retail Center zoning and its application to several parcels (including the subject property) along Route 58 as well as the creation of the Transfer of Development Rights ordinance, which is now a part of the Town Code.

Chapter 7 of the Comprehensive Plan, the Economic Development Element, also recognizes the benefits of retail development. Page 7-2 indicates “there is also enormous potential for retail growth, not only in conjunction with tourism, but also in the form of ‘destination retail centers’ like Tanger Mall...There is also the potential for development of additional destination retail centers like Tanger Mall that draw upon a regional consumer market.” This section of the Comprehensive Plan, contains a subsection devoted to destination retail, saying, in pertinent part, “due to its location at the end of the expressway, as well as the availability of large land parcels, the western end of Route 58 is ideally suited for destination retail.”

Section 4.4.2 discusses the proposed project’s conformance with the concepts of the Comprehensive Plan, especially the Comprehensive Plan’s recognition of destination retail as a new form of development and its link to tourism, entertainment and overall economic development.

3.5 TRANSPORTATION

Eschbacher VHB prepared a traffic study, entitled *Traffic Impact Study*, which is included in Appendix H of this DEIS. The purpose of this study is to analyze the existing and future traffic conditions, determine any significant traffic impacts due to the proposed project and to evaluate and propose mitigation measures, if required. The report summarizes the results of the traffic study and summarizes the data collection process, traffic analysis procedures and study conclusions. This section includes a summary of the existing conditions from same.

3.5.1 Study Methodology

The following list describes the methodology used in the aforesaid traffic study.

- The project site plan and related documents were reviewed to obtain an understanding of the project scope and layout;
- A review was made of the adjacent roadway system and the key intersections that might be significantly impacted by the project were identified;
- Existing traffic volumes were collected at the study intersections on a typical weekday during AM and PM peak hours, and during the Saturday peak hours;
- Field inventories were made to observe the number and direction of travel lanes at the key intersections along with signal timings, phasing and cycle lengths;
- Existing traffic volumes the key intersections were expanded to future No Build conditions by applying an annual growth rate of two percent;
- Other planned or approved developments within the project study area were identified, and expected traffic from those projects included in the No Build conditions;

- The traffic generated by the proposed development was projected, based on recognized traffic engineering standards;
- The site-generated volumes were distributed along the adjacent roadway network and added to the No Build volumes to produce the proposed Build volumes;
- Capacity analysis was performed at the study intersections for the Existing, No Build and Build conditions;
- The results of the analyses for the No Build and Build conditions were compared to assess the possible significant traffic impacts of the proposed project;
- The need for traffic mitigation measures was evaluated;
- Traffic accident data from the most recently available three-year period for the study area was obtained and summarized;
- Site access locations were evaluated;
- Proposed on-site parking was evaluated; and
- Public transportation serving the area was identified.

3.5.2 Study Intersections

CR 58 is the primary roadway that would be used by project generated traffic. CR 58 has two eastbound lanes, two westbound lanes, and a center left turn lane from the Long Island Expressway to east of Mill Road, except that between Kroemer Avenue and Mill Road there is only one eastbound lane.

The following six intersections were identified as those most likely to be impacted by traffic generated by the proposed project and were selected for detailed traffic analysis:

- CR 58 & Tanger Mall Drive;
- CR 58 & Kroemer Avenue;
- CR 58 & Proposed Site Entrance;
- CR 58 & Commerce Drive/Gatewood;
- CR 58 & Mill Road/Pulaski Street; and
- NY 25 & Kroemer Avenue/Forge Road.

The intersections at Tanger Mall Drive, Kroemer Avenue, and Mill Road are currently controlled by traffic signals. The Commerce Drive/Gatewood intersection is controlled by stop signs on the Commerce Drive and Gatewood approaches to CR 58. The proposed intersection at the site entrance between Kroemer Avenue and Commerce Drive will require signalization. The Kroemer Avenue intersection with NY 25 is currently controlled by stop signs on the north and south approaches. The project location and study intersections are shown in Figure 1 in Appendix H of this DEIS. A table of lane configurations at the study intersections can be found in Attachment 1 in Appendix H of this DEIS.

3.5.3 Traffic Data Collection

Manual turning movement counts at the four existing study intersections were performed on Thursday, November 16, 2006 during the morning (7:00 AM to 9:30 AM) and evening (3:30 PM to 6:30 PM) peak periods, and on Saturday, November 11, 2006 during the midday peak period (11:00 AM to 3:00 PM). These time periods were reviewed and accepted by Suffolk County DPW.

The NY 25 & Kroemer Avenue intersection was counted during the same hours on Thursday October 11, 2007 and on Saturday October 13, 2007.

Complete turning movement count data is presented in Attachment 2 in Appendix H of this DEIS.

3.5.4 Accident History

Accident data were obtained from the New York State Department of Transportation for the segment of CR 58 from Tanger Mall Drive to Mill Road. The data for the three year accident study period, January 2001 to December 2003, and a summary presented by accident type and accident severity, are provided in Attachment 3 of Appendix H.

Accident Rate

In order to evaluate the relative frequency of these accidents, a comparison was made to the statewide average rate for similar facilities, as shown below:

Rate Calculation:

$$\begin{aligned} \text{Rate} &= \frac{(73 \text{ total accidents in 3 years}) (1,000,000)}{(365 \text{ days/yr.}) (3 \text{ yrs.}) (23,000 \text{ veh./day}) (1.1 \text{ miles})} \\ &= 2.64 \text{ accidents per million vehicle miles} \end{aligned}$$

The New York State average for a four lane undivided roadway, urban area, is 5.66 Acc/MVM. The average accident rate on CR 58 is thus less than half the statewide average for similar types of roadways.

3.5.5 Existing Traffic Conditions

Area Roadways

The main roadway in the study area is CR 58 – Old Country Road. As stated earlier, CR 58 has two eastbound lanes, two westbound lanes, and a center left turn lane from the Long Island Expressway to east of Mill Road, except that between Kroemer Avenue and Mill Road there is only one eastbound lane. The speed limit on CR 58 in the study is 45 mph. CR 58 is currently the subject of a planning study by the Suffolk County Department of Public Works.

Tanger Mall Drive provides access to and from the Tanger Mall complex on the south side of CR 58.

Kroemer Avenue runs north/south, connecting CR 58 and NY 25, and has one lane in each direction. There is also a leg of Kroemer Avenue on the north side of CR 58 that provides access to Applebee's restaurant and the facilities of Adchem Corporation. The speed limit on Kroemer Avenue is 30 mph.

Commerce Drive is a dead end street on the north side of CR 58. It serves a Panera Bread franchise, a Harley-Davidson dealer, and a group of medical/office buildings. Opposite Commerce Drive is Gatewood, a privately maintained roadway that provides access to CR 58 from the Glenwood Trailer Park.

Mill Road runs north/south from Osborn Avenue to NY 25. It has one lane in each direction, and the speed limit is 30 mph. The termination of Pulaski Street intersects Mill Road on the south side of CR 58, making an irregular five-legged intersection. The westbound approach of Pulaski Street to Mill Road is controlled by a stop sign. Pulaski Street runs southeast into Polish Town.

NY 25 (West Main Street) runs east-west on the north side of the Peconic River and south of CR 58. It is one lane in each direction in the study area, with a speed limit of 50 mph.

Existing Traffic Volumes

Based on the traffic count data collected in November 2006, existing turning movement volumes at the study intersections for the AM, PM, and Saturday peak hours are shown in Figures 2, 3, and 4, respectively (see Appendix H).

Existing Intersection Levels of Service

Existing level of service ("LOS") analyses were conducted for each of the four existing study intersections for the AM, PM, and Saturday peak hours. A description of the LOS definitions and analyses process for both the signalized and the unsignalized study intersections is provided in Attachment 4 in Appendix H of this DEIS.

Table 4 summarizes the results of the intersection capacity analysis for the 2006 existing conditions during the AM, PM, and Saturday peak hours.

Table 4 – Existing Levels of Service

Intersection	Approach	Lane Group	AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
			Delay	LOS	Delay	LOS	Delay	LOS
CR 58 & Tanger Mall Drive	Eastbound	L						
		T	0.8	A	13.6	B	18.2	B
		R	0.1	A	0.1	A	0.1	A
		<i>Approach</i>	0.7	A	12.6	B	15.6	B
	Westbound	L	1.8	A	8.8	A	12.5	B
		T	0.5	A	5.8	A	6.0	A
		<i>Approach</i>	0.6	A	6.3	A	7.7	A
	Northbound	L	15.9	B	21.6	C	24.9	C
		LT						
		R	0.0	A	0.2	A	0.3	A
	Southbound	<i>Approach</i>	2.9	A	10.5	B	14.3	B
		L						
		T						
			R					
		<i>Approach</i>						
		Overall	0.7	A	9.3	A	12.0	B
CR 58 & Kroemer Avenue	Eastbound	L	2.9	A	8.2	A	8.0	A
		TR	3.2	A	7.4	A	7.4	A
		<i>Approach</i>	3.2	A	7.4	A	7.5	A
	Westbound	L	4.3	A	3.5	A	3.9	A
		T	2.6	A	3.7	A	3.3	A
		R	1.7	A	1.8	A	1.6	A
	Northbound	<i>Approach</i>	2.6	A	3.6	A	3.3	A
		L	16.4	B	22.2	C	26.5	C
		TR	9.3	A	11.2	B	11.3	B
	Southbound	<i>Approach</i>	10.7	B	14.2	B	16.1	B
		L	16.4	B	23.3	C	28.2	C
		T	15.5	B	20.7	C	24.4	C
		R	11.5	B	9.8	A	10.0	B
			<i>Approach</i>	15.0	B	16.2	B	17.9
		Overall	3.3	A	6.0	A	6.4	A
CR 58 & Mill Road	Eastbound	L	10.1	B	18.0	B	65.1	E
		T	13.2	B	14.9	B	16.8	B
		R	6.2	A	4.8	A	6.5	A
		<i>Approach</i>	11.9	B	14.2	B	30.5	C
	Westbound	L	9.8	A	9.3	A	10.8	B
		T	17.3	B	25.0	C	27.3	C
		R	0.0	A	0.0	A	0.0	A
	Northbound	<i>Approach</i>	16.5	B	23.0	C	25.0	C
		L	16.9	B	32.6	C	27.3	C
		T	22.5	C	38.8	D	54.0	D
		R	0.0	A	0.0	A	0.0	A
	Southbound	<i>Approach</i>	16.2	B	31.2	C	39.7	D
		L	17.4	B	26.0	C	27.3	C
		T	26.8	C	39.1	D	41.5	D
R		0.1	A	0.2	A	0.2	A	
		<i>Approach</i>	10.7	B	15.6	B	18.1	B
		Overall	13.8	B	20.2	C	27.7	C

Table 4 - Existing Levels of Service (Continued)

Intersection	Movement	AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS
CR 58 & Commerce Drive/Gatewood	NB Left	37.6	E	40.2	E	165.8	F
	NB Thru	37.0	E	25.2	D	-	
	SB Left	52.5	F	91.4	F	865.3	F
	SB Thru	-	-	59.6	F	-	-
	WB Left	10.0	B	12.0	B	33.7	D
	EB Left	6.5	A	9.2	A	18.1	C
NY 25 & Kroemer Avenue	NB Left	8.5	A	12.6	B	30.1	D
	NB Thru	10.8	B	18.4	C	41.5	E
	SB Left	9.9	A	18.0	C	174.4	F
	SB Thru	10.7	B	16.2	C	189.2	F
	WB Left	4.3	A	6.0	A	9.9	A
	EB Left	2.4	A	4.7	A	4.6	A

Note: The above delays for the unsignalized intersections at CR 58 & Commerce Drive/Gatewood and at NY 25 & Kroemer Avenue were taken from *SimTraffic*.

The detailed Synchro analysis worksheets are provided in Attachment 5 within Appendix H of this DEIS.

3.5 AIR QUALITY AND NOISE

3.5.1 Air Quality

RTP Environmental prepared an air quality analysis for the proposed project. A copy of the complete air quality analysis is included in Appendix I of this DEIS. A summary of the existing conditions is included herein.

Existing Air Quality

The quality of ambient air is measured and regulated under rules established by the US Environmental Protection Agency (“USEPA”) and the NYSDEC. For this project, baseline air quality conditions at and in the vicinity of the project site were characterized using measured data available from nearby monitoring stations. These data will be used to evaluate the relative impact of proposed activities.

The site is located within a suburban, populated area of Long Island, New York, approximately 65 miles east of New York City. It is governed by Federal, State and local agencies and regulations. Specifically, the site is regulated by the USEPA and NYSDEC with respect to air quality requirements. Suffolk County is located within Region II of the USEPA and Region I of the NYSDEC.

The site is situated on the north side of CR 58, approximately one-half mile east of the termination of the Long Island Expressway. The area at and in the vicinity of the project site is a mix of urban/suburban and rural land uses. Residential, commercial, industrial, agricultural and recreational areas exist at and in the immediate vicinity of the site. The site was formally the home to electronic manufacturer Hazeltine, but has been abandoned for several years. There are currently no air emission sources located on the project site.

Sensitive Land Uses

Areas that are particularly sensitive to air pollution are typically referred to as “Sensitive Land Uses” or “sensitive receptors” and typically include locations where large masses of people may gather and locations with potentially elevated populations of the elderly or children. Sensitive receptors may include residences, hospitals, schools, parks and places of worship among others. Ambient air quality standards define non-sensitive receptors as areas where the general public has access, including roadways, sidewalks and railways.

Nearby sensitive receptors include several residential areas to the north, south and east of the project site; and several community parks including Stotzky Memorial Park (approximately 0.75 miles east of the project site on Old Country Road), Peconic Bog County Park (approximately 0.75 miles to the south) and Cranberry Bog County Park (approximately 1.25 miles to the southeast). There are also several schools and places of worship in the vicinity of the project site. In addition, recreational areas including the Peconic River and Peconic Lake are located south of the project site (approximately 0.75 miles).

Regulatory Guidance

Air quality regulations have been developed by the USEPA and the NYSDEC to protect air resources. These regulations are based on extensive studies that quantified the effects of exposure to various air pollutants relative to public health and the environment. There are both natural and anthropogenic sources of air pollutants. The sources include stationary sources (factories, power plants and residential wood burning stoves), mobile sources (for example: cars, trucks, buses, trains and planes) and natural sources (such as wildfires, plants, animals and windblown dust). Since the proposed project contains some of these sources, both Federal and State regulations require an analysis to assure all air quality regulations are maintained.

Ambient Air Quality Standards

National and New York State Ambient Air Quality Standards (“NAAQS” and “SAAQS”) have been issued in accordance with the Clean Air Act and Clean Air Act Amendments for widespread pollutants considered harmful to public health and the environment. Seven (7) pollutants have been listed with acceptable thresholds; these pollutants are called criteria pollutants. These criteria pollutants are sulfur dioxide (SO₂), particulate matter having diameters of less than 10 and 2.5 microns (PM₁₀), and (PM_{2.5}) respectively, nitrogen oxides (NO_x), carbon monoxide (CO), ozone (O₃) and lead (Pb).

The USEPA set both primary and secondary NAAQS. Primary standards protect human health, while secondary standards protect public welfare. The NYSDEC has adopted limits that apply to this project under 6 NYCRR Subpart 257. Table 5 presents the National and State ambient air quality standards applicable to the project site and surrounding areas. It should be noted that there are two applicable particulate standards, one for particulate matter less than 10 microns (PM₁₀) and the other to regulate particulate matter less than 2.5 microns (PM_{2.5}). The EPA has recently (effective December 17, 2006) revoked the annual PM₁₀ NAAQS due to lack of scientific evidence linking health problems to long-term coarse particulate matter exposure. However, at this time, the NYSDEC is continuing to enforce the annual PM₁₀ standard, and therefore, annual PM₁₀ impact modeling and annual PM₁₀ NAAQS comparisons have been included as part of this analysis. In addition, the EPA recently reduced the 24-hour PM_{2.5} standard from 65 µg/m³ to 35 µg/m³, which must be enforced by the NYSDEC (also effective December 17, 2006).

In addition to the criteria pollutants listed above, New York State has adopted ambient air quality standards for Non-Methane Hydrocarbons, Fluorides, Beryllium and Hydrogen Sulfide, although ambient monitoring for these pollutants is not conducted. Projects that emit criteria pollutants must consider all potential emissions as part of permitting activities and cannot cause or exacerbate an exceedance of either the NAAQS or SAAQS.

Table 5 - National and New York State Ambient Air Quality Standards

Pollutant	Averaging Period	NAAQS		SAAQS
		Primary	Secondary	
NO _x	Annual*	100 µg/m ³	100 µg/m ³	0.05 ppm
SO ₂	3-hour	**	1300 µg/m ³	0.50 ppm
	24-hour	365 µg/m ³		0.14 ppm
	Annual	80 µg/m ³		0.03 ppm
CO	1-hour	40 µg/m ³	40 µg/m ³	35 ppm
	8-hour	10 µg/m ³	10 µg/m ³	9 ppm
PM ₁₀	24-hour	150 µg/m ³		
	Annual***	50 µg/m ³		
PM _{2.5}	24-hour****	35 µg/m ³		
	Annual	15 µg/m ³		
O ₃	1-hour	235 µg/m ³		0.12 ppm
	8-hour	157 µg/m ³		0.08 ppm
Lead	3 consecutive months	1.5 µg/m ³		

Notes:

- * Annual averaging period means the average of emissions for any 12 consecutive month periods, also known as a 12-month rolling average.
- ** A primary NAAQS does not exist for this averaging period, therefore the secondary NAAQS was utilized.
µg/m³ = microgram per cubic meter.
ppm = parts per million.
- *** Due to lack of evidence linking health problems to long-term exposure to coarse particulate matter pollution, EPA revoked the annual PM₁₀ standard (effective December 17, 2006); however the NYSDEC has not yet revoked this standard.
- **** The USEPA recently reduced the 24-hour PM_{2.5} standard from 65 µg/m³ to 35 µg/m³, which must be enforced by the NYSDEC (effective December 17, 2006).

Area Attainment Status

The USEPA uses ambient air quality standards to classify all areas of the country as attainment, non-attainment or unclassified. If an area is considered in attainment or unclassified for a particular pollutant, then new major sources or major modifications of existing sources require permitting under the Prevention of Significant Deterioration (“PSD”) Attainment Area provision program. However, if an area is designated non-attainment for a given pollutant, then new major sources or major modifications of existing sources of the non-attainment pollutant are subject to Non-Attainment Area (“NAA”) provisions under New Source Review (“NSR”). The NAA provisions have stringent requirements for source emission rates and can require emissions offsets.

The proposed project is located in the Town of Riverhead, Suffolk County, New York, which is part of the New Jersey – New York – Connecticut Air Quality Control Region. This region is designated as either attainment or unclassified for SO₂, NO₂, CO, Pb and PM₁₀. The area is designated as a severe non-attainment area for O₃. In addition, the USEPA has designated Suffolk County (as well as other surrounding New York Counties) as non-attainment for PM_{2.5}, effective April 5, 2005.

State Implementation Plan

If an area in a State does not meet a NAAQS, the State must develop a State Implementation Plan (“SIP”). The SIP is a federally approved and enforceable plan developed by the State to attain and/or maintain the NAAQS. SIP procedures are outlined in the Code of Federal Requirements and fall under USEPA’s jurisdiction, including enforcement.

According to information obtained on the NYSDEC website:

“We are charged with developing the State Implementation Plans (SIPs) to address continuing air pollution problems in New York State. SIPs are required for areas of the state that are in non-attainment of the National Ambient Air Quality Standards (NAAQS) for one of the criteria contaminants.

At the present time, the state is under mandate to develop SIPs to address ozone, carbon monoxide, and particulate matter of less than 10 microns. The Bureau is also working with the USEPA to formulate standard practices for regional haze and fine particulate SIPs. Fine particulates are less than 2.5 microns, or micrometers, in size.”

Existing Site Characteristics and Air Quality

The meteorological, climatic and ambient air quality data presented in this section have been summarized from data provided by Federal, State and local governmental agencies. The climate of the area is based on historic data recorded over several years at local airports. The air quality data measured by the State are also presented along with applicable rules and regulations. These data provide a summary of current conditions surrounding the site and the framework within which the proposed facility must operate. Climate and meteorological data are contained in Appendix I of this DEIS.

Existing Air Quality

Ambient air monitoring is conducted by the NYSDEC at a few stations located on Long Island. Air quality monitoring stations measure existing air quality levels for local areas. The existing air quality is often considered background air quality, meaning the air quality prior to a new project's influence. The stations listed in Table 6 are considered background monitors for the proposed project.

Table 6 - NYSDEC Air Monitoring Sites

Station	Site Number	Parameter(s)
Suffolk County		
Babylon	5150-02 (C) (M)	SO ₂ ¹ , PM _{2.5} , Ozone
Babylon (Farmingdale)	5150-01	PM ₁₀ ²
Riverhead	5155-01	Ozone
Nassau County		
Eisenhower Park	2950-10 (C)	SO ₂ , CO, NO _x , PM ₁₀ , PM _{2.5}

*Notes:

¹SO₂ sampling was discontinued in 2000.

²PM₁₀ sampling was discontinued in 1998/1999.

³CO sampling was discontinued on May 31, 2000.

(C) = Continuous emissions monitoring

(M) = Manual emissions monitoring

A summary of the air quality data collected at these locations, including the New York State and Federal ambient air quality standards (“AAQS”) for each pollutant, is provided below and in Table 7. The data was obtained from the NYSDEC 2005 Ambient Air Quality Report (NYSDEC, 2006); it primarily summarizes data from 1995 to 2006 (where available) and provides a comparison of the three most recent years of available data to Federal and State regulations. This is the most up-to-date report available as of December 2007.

Carbon Monoxide (CO) - There was one (1) monitor for carbon monoxide on Long Island, located in Eisenhower Park, East Meadow, Nassau County. The NYSDEC report indicates that CO sampling at this location was terminated on May 31, 2000. A review of the NYSDEC 2000 Ambient Air Quality Report indicates that the 1-hour and 8-hour CO measured concentrations during the 1998 through 2000 period complied with applicable standards; 35 ppm and 9 ppm, respectively.

Ozone (O₃) - During the period of 2004 through 2006, the Babylon station (Site 5150-02) exceeded the New York State/Federal ozone AAQS which states that the “4th highest daily maximum 8-hour average is not to exceed an average of 0.08 ppm during the last three (3) years.” This average value for 2004 to 2006 was 0.089, which exceeds the 8-hour standard. The area remains in non-attainment of the ozone standard. Therefore, the State continues to closely regulate sources of nitrogen oxides and volatile organic compounds, which are precursors to ozone formation.

The Riverhead monitoring site (5155-01) is operated less than 12 months per year under an USEPA waiver. The Riverhead ozone station is located at: New York Sea Grant, Cornell University Research and Extension Center, 3059 Sound Avenue, Riverhead, New York. Available ozone data for this site indicate a 3 year average of 0.085 ppm, 2004 through 2006, and is considered to be just above applicable standards of 0.084 ppm.

Inhalable Particulates (PM₁₀) - Small airborne particles that are present in the ambient air which are less than 10 microns in diameter are designated as PM₁₀. The Eisenhower Park monitoring site (2950-10C) is the closest to the project with PM₁₀ data. According to NYSDEC reports, there were no exceedances of the New York State or Federal Primary/Secondary 24-hour or annual AAQS standards of 150 µg/m³ and 50 µg/m³, respectively, at this station. The Federal annual PM₁₀ standard was revoked by EPA effective, December 17, 2006.

Inhalable Particulates (PM_{2.5}) - Small airborne particles that are present in the ambient air which are less than 2.5 microns in diameter are designated as PM_{2.5}. Both the Eisenhower Park and Babylon (5150-01) monitoring sites obtain PM_{2.5} data. Information provided by NYSDEC indicate no exceedances of New York State or Federal Primary/Secondary 24-hour AAQS of 35 µg/m³ or the annual 15.0 µg/m³ standards at either station. However, as of April 5, 2005 both Nassau and Suffolk Counties were designated by USEPA as PM_{2.5} non-attainment. As such, the State will be required to closely regulate sources of PM_{2.5}. According to the latest available data from 2006, the three year average is just within the standard. The NYSDEC will have to petition the EPA's designation of non-attainment once there is ample evidence of compliance with the standard.

Nitrogen Dioxide (NO₂) The annual average of nitrogen oxide concentrations over the past three (3) years from 2004 to 2006 indicates that there were no exceedances of the New York State/Federal AAQS of 0.05 ppm (annual mean) at Eisenhower Park. Since nitrogen dioxide is also a precursor pollutant, steps are being taken to reduce emissions to assure compliance with the ozone standard.

Sulfur Dioxide (SO₂) The sulfur dioxide concentrations recorded at the Eisenhower Park site over the 2004 to 2006 period indicate that ambient air concentrations are well within the standards for all regulatory averaging periods 3-hour, 24-hour and annual, at 0.5 ppm, 0.14 ppm and 0.05 ppm, respectively.

Table 7 - Summary of Ambient Air Quality Data

Pollutant	Averaging Period	Year(s)	Station Location	Maximum Concentration	NAAQS & SAAQS
NO ₂	Annual	2005	Eisenhower Park	0.020 ppm	0.05 ppm
O ₃	3 year Period	2003, 2004 and 2005	Babylon	0.085 ppm	0.08 ppm
SO ₂	3-hour	2005	Eisenhower Park	0.057 ppm	0.5 ppm
	24-hour	2005	Eisenhower Park	0.023 ppm	0.14 ppm
	Annual	2005	Eisenhower Park	0.004 ppm	0.03 ppm
CO	1-hour	2000	Eisenhower Park	3.7 ppm	35 ppm
	8-hour	2000	Eisenhower Park	3.0 ppm	9 ppm
PM ₁₀ *	24-hour	2004	Eisenhower Park	46.0 µg/m ³	150 µg/m ³
	Annual	2004	Eisenhower Park	15.0 µg/m ³	*
PM _{2.5}	24-hour	2005	Eisenhower Park	34.3 µg/m ³	35 µg/m ³
	Annual	2005	Eisenhower Park	13.2 µg/m ³	15.0 µg/m ³

Note: *Due to a lack of evidence linking health problems to long-term coarse particulate matter pollution exposure, EPA revoked the Annual PM₁₀ Standard (Effective December 17, 2006).

3.5.2 Noise

Introduction

RTP Environmental prepared a noise analysis for the proposed project. A copy of the complete noise analysis is included in Appendix J of this DEIS. A summary of the existing conditions is included herein.

Noise pollution comes from numerous sources. Some sources include activities essential to the health, safety, and welfare of the Town's inhabitants such as noise from emergency vehicle sirens, garbage collection operations, and construction and maintenance equipment. Other noise producing activities, such as rail and traffic, stem from the movement of people and goods. Such activities are essential to the viability of an area as a place in which to live and do business. Although these and other noise-producing activities are necessary, the noise they produce can be undesirable.

The ambient noise environment in a project area is typically dominated by traffic (USEPA, 1971). The principal noise consequence that would result from the Proposed Action is the potential increase in noise levels due to the increase in vehicular traffic throughout the study area.

Noise Fundamentals

Sound can be defined as the rapid, small amplitude fluctuation of the instantaneous air pressure, above and below the local barometric pressure. These pressure disturbances may be initiated by a rapidly vibrating solid object, such as a loudspeaker diaphragm or a vibrating plate, or it may be initiated by a turbulent airflow such as that created by a jet aircraft or by a truck exhaust.

Sound propagates through the air as a wave that has a speed of about 1,130 feet per second, and like all waves, can be characterized by its amplitude (in units of pressure) and by its frequency or pitch (in units of cycles per second, or Hertz). Because the range of amplitudes that the human ear can process, from the amplitude threshold of audibility to that of pain, is so huge (about six orders of magnitude), pressure amplitude is an inconvenient descriptor for environmental purposes. The Sound Pressure Level ("SPL") with units of decibels (dB) is used instead. This measure (like the scale for earthquakes) is based on the logarithm of the amplitude (i.e., the logarithm of a number is proportional to the exponent or order of magnitude of the number), which, for most purposes varies more manageably, so that the SPL variation is typically between 20 and 140 dB and more usually for environmental noise, between 50 and 80 dB.

This sound pressure level must, however, be modified to take into account the frequency content of the sound. The audible range of frequencies is generally from 20 to 20,000 Hertz for young people, with truncations at both ends of this range for older people. The sensitivity of the human ear to the sound of different frequencies varies greatly, being most sensitive between 1,000 and 4,000 Hertz, and falling rapidly for frequencies outside that range. A common method or procedure for both measurement and computation is to weight frequencies of the raw sound signal so the resulting measure is compatible with the sensation of loudness as perceived by most people. A measurement system that simulates the response of the human ear, the "A-weighted sound level" or "dBA," is used in light of its widespread recognition and its close correlation with human judgment of loudness and annoyance. In the current study, all measured noise levels are reported as dBAs.

A few general relationships may be helpful in understanding the decibel scale. Doubling of the noise energy produces a 3-dBA increase in sound pressure level, ("SPL"). Doubling of the traffic volume on a roadway, keeping all other traffic characteristics fixed (i.e., speed, vehicle mix, and geometry) will produce a doubling of energy, and hence a 3 dBA increase. A 3 dBA increase in SPL is, however, just barely perceptible to the average human ear. A 10 dBA increase in SPL corresponds to a 10-fold increase in sound energy, but to only a doubling of perceived loudness.

Typical noise levels, which a person may encounter in his or her daily activities, are presented in Figure 1 (USEPA, 1974) in Appendix J of this DEIS.

Noise Standards and Criteria

There is no federal or state noise regulation directly applicable to the proposed project. The following is a compilation of regulation and guidelines that have been used to quantify noise impacts and significance of potential increases in noise levels of the proposed project.

Town of Riverhead

The Town of Riverhead Noise Code -- Chapter 81 Noise Control -- places noise level limits of 65 dBA from 7 AM to 8 PM and 50 dBA from 8 PM to 7 AM entering residential property or noise sensitive zones emanated from commercial, business and industrial operations.

New York State Standards

New York State does not have any regulations that limit sound levels from facilities such as the proposed development. However, the NYSDEC has a relative noise guideline that it uses to indicate that it uses to indicate whether a receptor is impacted. Substantial relative noise impacts occur when predicted future noise levels increase by six dB or more above existing noise levels.

The NYSDOT has noise criteria that it uses for highway projects subject to its jurisdiction. NYSDOT has adopted the noise criteria (23CFR772) of the Federal Highway Administration ("FHWA"). These have two components: "fixed" noise criteria and "relative" noise criteria. The fixed noise criterion consists of the FHWA Noise Abatement Criteria ("NAC"), which is provided in Appendix J of this DEIS.

Table 8 - NYSDOT/FHWA Noise Criteria

Fixed Criteria		
<u>Activity Category</u>	<u>Hourly Leq</u>	<u>Description of Activity Category</u>
A	57 (Exterior)	Land for which serenity and quiet are of extraordinary significance and serves an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties or activities not included in Categories A or B above.
D	--	Undeveloped land.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

<i>Relative Criteria</i>
The second type of FHWA criterion is relative to existing noise levels. Substantial relative noise impacts occur when predicted traffic-noise levels increase by six (6) decibels or more above existing noise levels. To achieve an increase in noise level of this magnitude, it takes more than a threefold increase in traffic volume.

The FHWA developed the Traffic Noise Model 2.5 (TNM 2.5) for studying noise from highways and roadways. This model allows the determination of absolute noise levels for a variety of conditions, including the effects of barriers and other roadway noise attenuation measures. This model was utilized in this study for determining project impacts.

Federal Standards and Guidelines

USEPA

In 1974, EPA published a report (USEPA, 1974) that identified noise level goals for public health and welfare (see Table 9). The noise descriptors used by the EPA are the 24-hour equivalent sound, $L_{eq(24)}$, and the day-night sound level, L_{dn} , a descriptor that contains a weighting penalty of 10 dBA which is added to the nighttime hourly equivalent levels (L_{eq}) from 10 PM to 7 AM before computing the 24-hour energy average. These recommended EPA levels are goals and do not represent enforceable federal regulations or standards; they do not provide criteria for evaluating the significance of changes caused by projects or actions.

Table 9 - EPA Recommended Noise Level Goals Identified to Protect Public Health and Welfare

Effect	Level	Area
Hearing loss	$L_{eq(24)} \leq 70$ dB	All areas.
Outdoor activity interference	$L_{dn} \leq 55$ dB	Outdoors in residential areas and farms, and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	$L_{eq(24)} \leq 55$ dB	Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor activity interference and annoyance	$L_{dn} \leq 45$ dB	Indoor residential areas.
	$L_{eq(24)} \leq 45$ dB	Other indoor areas with human activities, such as schools, etc.

Department of Housing and Urban Development (“HUD”)

HUD standards (24CFR51) apply to federally assisted projects and are intended to ensure that activities assisted by HUD will achieve the goal of a suitable living environment (see Table 10). The noise descriptors used by HUD is the day-night sound level, L_{dn} , a descriptor that contains a weighting penalty of 10 dBA which is added to the nighttime hourly equivalent levels (L_{eq}) from 10 PM to 7 AM before computing the 24-hour energy average. The proposed project is not subject to HUD guidelines and these standards. More importantly, these HUD levels do not provide criteria for evaluating the significance of changes caused by projects or actions. For projects of the type evaluated in this DEIS, changes in noise levels are better indicators of impacts than absolute levels or standards.

Table 10 - HUD Site Acceptability Standards

Acceptability Level	Outdoor L_{dn} (dBA)
Acceptable	Not Exceeding 65
Normally Unacceptable	65 to 75
Unacceptable	Above 65

Human Perception and the Human Response to Changes in Noise Levels

Human response to changes in noise levels depends on a number of factors, including the quality of the sound, the magnitude of the changes, the time of day at which the changes take place, whether the noise is continuous or intermittent, and the individual's ability to perceive the changes. Human ability to perceive changes in noise levels varies widely with the individual, as does the response to the perceived changes. However, the average ability of an individual to perceive changes in noise levels is well documented (see Table 11). Generally, changes in noise levels less than 3 dBA will be barely perceptible to most listeners, whereas a 10 dBA change is normally perceived as a doubling (or halving) of noise levels (BBN, 1973). These guidelines permit direct estimation of an individual's probable perception of changes in noise levels.

Table 11 - Average Ability to Perceive Changes in Noise Levels

Human Perception of Sound	Change (dBA)
Barely perceptible	2-3
Readily noticeable	5
A doubling of the loudness of sound	10
A dramatic change	20
Difference between a faintly audible and a loud sound	40

Various government and research institutions have proposed criteria that attempt to relate changes in noise levels to community response. One commonly applied criterion for estimating response is incorporated into the community response scale proposed by the International Standards Organization (ISO, 1969) of the United Nations (see Table 12). This scale relates changes in noise level to the degree of community response and permits direct estimation of the probable response of a community to predicted change in noise level.

Table 12 - Community Response to Increases in Noise Levels

Change (dBA)	Category	Description
0	None	No observed reaction
5	Little	Sporadic complaint
10	Medium	Widespread complaints
15	Strong	Threat of community action
20	Very Strong	Vigorous community action

Source: ISO, 1969.

Noise Impact Assessment Methodology

The methodology used to assess the noise impacts of the proposed development on adjacent noise-sensitive receptors included the following steps:

- Identifying sensitive and representative receptor locations which have the greatest potential for being adversely affected by noise from project-generated traffic;

- Determining existing noise levels through field measurements;
- Determining future noise levels, both with and without the proposed development;
- Determining project impacts by comparing predicted Build noise levels with No Build noise levels, and project impact criteria; and
- Where necessary, examining and evaluating noise abatement measures for reducing or eliminating significant adverse noise impacts.

The TNM noise model used for this project's noise analysis is the standard roadway noise model used throughout the country for traffic noise analysis. The model utilizes a number of factors, including traffic volumes and classifications, vehicle operating speeds, road-way alignment and grade, and physical barriers, in calculating noise levels.

Existing Noise Conditions

Figure 17 shows the area around the project site. Commercial and light industrial land-uses line both sides of Old Country Road (CR 58). A strip mall and CR 58 are located immediately south of the project site. The seasonal Riverhead Raceway is also located immediately south of CR 58. The land-use immediately to the west is light industrial. Residences can be found to the north and east. Also, to the east is a seasonal recreational facility with batting cages. The Tanger Outlet Stores are located less than one half mile to the west. In general, traffic noise generated on CR 58 dominates the ambient noise environment immediately adjacent to the proposed site.

Figure 17 - Project Location and Noise Monitoring Sites



Noise Monitoring Program

An ambient noise measurement program was conducted at three noise monitoring sites. The purpose of the monitoring program was to: (1) determine the existing noise levels at locations where the proposed project has the greatest potential for having significant noise increases, and (2) as a basis for projecting future noise levels.

As mentioned above, noise monitoring locations were chosen on the basis of noise-sensitive land uses, proximity to the proposed site, and the potential for noise impacts. The representative noise monitoring locations are shown in Figure 17 and are listed in Table 13.

Table 13 - Noise Monitoring Sites

Monitor Site	Site Location	Immediate and Adjacent Land Use
N1	Southwest corner of Millbrook Community	Residential/Commercial
N2	CR 58 and Glenwood	Residential/Commercial
N3	Foxwood Village Community southern boundary	Residential

Monitoring Location N1 was situated near the southwest corner of the Millbrook Community, a trailer park community. The project site is located immediately to the west. This site is also the northwest corner of an outdoor seasonal recreational facility. At the time of the monitoring program, the facility was not open. This site represents the nearest noise sensitive receptors to the project site and to the section of CR 58 with the greatest increase in project-induced traffic.

Location N2 is situated at the Glenwood Village entrance, a trailer park community, at Glenwood and CR 58. Actual residences are located approximately 700 feet to the south of CR 58. Land uses immediately adjacent to this site are commercial. A hotel is located approximately 250 feet to the west. This site was selected to assess the potential increase in traffic noise due to project.

Location N3 is situated along the southern property boundary of the Foxwood Village residential development. Residences adjacent to this location are over 1,500 feet from CR 58 to the south and over 1,300 feet from Mill Road to the east. Land uses immediately adjacent to this site are residential. This site supplements the other two monitoring locations.

Continuous monitoring at 10-minute intervals was conducted at both locations for a 24-hour period from midday Tuesday, February 27 to Wednesday February 28, 2007. In addition, monitoring was conducted during the midday hours of Saturday, March 3, 2007. The following instrumentation was used for this monitoring:

- Metrosonics db-308 Metrologger with wind screen
- Rion NC-73 Sound Level Calibrator
- Quest Noise Pro DLX Sound Level Meters
- 8.5mm Bruel & Kjaer Condenser Microphone and Pre-Amp
- Quest WS-5 Wind Screen

Quest QC-10 Calibrator

The instruments were calibrated before and after each measurement period and operated according to manufacturer's instructions.

Meteorological data during the monitoring period was acquired from local weather service. The weather during the 24-hour monitoring period in the early afternoon Tuesday, February 27, 2007 featured overcast skies and clearing during the early morning hours on Wednesday. Temperatures ranged from the high 30s to low-40s degree Fahrenheit during the day to the low-30's degree Fahrenheit during the overnight period. Winds were calm on Tuesday, but increased to approximately 12 mph shortly after dawn. Humidity stayed in a narrow range between 80 percent and 95 percent until approximately 8 AM Wednesday, when it began dropping to 45 percent by early afternoon. Barometric pressure was 29.94 inches on Tuesday, rising to 30.09 inches by noontime Wednesday. The weather during the midday of Saturday March 3, 2007 was clear with temperatures around 50⁰F, winds between 10 and 20 mph from the southwest, and relative humidity between 45 percent and 50 percent. Barometric pressure was 29.55 inches.

Supplemental 24-hour monitoring was conducted, and began in the late morning of Monday, November 19, 2007. Temperatures were in the mid-40s degree Fahrenheit during the day, dropping to near freezing overnight. Cloud coverage varied between clear and overcast until the very early morning of Tuesday when the skies became overcast. Northeast winds varied between 10 to 16 mph until the late afternoon when the wind speed became light from the east-northeast. Humidity was around 50 percent Tuesday, increasing to 90 percent by early Tuesday morning. This monitoring period started with barometric pressure at 30.47 inches, dropping to 30.18 inches by the conclusion of the monitoring period. Weather during the Saturday, November 17, 2007 midday hours was clear with temperatures in the mid-40s Fahrenheit, winds around 10 mph from the west, humidity around 43%, and barometric pressure at 30.03. These conditions satisfy the meteorological requirements for the measurement of ambient noise per ANSI S1.2 (ANSI, 1962).

Measured Noise Levels

Table 14 summarizes the noise levels monitored. The ambient noise levels surrounding the site generally range from the low 50s in dBA in locations away from major roadways, to the low 70s near CR 58. Vehicular traffic is the principal noise source throughout the project area and noise levels are generally dependent on the proximity to roadways and volume of traffic.

Table 14 - Day-Night Level and Hourly L_{eq} Noise Levels (dBA)

Location	L_{dn}	L_{eq}		
		AM	PM	Sat
N 1	60	55	54	53
N 2	71	70	68	68

Location N1 is a quiet area as evidenced by the low noise levels recorded in the mid 50s. Distant traffic on CR 58, approximately 550 feet to the south, was a major noise contributor to the ambient environment. Other less distinctive noise sources include: activities within the Millbrook Community, birds and occasional parking lot activity from the medical center to the east.

Traffic on CR 58 dominated the noise environment at Location N2. Traffic on Glenwood is light in comparison to the traffic on CR 58. Noise levels during the AM, PM, and Midday Saturday period ranged from 68 dBA to 70 dBA.

The dominant noises at Location N3 are both natural and man-made at this remote and quiet location. With the major roadways a quarter-mile or more away, dominant sounds include the wind and the rustle of foliage as well as the drone of distant traffic to the south and southwest with the infrequent noise of cars in the Foxwood gated community to the north. Noise levels were similar during the AM, PM, and Midday Saturday period, ranging from 48 dBA to 50 dBA.

Comparison of Measured and Model Predicted Noise Levels

Table 15 compares the measured L_{eq} values and predicted traffic generated L_{eq} values for the design hour traffic periods. There is very good agreement, less than 2 dBA, between the predicted and the measured noise levels, at location N2 where traffic obviously dominates the noise environment.

Table 15 - Comparison of Measured and Predicted L_{eq} (dBA)

Site Location	Period	Measured	Predicted	“Other Noise Contributions”
N1	AM	55	48	54
	PM	54	49	53
	Saturday	53	49	51
N2	AM	70	69	-
	PM	68	69	-
	Saturday	68	70	-

At location N1, which is approximately 550 feet away from CR 58, the noise environment is dominated by other local noise contributions such as activities in the parking lot and nearby trailer park. Measured noise levels were four to seven dBA higher than the traffic noise predicted by the model. At Location N3, a ¼-mile or more away from major roadways, measured noise levels were seven to eleven dBA higher than predicted local traffic noise. These other noise contributions (i.e., parking lot activities, natural noises) are labeled as “Other Noise Contributions” in Table 15. Incorporation of these “Other Noise Contributions” levels with the TNM predicted levels should yield an accurate representation of the total noise environment at this location.

3.6 SOCIOECONOMICS

An Economic Impact Analysis was prepared by Pearl M Kamer, Ph.D. discussing the demographic and economic components of the proposed development. The complete report is included in Appendix K of this DEIS. This section of the report includes a discussion of the existing demographic and economic conditions of the subject site and the surrounding area.

3.6.1 General Business Activity, Long Island, Suffolk County, Riverhead

The Long Island Economy. With the implosion of the technology bubble at the start of this decade, Long Island's job growth came to a halt in 2001. After losing 3,100 jobs in 2002, Long Island again started to generate jobs, but at an extremely slow pace. Only 7,300 jobs were created in 2003, 11,100 in 2004 and 6,700 in 2005. Job growth has since slowed even more. With fewer available job opportunities, young workers are leaving Long Island to begin their careers elsewhere. Census Bureau data show that between 2000 and 2005, the number of Long Islanders between ages 25 and 44 declined by approximately 66,000 persons. Given the current slow pace of employment growth, the job creation potential of the Shop's at Riverhead will benefit both the Riverhead community and the Long Island economy.

Table 16 – Historical Employment Changes, The Long Island Labor Market

Year	Number of Non-Farm Jobs	Net Change From Previous Year
2000	1,218,000	27,800
2001	1,218,600	600
2002	1,215,500	-3,100
2003	1,222,800	7,300
2004	1,233,900	11,100
2005	1,240,600	6,700

Source: New York State Labor Department

General Business Activity, Suffolk County and Riverhead CDP. In 2004, the latest date for which detailed Suffolk County employment data are available, Suffolk County contained almost 47,000 business establishments employing almost 561,000 persons and generating annual payrolls of more than \$21.9 billion. This was equivalent to an average annual wage of approximately \$39,000 per employee. Firms providing health services and social assistance comprise Suffolk's largest industry sector, accounting for more than 15 percent of total jobs. Retail trade and manufacturing are the second and third largest industries within the county. In 2004, the community of Riverhead (zip code 11901) was home to 1,013 business establishments employing 12,898 persons and generating annual payrolls totaling \$420,724,000. The average 2004 wage in Riverhead was \$32,619, slightly below the countywide average of \$39,000. Business activity in Riverhead has been growing more rapidly than business activity in Suffolk County as a whole. The number of business establishments in Riverhead increased from 863 to 1,013 between 2000 and 2004, a gain of more than 17 percent. By contrast, the number of Suffolk County business establishments increased from 43,463 to 46,933 during this period, a gain of only eight percent. The industry mix of business activity in Riverhead is relatively similar to that for Suffolk County as a whole. Retail enterprises comprise the largest number of businesses in both the community of Riverhead and Suffolk County.

Table 17 - Trends in Private-Sector Employment, Suffolk County, 2000 to 2004
(Number of Jobs)

Industry	2000	2004	Net Change, 2000-04	% Change 2000-04	% Distribution 2004
Agriculture, Fishing	200	248	48	24.0	0.1
Mining	175	183	8	4.6	0.0
Construction	34,861	38,913	4,052	11.6	6.9
Manufacturing	65,120	62,374	-2,746	-4.2	11.1
Wholesale Trade	49,001	53,670	4,669	9.5	9.6
Retail Trade	74,428	82,193	7,765	10.4	14.7
Transportation & Warehousing	17,238	18,621	1,383	8.0	3.3
Information	19,187	20,255	1,068	5.6	3.6
Finance & Insurance	23,169	25,014	1,845	8.0	4.5
Real Estate	7,707	7,914	207	2.7	1.4
Professional, Scientific & Technical Services	36,504	41,510	5,006	13.7	7.4
Corporate Management	9,157	9,746	589	6.4	1.7
Administrative Support Services (Clerical)	36,959	35,701	-1,258	-3.4	6.4
Educational Services	10,774	10,948	174	1.6	2.0
Health Services & Social Assistance	74,215	85,266	11,051	14.9	15.2
Arts, Entertainment, Recreation	6,928	7,944	1,016	14.7	1.4
Accommodation & Food Services	30,622	35,952	5,330	17.4	6.4
Other Services (Except Government)	20,827	22,430	1,603	7.7	4.0
Non-Classified	5,728	2,030	-3,698	-65.0	0.3
Total	522,800	560,912	38,112	7.3	100.0

Source: U.S. Census Bureau, County Business Patterns, 2000, 2004

Table 18 - Number of Business Establishments, by Industry, Riverhead (Zip Code 11901) vs. Suffolk County, 2000 vs. 2004

Industry	Riverhead 2000	Riverhead 2004	Suffolk 2000	Suffolk 2004
Agriculture, Fishing	1	3	80	69
Mining	0	0	3	25
Construction	64	97	5,862	6,927
Manufacturing	18	22	2,477	2,381
Wholesale Trade	30	29	3,290	3,380
Retail Trade	302	323	6,641	6,789
Transportation & Warehousing	11	15	940	1,020
Information	14	13	668	733
Finance & Insurance	49	50	2,110	2,282
Real Estate	18	23	1,462	1,682
Professional, & Technical Services	73	85	4,502	5,249
Corporate Management	0	1	224	145
Administrative Support (Clerical)	37	44	2,752	3,088
Educational Services	5	6	401	472
Health Services & Social Assistance	95	121	3,819	4,275
Arts, Entertainment, Recreation	14	18	699	799
Accommodation & Food Services	62	75	2,783	3,104
Other Services (Except Govt.)	62	79	4,101	4,262
Non-Classified	8	9	651	251
Total	863	1,013	43,465	46,933

Source: U.S. Census Bureau, County Business Patterns, 2000, 2004

The rapid growth of business activity in Riverhead reflects the fact that Suffolk's population growth is now concentrated in Riverhead and the other eastern towns.

Table 19 - Population Growth by Town and Community, Suffolk County, 1990-2005

Town/Community	1/1/05	1/1/04	4/1/00	4/1/90	% Change, 1990-2005
Riverhead Town	32,028	30,909	27,680	23,011	39.2
<i>Riverhead CDP*</i>	<i>12,059</i>	<i>11,693</i>	<i>10,513</i>	<i>8,814</i>	<i>36.8</i>
Southampton Town	58,564	57,659	55,216	45,909	27.6
Southold Town	22,344	21,994	20,599	19,836	12.6
East Hampton Town	21,268	20,945	19,647	16,132	31.8
Shelter Island Town	2,439	2,396	2,228	2,263	7.8
Brookhaven Town	479,578	472,425	448,020	407,977	17.6
Smithtown Town	118,954	118,132	115,715	113,406	4.9
Islip Town	331,002	329,257	323,504	299,587	10.5
Babylon Town	215,723	214,340	211,471	202,940	6.3
Huntington Town	201,496	199,368	195,289	191,474	5.2
Total	1,483,396	1,467,425	1,419,369	1,322,535	12.2

* Riverhead census designated place.

Source: Long Island Power Authority

The industry mix of retail activity in the community of Riverhead differs somewhat from the industry mix of retail activity in Suffolk County as a whole. More than one-third of all retail establishments in Riverhead consist of clothing and accessory stores as compared with 13 percent for Suffolk County as a whole. However, the Riverhead community lacks the full range of retail establishments characteristic of a well-served community.

Table 20 - Number of Retail Businesses, by Line of Retailing, Riverhead (Zip Code 11901) vs. Suffolk County, 2004

Industry	Riverhead	Percent Distribution	Suffolk	Percent Distribution
Motor Vehicle & Parts Dealers	33	10.2	596	8.8
Furniture & Home Furnishings Stores	24	7.4	370	5.5
Electronics & Appliance Stores	11	3.4	292	4.3
Building Material/Garden Stores	25	7.7	530	7.8
Food & Beverage Stores	35	10.8	1,279	18.8
Health & Personal Care Stores	21	6.5	483	7.1
Gasoline Stations	13	4.0	526	7.7
Clothing & Accessory Stores	114	35.3	908	13.4
Sporting Goods, Hobby, Book Stores	16	5.0	363	5.3
General Merchandise Stores	6	1.9	142	2.1
Miscellaneous Store Retailers	17	5.3	849	12.5
Non-store Retailers	8	2.5	451	6.7
Total	323	100.0	6,789	100.0

Source: U.S. Census Bureau, County Business Patterns, 2000, 2004

3.6.2 Purchasing Power of Riverhead and Long Island Residents

Whenever a new shopping center is proposed, there are questions concerning whether the community can support the new retail activity. With the expansion of the east end wineries and their utilization as a venue for special occasions, east end tourism has become a year round industry. Given the location of the proposed shopping center, at the gateway to the Hamptons and the North Fork wineries, the Shops at Riverhead are likely to attract customers from well beyond the Riverhead community. Therefore, in discussing the purchasing power available to support the proposed Shop's at Riverhead, it is necessary to examine the purchasing power of households not only in Riverhead but also throughout Nassau and Suffolk Counties.

Census Bureau data shows that Nassau and Suffolk Counties contained some of the highest income households in the nation in 2005. Median and mean household incomes in Nassau and Suffolk Counties were well above comparable national averages. Median household income in the Town of Riverhead, which has been estimated by inflating 1999 census data by the increase in the New York regional consumer price index between 1999 and 2005, also exceeds the comparable U.S. median.

**Table 21 - Mean and Median Household Income in Selected Nassau-Suffolk Towns
In 2005 Inflation Adjusted Dollars**

County/Town	Median Household Income	Mean Household Income
Nassau	\$80,293	\$105,301
Hempstead	76,518	93,854
North Hempstead	88,928	131,568
Oyster Bay	87,178	116,985
Suffolk	77,109	94,244
Babylon	71,904	83,837
Brookhaven	76,451	87,313
Huntington	91,177	123,824
Islip	73,460	86,399
Smithtown	101,615	113,387
Riverhead Town	55,512**	N.A.
Riverhead CDP*	42,456**	N.A.
United States	46,242	62,556

*Census Designated Place **Inflated from 1999 Census figure to reflect 20.17% increase in the New York regional consumer price index between 1999 and 2005; N.A. – Not available.

Source: U.S. Census Bureau, American Community Survey, 2005

3.6.3 Property Tax Revenue

According to the Statement of Real Property Taxes for 2006-2007 (see Appendix L), current annual property taxes for the two parcels that comprise the subject site are \$32,888±. Of this, approximately \$20,113 are received by the Riverhead Central School District (“CSD”).

3.8 COMMUNITY FACILITIES AND SERVICES

Education

The subject site is within the Riverhead CSD boundaries. As the subject site does not contain residential structures, there are currently no school-aged children generated on-site. The School District contains five elementary schools, a middle school and two high schools (including one “alternative” high school). Based upon the School District’s website and the 2004-2005 School Report Card, K-12 enrollment was 4,801 and per pupil expenditure was \$14,444.

According to the current tax bills (2006-2007), the annual taxes levied for the school district from the subject site currently total \$20,113±.

Fire Protection

The subject property is situated in the service area of the Riverhead Fire Department, with headquarters located at 24 East Second Street in the hamlet of Riverhead. According to the Riverhead Fire Department website (<http://www.riverheadfd.org/>), there are four fire stations (including headquarters) and six companies servicing the Fire District area. The Department currently has 210 volunteer members. According to the website, the Fire Department responded to 1009 fire alarms in 2005 and as of August 8, 2006, the Department responded to 501 alarms. Further information, obtained from the Town of Riverhead website (<http://www.riverheadli.co/fire/html>), indicates that the Fire Department has the following equipment: six pumpers, one ladder truck, one tanker, one heavy rescue, two brush trucks, four Chief’s vehicles, and six support trucks.

Correspondence was forwarded to the Chief of the Department, Edward Carey, on December 19, 2006, advising of the proposed project and requesting information on the Department (see Appendix M). A written response has not been received. However, Chief Carey was contacted by telephone and his responses to questions regarding potential impacts to the Fire Department are discussed in Section 4.8 of this DEIS.

Ambulance Service

The subject property is situated in the service area of the Riverhead Town Volunteer Ambulance Corps, with headquarters located at 1111 Osborne Avenue in the hamlet of Riverhead.

Correspondence was forwarded to Ronald Rowe, President of the Ambulance Corps, on December 19, 2006, advising of the proposed project and requesting information on the Corps (see Appendix M). A response Chief Joseph Gadizinski of the Ambulance Corps, dated January 22, 2007, indicates that the Ambulance Corps currently has 75 members and responded to 2,500 calls in 2006. The correspondence also indicates that the Ambulance Corps has the following equipment: four advanced life support equipped ambulances, one advanced life support first responder vehicle, one basic life support responder vehicle and a Chiefs' basic life support responder vehicle. The Ambulance Corps typically transports to Peconic Bay Medical Center, unless special circumstances arise. In addition, it is estimated that approximately 20 to 25 percent of the calls responded to by the Ambulance Corps are from commercial sites.

Police Protection

The subject property is under the jurisdiction of the Riverhead Town Police, located at 210 Howell Avenue, in the hamlet of Riverhead. Correspondence was forwarded to Chief of Police David J. Hergermiller on December 19, 2006, advising of the proposed project and requesting information relative to service availability (see Appendix M). A follow-up letter was sent on January 9, 2007 (see Appendix M). No response was received to either letter. Follow-up telephone calls were made; however, no response was received.

Water Supply

As the subject site is currently vacant, there is no potable water utilized on site. However, it should be noted that water was formerly supplied to the site by the Riverhead Water District.

Solid Waste

As previously indicated, the subject site is vacant. Thus, there is currently no solid waste generated on-site.

3.9 VISUAL AND CULTURAL RESOURCES

3.9.1 Visual Resources

In order to determine the visual character of the site and community, an assessment of the surrounding area was undertaken. The site and surrounding area were visited on January 12, 2007. Photographs of the site and the surrounding area taken during that visit are included in Appendix G of this DEIS.

The area in which the subject property is located is visually diverse. Route 58 is a commercial/industrial corridor and the visual aspects reflect this non-residential character. There are myriad uses (including car and motorcycle dealerships, motor raceway, restaurants, a hotel), signs, buildings of varying sizes and shapes and overhead wires, as depicted in Photograph Nos. 10 through 16 and 18 in Appendix G of this DEIS.

The site itself is not visually pristine at the front portion of the property. The entry drive is gated, and just beyond the gates lies the remnants of a former industrial building and parking area (see Photograph Nos. 1 and 2 in Appendix G). Views into the site from Route 58 are limited to the former building/parking area and the along the driveway, due to the configuration of the site. Tall evergreen as well as deciduous vegetation blocks views to the interior portion of the site, which has been disturbed by the former Hazeltine industrial facility. Photograph No. 3 illustrates the entry drive entry, which leads to the former main Hazeltine building and parking area. Photograph Nos. 5 and 6 depict the remnants of the former Hazeltine building and illustrate the existing woodlands to the north and west of the subject property. This interior disturbed area is not significantly visible from the surrounding properties, with the exception of the automobile dealership to the southwest.

Photograph No. 4 illustrates the wooded buffer located along the eastern portion of the property that separates the site from the Millbrook Village residential community to the east. The residences in this community are barely visible through the winter vegetation. Photograph No. 9 provides a representative view of the residences within Millbrook Village. Photograph No. 7 illustrates the vegetative buffer that exists between the subject property and the adjacent automobile dealership to the southwest. Winter vegetation screens some of the views to this property.

Photograph No. 8 in Appendix G is a representative photograph of the residences within Foxwood Village, located to the north of the subject property. There are no-to-minimal views of the subject property from this residential community.

The Adchem building and parking area, which is an industrial use located to the west-northwest of the site, is visible from the property.

Overall, the visual characteristics of the area in which the subject property is located are mixed, due to the variety of non-residential uses that are located along Route 58. Visually, the Route 58 corridor is generally typical of commercial development as previously noted. The community can also be characterized by its general lack of screening vegetation, as most of the buildings are clearly visible from the roadway. The overall appearance of the area reflects the industrial and commercial development that has developed over a long period of time.

3.9.2 Archaeological and Historical Resources

A Phase I Archaeological Investigation was performed by Tracker Archaeology Services, Inc. (hereinafter “Tracker”) for the prior application – Marquee Plaza in May 2002. A copy of the this report is included in Appendix N of this DEIS. This study covered approximately 15 acres of the current subject property. An additional investigation by Tracker entitled *Extended Phase IB Archaeological Survey for the proposed Shops at Riverhead* covered the other 26 acres of the subject property that was not previously examined (see Appendix N). Each of these reports is summarized herein.

Phase IA and Phase IB (May 2000)

Between April 6 and 26, 2000, Tracker conducted a Phase IA documentary and Phase IB archaeological survey for the proposed 15±-acre Marquee Plaza site. The purpose of the study was to determined prehistoric and historic potential of the project are for the recovery of archaeological remains. The Phase IA was implemented by a review of the original and current environmental data, archaeological site files, other pertinent archival information, maps, and documents. Specific methodology and sources are included in the complete report located in Appendix N of this DEIS.

The purpose of the Phase IB survey was to recover physical evidence to determine the presence or absence of archaeological sites on the property. This was accomplished through subsurface testing and ground surface reconnaissance.

Assessing the known environmental and prehistoric data, Tracker notes the following:

- The study area is situated approximately 600 feet from a freshwater pond, 300 feet from an old intermittent drainage, and 1,800 feet north of the Peconic River;
- The study area is situated on level terrain with well-drained soils; and

- Two prehistoric sites were reported in the vicinity of the study area. However, they were found along large bodies of water such as the Peconic River and Merritts Pond. A prehistoric archaeological survey conducted across the road and utilizing 25-to-50 for shovel test pit intervals encountered no prehistoric sites.

Therefore, based upon the analysis of prehistoric potential, it is the opinion of Tracker that the study area has a moderate potential for the recovery of prehistoric sites. The type of site encountered would likely be a small procurement site from the Woodland or Archaic prehistoric period. See Appendix N for additional details.

Historic potential was also examined. An analysis of the 17th through 20th century activities on and around the site and the Riverhead community was conducted. Assessing the known environmental and historic data, Tracker concludes the following:

- Euro-American industrial sites are listed in the vicinity of the project area. However, they are situated along the Peconic River, 1,800 feet to the south;
- No Contact Period Native American sites are situated in the nearby area; and
- No historic structures were noted on, or adjacent to, the project area according to the historic maps reviewed. Old Country Road did not witness much settlement during the time reviewed on historic maps.

Therefore, it is Tracker's opinion that the study area has a low potential for the recovery of historic sites.

For the Phase IB portion of the study, a walkover/reconnaissance and shovel testing were conducted. Any exposed ground surfaces were subjected to a close-quarters walkover. Covered ground terrain was reconnoitered at approximately 15-meter intervals for any above-ground features such as berms, depressions, or rock configurations which might be evidence for a prehistoric or historic site. Photographs were taken of the project area.

Shovel testing was conducted across the project area at approximately 15-meter intervals on average. Each shovel test pit measured 30-to-40 centimeters in diameter and 10-to-20 feet into the subsoil, wherever possible. All soils were screened through a ¼-inch wire mesh and observed for artifacts. All the shovel test pits were flagged in the field and mapped. Soil stratigraphy was recorded.

Field testing of the project area consisted of the excavation of 175 shovel test pits across the property. No prehistoric or historic artifacts or features were encountered.

Features on the property are associated with a middle-to-late 20th century development of the land. At the time of the study, features included: the Hazeltine factory; asphalt road and parking lots; dirt trails leading to a utility shed and electric boxes; a fenced in recharge basin; water valves; and antennae. This previously-developed area is generally hidden from view of Old Country Road. In addition, at the time of the study in 2002, the remains of a middle-to-late 20th century metal building and associated asphalt road and parking lot were situated along Old Country Road.

The Phase IA archaeological documentary study determined that the property had a moderate potential for the recovery of prehistoric cultural remains and low potential for historic remains. However, the Phase IB archaeological survey recovered no historic artifacts or features. No prehistoric artifacts or features were recovered. Therefore, no further archaeological work is recommended.

Correspondence, dated June 19, 2002, was received from Ruth L. Pierpont, Director of the Historic Preservation Field Services Bureau of the New York State Office of Parks, Recreation and Historic Preservation (“OPRHP”) (see Appendix N). This correspondence (relating to the Marquee Plaza application) indicated:

“Based upon this review, it is the OPRHP’s opinion that your project will have No Impact upon cultural resources in or eligible for inclusion in the State and National Registers of Historic Places.”

Extended Phase IB (January 2007)

The extended Phase IB was conducted between November 16 and December 8, 2006 by Tracker for the purpose of identifying potential physical evidence for the presence or absence of archaeological sites on the project area, since the size of the subject property was increased since the original Phase I Study was performed (see Appendix N of this DEIS). According to Tracker, the current investigations comprise extended Phase IB field work for the associated extended proposed construction area added to the property after the original Phase IA and IB were completed in 2002 under the development name of "Marquee Plaza."

A summary of the methodology, results and recommendations follows. As with the original Phase IB, both a walkover/reconnaissance and shovel tests were conducted. Any exposed surfaces were walked over at approximately three-to-five meter intervals to observe for artifacts. Covered ground terrain was reconnoitered at approximately 15 meter intervals to observe for any above-ground features, such as berms, depressions, or rock configurations which might be evidence for historic or prehistoric features. Finally, photographs were taken during the walkover.

In addition, shovel tests were excavated at approximately 15 meter intervals across the project area. Each measured approximately 30-to-40 centimeters in diameter and was dug into the underlying subsoil (B Horizon) 10-to-20 centimeters when possible. All soils were screened through ¼-inch wire mesh and observed for artifacts. Shovel test pits were flagged in the field and soil stratigraphy was recorded.

Field-testing of the project area included the excavation of 384 shovel tests. No prehistoric artifacts or features were encountered. No historic artifacts or features were encountered. A large asphalt parking area was observed on the project area. No further archaeological work was recommended by Tracker.

4.0 PROBABLE IMPACTS OF THE PROPOSED ACTION

4.1 SUBSURFACE CONDITIONS, SOILS AND TOPOGRAPHY

4.1.1 Subsurface Conditions

As discussed in Section 3.1.1, a Phase I ESA was conducted to identify RECs and PECs for the subject property. According to the ESA the following RECs were identified:

- A 13,000 pound Freon spill that occurred adjacent to the northwest side of the Hazeltine building in 1987, which was found to have impacted the underlying groundwater. This may have been associated with the aboveground Freon storage tank that was located on the west side of the building;
- The existing on-site sanitary system and associated subsurface leaching pools, which may have received industrial waste from the main on-site building. This includes the sanitary system located off the southwest corner of the building, two leaching pools located on the south side of the building, the leaching pool located on the north side of the building, and the two leaching pools located off the northwest corner of the building;
- The unidentified discharge point of a floor drain located in the northern storage room of the main building;
- Large batteries and transformers located in the southern storage room;
- A large soil mound of unknown origin located in the woods off the northwest corner of the paved parking area;
- The soil surrounding the former in-ground hydraulic lifts located in the former Quonset hut in addition to the unidentified discharge points of seven floor drains also located in the former Quonset hut. Additionally, there was a stained area north of this hut;

- The condition of the recharge basin, which received discharge from a clay pipe and was used for recharge from the air stripping system that was shut down in August 1999. There are two recharge basins located on-site. A small recharge basin (now off-site) is present in the northeast corner of the paved parking area of the main building and a large recharge basin is located in the southwest corner of the parking area. No subsurface stormwater leaching pools were observed in the paved parking areas located on-site;
- The use and condition of a vent pipe on the west side of the small transformer room and the possible linkage to a UST;
- The presence of two water supply wells -- one on the south side of the main building and the other on the north side of the former Quonset hut; and
- The possible presence of ACM in the main building. Several areas within the building contain vinyl floor tiles, which may contain ACM.

The most recent groundwater monitoring well results were reviewed by the SCDHS and the NYSDEC to determine if the Freon spill described in Section 3.1.1 has been successfully remediated. According to an SCDHS letter, dated January 29, 2004, the results were satisfactory, and Malcolm Pirnie's request to abandon the remaining wells was approved. The wells were abandoned along with the remediation system in 2004. Therefore, mitigation of the groundwater plume was found to be complete.

Similarly, closure of the on-site underground structures was granted by the SCDHS in late 2003. Mitigation of the existing, identified underground on-site structures can be considered complete. If, during construction, any additional previously-unidentified underground structures are encountered, they must be properly delineated and sampled.

Any remaining drums and debris along with mounds of soil would be removed and disposed of in accordance with applicable regulations. If the drums contain liquids, they would be tested prior to disposal. In addition, all drums would be inspected for damage and leakage.

A site-specific Health and Safety Plan (“HASP”) has been developed along with a site-specific Material Handling Plan (“MHP”). Both of these documents address not only the previously-identified contaminants at the subject property, but also provide the proper protocol for encountering previously-unidentified contaminants and/or underground tanks and structures. Implementation of the HASP and MHP will help to ensure that no significant environmental impacts, that have the potential result from residual contamination that may exist, would actually result. A brief summary of each plan is provided below, and the plans are included in Appendix B of this DEIS.

Health and Safety Plan

A HASP has been developed to address the potential physical and chemical hazards that workers may face while performing the planned field activities for the subject property (see Appendix B of this DEIS). This HASP has been developed to meet the requirements of the Occupational Safety and Health Administration (“OSHA”) Labor and Construction safety regulation contained in Title 29, Code of Federal Regulations (“CFR”) 1910 and 1926. It is intended for the protection of workers during general on-site activities. Any others, such as subcontractors, clients, and visitors may review this HASP and follow its procedures, if they choose.

The Site Safety Officer (“SSO”) would be responsible for implementing the procedures and safe work practices established in this HASP. These responsibilities include conducting Health and Safety orientations for all persons entering the site, conducting daily tailgate safety meetings with site workers, and control setup and access of restricted work zones. The SSO will coordinate with site contractor’s managers/superintendents to ensure that the HASP is implemented.

All subcontractor personnel who will potentially be exposed to hazardous materials while working at the site will be required to have attended a 40-hour health and safety training course, and have current eight hours of annual refresher training. Tasks that may result in exposure to hazardous wastes include asbestos abatement, UST closures, underground piping and waste consolidation and handling. All workers taking part in these activities must provide certificates of training, respirator fit testing, and medical clearances prior to start of work.

The physical hazards associated with the planned field activities include trips and falls at grade, being struck by collapsing structures, striking overhead power lines, falls from elevated platforms (scaffolding, cherry picker, etc.), open excavations, and being stuck by/against objects and equipment. The chemical hazards associated with this site consist of potential exposure hazards associated with heavy metals, polycyclic aromatic hydrocarbons (“PAHs”), and volatile organic compounds (“VOCs”).

Air monitoring will be conducted by the SSO at this site during all planned intrusive field activities to ensure that the workers are appropriately protected from the potential chemical hazards. A photo-ionization detector (“PID”) organic vapor meter (i.e., Photovac Model 2020 or similar will be used). This instrument is designed to measure trace quantities of VOCs in air and has a parts per million (“ppm”) sensitivity range. Air monitoring readings will be recorded every 15 minutes during site activities.

Based upon the hazard evaluation results, all tasks will initially be performed in Level D protection. In the event that the established action levels are exceeded, the level of protection will be upgraded to Level C. The anticipated levels of personal protection based on work activities are:

<u>Work Activity</u>	<u>Anticipated Level of Personal Protection</u>
1. Pre-Demolition Remediation	Level D or Level C
2. General Demolition	Level D
3. Confined Space (if needed)	Level C
4. Underground Utilities	Modified Level D

5. Security	Level D
6. Asbestos Abatement	Level C
7. Handling Materials Potentially Containing Lead	Level C

The following is a description of the personal protective equipment required for Level D:

- Hard hat;
- Disposable coveralls (optional except for asbestos work);
- Safety glasses, goggles, or faceshield;
- Steel-toe and shank, chemical-resistant boots;
- Chemical-resistant gloves; and
- Hearing protection, Noise Reduction Rating (“NRR”) of 35 decibels (as necessary).

To ensure that safe work practices are followed, the following procedures will be implemented:

- All contractor personnel must review the HASP prior to participating in the planned field activities;
- A copy of the HASP will be available at the site for reference during the planned field activities;
- All new personnel entering the site will be given a Health and Safety orientation to review the site hazards and restrictions. Weekly safety meeting will be held by the SSO to restate health and safety requirements and procedures, discuss on-going safety issues, and outline any new procedures which may be needed based on changing field conditions. Health and safety orientation and weekly meetings attendance will be recorded by the SSO;
- Dust suppression, using a water spray, will be used when needed to reduce airborne particulates during the field activity;

- A pre-entry, tailgate safety meeting will be conducted prior to the start of each day to discuss the associated hazards. This meeting will be recorded by the SSO;
- The SSO will inform all subcontractors of the potential hazards associated with the site and the planned field activities. A copy of the HASP will be made available for their review;
- All underground utilities and structures will be cleared and marked out prior to any ground-intrusive work;
- All site visitors requiring access to the site will be required to review the HASP and their name, title, and affiliation will be recorded by the SSO;
- No eating, drinking, or smoking will be permitted in the contaminated exclusion or contaminant reduction zones;
- No sources of ignition, such as matches or lighters, will be permitted in the work zones. The buddy system will be used in all work areas; and
- During hazardous weather conditions, such as lightning and thunder storms, work will cease immediately.

All releases of materials must be responded to immediately and the emergency response procedures must be activated. During active field work, air monitoring equipment and other health and safety equipment will already be operating according to procedures outlined above. In an emergency situation, however, additional response measures are to be taken, and additional equipment would be used. All responses to releases are subject to the controls designated in the site HASP.

An emergency first aid kit, sized for up to 50 persons, and including a portable eye wash station, will be provided at the personnel decontamination facilities. A minimum of two fire extinguishers will also be available at the facilities. The HASP provides telephone numbers for emergency service providers. The closest hospital to the site is Peconic Bay Medical Center, which is located at 1300 Roanoke Avenue in Riverhead. Directions and a map of the shortest route to the hospital from the subject property are included in the HASP.

Material Handling Plan

The MHP is provided in order to mitigate potential environmental impacts during the construction of The Shops at Riverhead property. The MHP has been prepared to address the previously-identified contaminants as well as yet unidentified contaminants and/or underground storage tanks or structures which may be discovered during construction activities (see Appendix B of this DEIS).

Previous environmental studies included a June 26, 2003 Phase I ESA and a September 9, 2003 Limited Phase II ESA, both prepared by NPV. The Phase I ESA identified a number of RECs associated with on-site sanitary leaching structures, floor drains, soil stockpile, hydraulic lifts, surface soil staining, recharge basin, and UST. The Phase II ESA investigated the reported RECs and found only minor contaminant issues which were subsequently addressed, as summarized in the NPV Closure Letter to Mr. Walter Petrule of the SCDHS dated October 27, 2003.

No environmental conditions are reported to remain at the subject property. However, procedures are provided to be used in case any as-yet unidentified environmental concerns are discovered during construction activities at the property. All work described in the MHP would be performed under the oversight and with direction from an experienced environmental professional. Sampling and analysis will be provided by a New York State Department of Health Environmental Laboratory Approval Program -certified laboratory.

The MHP includes procedures for drum handling, USTs (including hydraulic equipment), UIC structures and potentially-impact soils, if any such situations are encountered.

A Completion Report would be prepared and submitted to the Town (with a copy provided to the SCDHS and NYSDEC, as appropriate, based on actual conditions encountered at the site during redevelopment activities) summarizing the occurrence, observation, measurement, laboratory data, and final disposition of any environmental concerns as listed above, if encountered at the subject property.

4.1.2 Soils and Topography

A substantial portion of the site has already been disturbed by the previous development on the property. Additional disturbance of the soils would occur as a result of excavation and grading for the proposed development. As most of the soil on the site is classified as either Carver or Plymouth soils, there are few limitations to development (with the exceptions of slopes and lawns and landscaping), and no significant adverse impacts to soils are expected.

Those limitations associated with steep slopes are not applicable in this case, as the majority of the site has already been disturbed and graded in association with the former Hazeltine development. In addition, limitations to the installation and survival of landscape materials can be overcome with soil amendments and the importation of topsoil, as necessary.

According to the project engineer, the greatest potential for impact to existing soils and topography will be during the construction stage of the project. Impact to soils and topography will not be a factor after construction. During construction, erosion of soils during rainstorm events will be minimized by creating temporary check dams of hay bales along potential stormwater routes and along steep inclines of topography. Stormwater will be collected in specially-constructed depressed areas for silt collection and leaching into the aquifer. The entire site will have a silt fence erected on its perimeter, wherever potential impact to surrounding properties may exist.

Since more than one acre of site development is contemplated, a NYSDEC General Permit for Stormwater Discharges (GP-02-01) will be filed by the developer or its representative, which includes a Notice of Intent (“NOI”) to obtain coverage under the general SPDES permit, issued for this project. A detailed *Soil Erosion & Sediment Control Plan* and *Soil Erosion & Sediment Control Plan and Notes* (also known as the Stormwater Pollution Prevention Plan [“SWPPP”]) has been submitted to the Town Planning Department and will be submitted to the NYSDEC, prior to start of construction, for review and comment.

In general, the granular nature of the soil on the project site lends itself to being protected against soil erosion and silting by a simple system of silt fencing, hay bale style check dams and silt ponds. This has proven to work in the Town at other similar sites and prevents “off-site” sediment transport.

The change in topography during construction will be designed to yield zero surplus and zero import of soil material. The anticipated cut and fill for this site is approximately a balanced amount of 160,000 cubic yards. Therefore, truck traffic associated with the import or export of natural materials from the site is not expected, although there would be truck traffic associated with the removal of construction and demolition debris.

As noted, the grading of the site will be a “balanced design,” resulting in a relatively flat surface area for which to build the structures and infrastructure. This design will provide effective control of stormwater during rain storm events and will provide improved visibility for shoppers and vehicle operators from anywhere on the site. A slight up-slope will be created at the main entry road, so that the site grade gradually meets the existing road grades, as established by the SCDPW along Route 58. In general, the site will be slightly higher than Route 58, which will be beneficial to minimize headlight glare from parked or moving vehicles on the site, and thereby minimize distraction to drivers along the roadway. Headlight glare will also be eliminated by the planting of low shrubs along the perimeter of the site’s parking lot adjacent to the County road.

In addition to the already cleared areas, the project engineer indicated that an additional 25± acres of the site are proposed to be cleared. Areas developed with impervious surfaces for parking, pedestrian walks and buildings would comprise approximately 36.49± acres and planted areas with fertilizer-dependent vegetation as well as remaining natural vegetation would account for another 5.06± acres (see Appendix A).

Overall, based upon the analysis presented, it is anticipated that there would be no significant adverse impact to soils and topography. Moreover, erosion and sedimentation control measures would be implemented to minimize potential impacts.

4.2 WATER RESOURCES

4.2.1 Groundwater

208 Study

In order to ensure the protection of groundwater, the proposed project will comply with the relevant recommendations of the “Highest Priority Areawide Alternatives” of the *208 Study* regarding Hydrogeologic Zone III, as described below.

- Sanitary waste will be handled by connection to the Riverhead Sewer District;
- The use of inorganic, fast-acting fertilizers will be restricted; and
- Stormwater on the site will be collected and recharged on site through the use of on-site inlets spread throughout the site and stored underground in leaching pools and/or piping in order to minimize the transport of nutrients, metals and organic chemicals to groundwater.

SGPA Plan

The following are the recommendations for the Central Suffolk (North) SGPA along with the project’s consistency therewith:

- *Suffolk County, together with the Towns of Riverhead and Southold should expand the existing agricultural preserve. The County should continue to acquire development rights under its Farmland Preservation Program.*

The proposed project involves the purchase of 92 TDRs in order to permit the construction of the level of development desired for The Shops at Riverhead, and the associated relaxation of certain dimensional requirements. While allowing the proposed project to proceed, the purchase of the 92 TDRs permits the protection of 92 acres of land within the APZ sending zone, designated by the Town.

- *The Town of Riverhead should amend its zoning to require a five acre minimum lot size for all farmland located within the SGPA. At the same time, it should provide for the transfer of development rights to non-farm sites outside the SGPA at one dwelling unit per two acres.*

This recommendation is directed to the Town, not a private applicant. Therefore, it is not relevant to the proposed action.

- *The Town of Riverhead should amend requiring clustering of development on those parcels where T.D.R. is not feasible. The County and the Town of Southold should use a combination of selective acquisition, T.D.R. and mandatory clustering to assemble and protect a 200+ acre watershed preserve in the vicinity of Laurel Lake. Such a preserve would comprise both woodlands and portions of farm parcels.*

This recommendation is directed to the Towns of Riverhead and Southold and Nassau County. Therefore it is not relevant to the proposed action. However, the subject site has been designated as a receiving area for TDRs.

- *The County should acquire the unused portion of Camp Wauwepex while permitting the Boy Scouts to continue to use the remainder. The County or Town of Riverhead should acquire the Canoe Lake area and part or all of several small parcels along the Peconic River.*

This recommendation is not applicable to the subject site or the proposed project.

- *The Federal Government should place excess land at the National Cemetery and in the Airport clear zones for the Calverton facility in a protected category. Such lands constitute an important part of the deep recharge area and should be retained as open space.*

This recommendation is not applicable to the subject site or the proposed project.

- *The Town of Riverhead should reduce the amount of industrially zoned land and should concentrate such development in existing industrial areas at the end of the Long Island Expressway. The Town of Southold should facilitate the phase out of the former mining operation and of the small industrial use on Sound Avenue. Both properties should be converted to residential use and further industrial development should not be permitted in this part of the SGPA.*

The site is a former industrially-developed site that is now vacant and zoned for commercial development. The proposed action involves commercial development, therefore, this recommendation is not relevant.

- *The Towns of Riverhead and Southold should review their zoning ordinances and amend them as necessary to preclude the expansion of commercial activities beyond the limits of those SGPA areas where such activities currently exist.*

This recommendation is directed to the Towns of Riverhead and Southold and, thus, is not applicable to a private applicant. Nonetheless, although located within the SGPA, the site has been rezoned from industrial (which is the land use proposed in the *SGPA Plan*) to DRC, a commercial zoning district, based upon extensive analysis performed as part of the *2003 Town Comprehensive Plan*. This rezoning occurred over a decade after the *SGPA Plan* was published.

4.2.2 Stormwater Runoff and Drainage

Drainage

The proposed action at the project site may result in alteration of drainage flow or surface water patterns through the creation of impervious surfaces. The only drainage features present on the property consist of a natural drainage swale and man-made recharge basin located in the western portion of the site. Development of the project will result in these features being filled to accommodate parking facilities for the proposed destination retail center. In addition, the property is underlain by soils having good percolation characteristics which will allow for the efficient and rapid infiltration of surface runoff. In accordance with Town regulations, all surface runoff generated on-site must be contained on-site, therefore all runoff will be directed to parking lot leaching catch basins and stormwater leaching piping or pools.

The leaching piping may be of specially-coated steel or high density polyethylene (“HDPE”) material. The leaching pools may be of precast concrete or HDPE material. All options of materials and method of stormwater infusion into the groundwater aquifer will be evaluated for this project. The final decision on materials will be determined by the project owner. All of the above methods and materials for stormwater recharge are viable for this project, hence, cost evaluation may be the governing factor of final selection.

The site has been divided into five stormwater drainage areas (SDA-1 through SDA-5). The following chart shows the areas, drainage requirements and the amount of drainage capacity provided.

Table 22 – Stormwater Drainage Data

Stormwater Drainage Area	Square Footage of Drainage Area	Cubic Feet Required	Cubic Feet Provided	Linear Feet of Pipe Required	Linear Feet of Pipe Provided
SDA-1	349,022	52,055	63,951	1,900	2,334
SDA-2	626,756	89,933	101,764	3,282	4,120
SDA-3	545,077	82,970	100,010	3,028	3,650
SDA-4	232,371	33,164	44,164	1,210	1,788
SDA-5	57,825	5,873	7,008	612	730
TOTAL	1,811,051	263,995	276,897	10,032	12,622

A copy of the Site Development Plan showing the drainage calculations is included in Appendix A of this DEIS. The proposed stormwater management system has been designed to handle stormwater runoff based upon Town requirements.

According to the project engineer, it is anticipated that the existing “on-site” drainage swale will be filled during the construction phase of the project, to create acceptable building surfaces on the subject property. Inspection of the property did not reveal any evidence of active flow gullies or erosion which would indicate that the existing swale is an active drainage feature. Additionally, it appears that the former southern end of the drainage swale was previously filled to accommodate development of the property directly south of the subject site. As a result, it is evident that the regional drainage pattern has previously been altered and that the subject swale no longer actively functions as an active drainage feature.

The potential exists for storm drains to be impacted by inadvertent discharges related to current site operations -- more specifically general debris and runoff associated with vehicular discharges. Sediment traps, located within the catch basins, would be inspected and cleaned out on a regular basis. In addition, sweeping of the parking areas would also occur in order to prevent debris from entering the stormwater management system. No other potential contamination from project operations is expected.

The United States Environmental Protection Agency (“USEPA”) Stormwater Phase II Final Rule regulates two classes of stormwater dischargers on a nationwide basis: Operators of small municipal separate storm sewer systems (MS4s) located in "urbanized areas" as defined by the Bureau of the Census, and operators of construction activities that disturb equal to or greater than one and less than five acres of land. Additional small MS4s (outside of urbanized areas) and construction sites (disturbing less than 1 acre of land), along with other sources which are a significant contributor of pollutants to waters of the United States, may be brought into the NPDES Stormwater Program by the NPDES permitting authority (EPA, 2002).

The Phase II Stormwater Regulations were reviewed in connection with stormwater impacts and the proposed project. Stormwater pollution can result from the increased volume and rate of runoff from impervious surfaces and the concentration of pollutants in the runoff. Stormwater pollution can cause changes in hydrology and water quality that result in a variety of problems, including habitat modification and loss, increased flooding, decreased aquatic biological diversity, and increased sedimentation and erosion (EPA, 2002). The Phase II Final Rule describes six minimum control measures which most regulated MS4s may implement. These include public education and outreach on stormwater impacts, public involvement and participation, illicit discharge detection and elimination, construction site stormwater runoff control, post construction stormwater management in new development and redevelopment, and pollution prevention and good housekeeping for municipal operations.

Additionally, the USEPA lists several structural and non-structural best management practices (“BMPs”) for stormwater management. Some examples of structural BMP's include dry extended detention ponds, infiltration basins and trenches, catch basins, porous pavement, sand and organic filters, grassed swales, and stormwater wetlands. Non-structural BMP's include (but not limited to) alum injection, buffer zones, open space design, conservation easements, narrower residential streets, eliminating curbs and gutters, green parking, and alternative pavers.

These measures are primarily intended to control runoff that can impact surface and navigable waters of the United States. The project site is not proximate to such waters nor will any such stormwater be conveyed by stems to surface water. The proposed project will undergo site plan review to ensure consistency with local requirements. As previously stated, the site will be required to contain all surface generated runoff on site that will be directed to leaching catch basins and leaching piping systems and leaching storage pools (of either concrete, steel or HDPE construction, as previously described). During construction, the proposed project will implement erosion and sediment controls such as the installation of perimeter controls, installation of sediment trapping devices, wheel cleaning pads, stabilization of exposed soils, dust control, minimizing clearing to the maximum extent practicable, as well as good housekeeping measures (such spill prevention and control, vehicle maintenance and washing areas, etc.). The *Soil Erosion & Sediment Control Plan* and *Soil Erosion & Sediment Control Plan and Notes* (a/k/a SWPPP) are included in Appendix A of this DEIS. This plan will be submitted to the NYSDEC along with a Notice of Intent.

As a result, best management practices for this site are implemented by containing impervious surface runoff in subsurface leaching structures, designed to contain an adequate volume of stormwater runoff per Town specifications. Systems will be constructed with a total below-grade storage capacity of two inches of direct runoff. All stormwater facilities will be located a minimum of four feet above the groundwater table, so as to provide adequate straining and filtration of suspended and settle-able material, including removal of a portion of any micro-organisms which may be present. It is noted that this form of recharge is consistent with the BMP's established in the *NURP Study*, which found that impacts to groundwater are minimized by attenuation in subsoils. Consequently, no significant surface water or drainage impacts are anticipated.

NURP Study

Long Island Segment of the Nationwide Urban Runoff Program (“NURP Study”)

The *NURP Study* evaluated the impacts of runoff and the means to minimize pollution contributions from stormwater runoff. Some of the major findings that are relevant to the proposed action are as follows:

- With the exception of lead and chloride, the concentrations of inorganic chemicals in stormwater runoff do not have the potential to adversely affect groundwater quality;
- Infiltration through the soil is generally an effective mechanism for reducing lead and probably chromium from runoff on Long Island. Chloride is not attenuated, and the effect of infiltration on nitrogen is undetermined;
- Coliform and fecal streptococcal bacteria indicators are removed from stormwater as it infiltrates through the soil; and
- Any control of chemical constituents in runoff requires awareness of their year-round presence. The use of highway deicing salts in winter explains the high chloride concentrations found in runoff during that season.

Furthermore, the *NURP Study* made specific recommendations. The proposed project’s consistency with same is shown in the normal type below each italicized recommendation:

- *Continue to use recharge basins wherever feasible for the disposal of stormwater and the replenishment of the groundwater.*

As indicated in Section 3.2 of the DEIS, impermeable surfaces on the subject site would increase, thus stormwater runoff generated on-site would increase. While the proposed action would not utilize recharge basins for stormwater disposal, it would utilize on-site catch basins and leaching pools or piping that would allow filtration through the soil and ultimate recharge of stormwater to groundwater.

Stormwater management, as mandated by Town standards, requires the ability to store runoff from a two-inch rainstorm event, during a 24-hour period. That storage volume shall be automatically leached into the groundwater aquifer, by the nature of the infrastructure provided. The total estimated stormwater storage volume is 263,995 cubic feet. As described above, the proposed stormwater management system will be capable of handling over 276,000 cubic feet of runoff. See the *Drainage* discussion, above, for additional information.

Upon implementation of the proposed action, lot coverage on the subject site is anticipated to be approximately 12.18 percent pervious surface (landscaped and natural areas). As such, it is anticipated that stormwater generated on-site would also be recharged to the groundwater via these pervious areas. Therefore, the proposed project is consistent with the intent of this recommendation.

- *Consider the use of in-line storage leaching drainage systems, or components thereof, as a substitute for recharge basins in areas, other than parking lots, where maintenance will be assured and where the value of the land for development purposes is greater than the cost of installing and maintaining the underground system. Storage leaching drainage systems should also be considered for use where the installation of recharge basins is not feasible.*

As indicated above, the proposed stormwater management system for the subject site would utilize parking lot leaching catch basins and stormwater leaching piping or pools. Thus, the proposed project is in compliance with this recommendation.

- *Prevent illegal discharges to drainage systems or recharge basins. Such discharges, which often result from improper storage or deliberate dumping of chemicals, must be controlled at the source.*

The proposed drainage and sanitary systems would be designed in accordance with prevailing regulations. No hazardous materials, except for those associated with normal landscape maintenance, are proposed to be stored or handled on-site. Therefore, the potential impact to groundwater quality from these sources is not expected.

- *To maintain existing water quality where it is currently satisfactory, preclude any additional direct discharge of stormwater runoff into surface waters, using all available means for detention and/or recharge to reduce bacterial loads.*

There are no surface waters located on the site. Furthermore, there would be no direct discharge to any off-site surface water body. See the responses above regarding stormwater capture and recharge. Thus, the proposed project would comply with this recommendation.

- *Protect stream corridors from encroachment.*

As the site is not located adjacent to any stream corridors, this recommendation is not relevant.

All regulatory requirements would be satisfied to ensure proper management of stormwater runoff generated by the project to protect groundwater. The measures discussed herein, including the use of BMPs, included in the *Drainage* subsection, would be protective of the groundwater quality. Thus, the proposed action would be consistent with the *NURP Study*.

4.2.3 Sewage Disposal

According to the project engineer, total sewage flow is estimated as the consumptive use of domestic water for the site or approximately 24,163 gallons per day (“gpd”), based upon the following:

487,435 square feet of retail x 0.03 gpd/square foot =	14,623 gpd
<u>318 restaurant seats x 30 gpd/seat =</u>	<u>9,540 gpd</u>
TOTAL	24,163 gpd

Peak flows of four times that amount, or 96,652 gpd, are anticipated and will be utilized as a pumping station design parameter. The pumping station will have two sewage pumps available to pump average day and peak day flows to the Sewer District facilities. A standby generator set shall automatically provide emergency power in the event of power failure or long-term electric outage. All sewage pumps shall be designed to pump a maximum of 70 gallons per minute and be automatically rotated to equalize running time and use. Pumps shall be staged to start and staged to stop, at different intervals, based on sewage level in the wet well of the pumping station. A high liquid level, audible alarm shall sound and a high visibility strobe light shall activate and an emergency signal shall be transmitted to a 24-hour/seven-day monitoring station for dispatch of maintenance and emergency personnel.

A Proposed Sewer Plan, which indicates the internal sewer lines, the sewer pump station and external connection has been prepared by the project engineer and submitted to the Riverhead Sewer District. See the *Sanitary Sewer Plan* in Appendix A of this DEIS. A letter requesting availability has been submitted to the Riverhead Sewer District (see Appendix P). The plans with the last revision dated of October 17, 2007 have been received and approved by the Riverhead Sewer District. As per the aforementioned correspondence “[s]ewer connection is available to service this parcel.”

Moreover, it should be noted that the project engineer, Lou Kalogeras, was verbally assured by the Sewer District Superintendent, at a meeting, that the sewage treatment plant capacity is sufficient to handle the projected flow associated with the proposed action. The Superintendent also indicated that the letter of availability would not have been issued without comment if capacity of the plant was of concern.

4.2.4 Water Supply

According to the project engineer, estimated water use for domestic purposes of a “dry store” retail center has been clearly studied in the past by the SCDHS. Domestic water use estimates are based on SCDHS Standards of 0.03 gpd per square foot of “dry use” space and 30 gallons per day per restaurant seat. This results in a total domestic water use demand of approximately 24,163 gpd ($0.03 \text{ gpd/sf} \times 487,435 \text{ sf} + 318 \text{ seats} \times 30 \text{ gpd/seat}$). Irrigation demand will be minimal, and is estimated at about 50 gallons per minute (gpm) for an 8-hour period or about 24,000 gpd, during turf growing seasons. Fire demand has been based on 0.25 gpm per square foot of space (NFPA recommended fire flow for low hazard areas) divided by the number of fire sprinkler zones in each building. This generally results in a fire flow demand of about 1,500 gallons per minute average for the site at a residual pressure of 20 psi at any building or main fire connection. Fire Company pumpers could reduce that residual to near zero, by drawing heavily on the distribution system on the site and the adjacent Water District system. Backflow prevention flow devices at each water connection to the municipal supply will be provided to protect the municipal system under backflow conditions.

Appendix A contains the proposed *Water Supply Plan*, which illustrates the internal water line layout as well as the two connections to the 12-inch main located within Route 58.

In correspondence dated March 20, 2007, the Superintendent of the Riverhead Water District indicated that the subject property is “within the boundaries of the Riverhead Water District and can be served by same” (see Appendix P). Therefore, there would be no significant adverse impact to water supply resources.

4.2.5 Surface Water, Wetlands and Floodplain

The abandoned recharge basin located on the property would no longer be used, and the area would become part of the proposed parking for the developed. As all stormwater runoff would be contained and recharged on-site through the use of a below-grade stormwater management system, described in Section 4.2.2, there would be no impacts to off-site wetlands.

Based upon the analysis presented above, the proposed action is not expected to have a significant adverse impact on water resources as it will be connected to public sewer and water, stormwater runoff will be captured and recharged on-site and the proposed project would meet the recommendations of the *NURP Study*. Furthermore, the proposed project conforms to the recommendations of the *SGPA Plan* in its preservation of open space and agricultural lands with the purchase of the TDR credits.

4.3 ECOLOGY

4.3.1 Impacts on Ecological Communities

According to the *Site Plan* (see Appendix A), approximately 98 percent of the existing natural vegetation on the subject site would be removed to facilitate the development of the proposed retail center. Specifically, the majority of the site would be cleared, leaving a narrow wooded buffer along the northern property line.

Upon completion, 1.81 percent of the Pitch Pine-Oak Forest would remain on-site. The remnant of the Pitch Pine-Oak Forest to remain would not offer the same wildlife habitat as previously existed. However, undeveloped woodland similar to those on-site are located in the immediate vicinity of the subject site. In addition, all of the existing Successional Old Field habitat would be removed from the site with the redevelopment of the subject site.

Under the proposed action, approximately 10.37 percent of the site would be replanted with landscape species and turf. These plantings would be situated within landscaped islands in the parking areas and areas adjacent to the proposed structures. This type of habitat is not currently found on site. This habitat can be further defined under two of the NHP ecological communities: “Flower/Herb Garden” and “Mowed Lawn with Trees.” The following are the definitions of these communities as described by NYNHP:

“Flower/Herb Garden: residential, commercial, or horticultural land cultivated for the production of ornamental herbs and shrubs. This community includes gardens cultivated for the production of culinary herbs.

Characteristic birds include American robin (*Turdus migratorius*) and mourning dove (*Zenaida macroura*.)”

“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 types and density of plant material used during the landscaping of the project would increase the desirability of these new habitats to the wildlife species listed in the above descriptions, as well as other species. However, the landscaped areas proposed will not benefit the majority of the wildlife species. Both of these ecological communities are distributed throughout New York State, and are ranked by NHP as being secure on a global and statewide level.

The proposed project will result in approximately 87.82 percent of the site being characterized as Paving - Hard Structures. This would represent a significant increase in this community type. As previously indicated in Section 3.3 of this DEIS, the Paving - Hard Structures on-site currently consist of asphalt roadways and parking fields, as well as concrete pads where the buildings were previously located. The proposed action would include similar paved roadways and parking areas, as well as the proposed retail buildings. These buildings will create a different habitat than is currently found on site. The following is a definition of the closest ecological community to this habitat as described by NHP:

“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*.)”

This ecological community is distributed throughout New York State. It is ranked by NHP as being secure on both a global and statewide level.

In sum, 1.81 percent natural vegetation would remain on-site and an additional 10.37 percent would be established in landscaping. The balance, 87.82 percent, would be pavement and buildings. Considering the surrounding area, this represents the loss of approximately one-half of the remaining Pitch Pine - Oak Forest community. As noted Section 3.3 of this DEIS, the Pitch Pine – Oak Forest community is ranked “apparently secure” and “demonstrably secure” globally and as “apparently secure” in New York State by NYNHP. Furthermore, while all of the relatively small Successional Old Field community will be eliminated on site, there are large similar communities in the immediate area. In addition, this community is ranked as “apparently secure” both globally and in the State by NYNHP. As such, the loss of the existing ecological communities as a result of the proposed project is not anticipated to have a significant impact on the regional ecology.

4.3.2 Impacts on Wildlife

As a result of the relatively small size of the existing habitats and the intensity of the surrounding land uses, many of the wildlife species expected on-site are those that are tolerant of human activity. The proposed alterations in the habitat composition on the subject site would have a direct impact on the wildlife species. Specifically, types and density of species present would be impacted.

As previously indicated, implementation of the proposed action would result in the removal of the majority of the woodland areas found on site. Species that require wooded habitats would be limited to the northern edge of the property. This narrow buffer, in conjunction with the treed areas surrounding the residential development adjacent to the site to the north, would provide some habitat potential for certain species. It must be understood, however, that, as explained in Section 3.3 of this DEIS, the ecological value of this property is somewhat limited as it is an isolated area - - surrounded by development.

It is expected that species requiring cover for nesting and larger ranges for foraging would be the most impacted. Therefore, the species expected to use this wooded area to remain on the subject site are likely to be relatively common suburban, human tolerant species. There would be limited potential for forest and edge species and no potential for sensitive forest interior species, which were not expected even under the existing conditions. The habitats found on the project site are expected to provide suitable habitat for a limited variety of wildlife. Thus, the proposed project will favor those species that prefer heavily-developed suburban and urban habitats and those that are extremely tolerant of human activity.

While the species that would ultimately occupy the site would be tolerant of human activity, all species (including the tolerant ones) would be impacted by the proposed clearing, habitat alterations and subsequent increase in human activity.

In determining impacts upon the existing wildlife populations, it is assumed that equilibrium in population size is established for each species as determined by availability of resources in the habitat. Thus, the removal of habitat will cause a direct impact on the abundance and diversity of wildlife using the site. Although the assumption that species are at equilibrium is an oversimplification, and population sizes of many species are controlled below the carrying capacity by other factors, it does provide a worst-case scenario in determining the impact of habitat loss.

In the short term, lands adjacent to the subject property will experience an increase in the abundance of wildlife populations due to displacement of individuals by the construction phase of the proposed project. Ultimately, competition between the displaced species and the species already utilizing the resources of the surrounding lands should result in a net decrease in population size for most species. The overall effect on the density and diversity of both local and regional populations should be minimal, as the area represents only a small portion of similar habitats available in the vicinity. However, there will be a reduction in the total population of the various animal species on the whole because of the loss of habitat from the proposed project.

The following is a site-specific discussion of the potential impacts to the individual species expected to be presently occupying the site, considering the existing habitats and the proposed changes.

Birds

If present on-site, birds such as the crow, dove, blue jay, American robin, northern mockingbird, brown thrasher, gray catbird, cedar waxwing, grackle, northern oriole, and the brown-headed cowbird would be temporarily affected by development of the property. These birds usually adjust relatively well to human activity, and while a few may occasionally utilize the remaining habitat on site, individuals will likely be displaced. Species such as the starling, robin, rock dove, cedar waxwing, catbird, brown headed cowbird, and mocking bird may remain relatively stable following the construction phase of the project providing suitable nesting areas are available.

Some smaller birds that also typically adjust well to development include the finches, towhees, juncos and sparrows. These seed-eating species are generally found in wooded edge habitats and buffer zones and, thus, populations are likely to be limited to the edges of the site where potential habitat will remain on adjoining properties or in the proposed buffer area. Species from these groups expected on-site include the house sparrow, song sparrow, house finch, cardinal, and rose-breasted grosbeak. The purple finch would likely decline in number on site following construction. The northern junco is expected on-site and the fox sparrow, white-throated sparrow and white-crowned sparrow may be present as winter visitors. Populations of the majority of these species are likely to decrease following construction, particularly those that are found primarily in forested habitats. However, mitigation measures such as planting to increase diversity and vegetative cover will help these species to a limited extent. Species that should not be impacted, although their numbers will be reduced, include the introduced house finch, a pest which prefers to nest on buildings, as well as the chipping sparrow, goldfinch, and cardinal, which prefer open edge habitats. No significant regional impacts are expected to these species due to the presence of suitable habitat elsewhere in the vicinity.

Other smaller, insect feeding birds such as the black-capped chickadee, tufted titmouse, and white-breasted nuthatch are also fairly tolerant of development as long as large trees with plenty of food sources remain. Numbers of these species are expected to decline due to loss of habitat, but some individuals may continue to utilize the wooded buffer along the northern property line. The ruby-crowned kinglet and golden-crowned kinglet, which are winter visitors, are not generally tolerant of human activity and are likely to be impacted by the proposed development. The house wren is very tolerant of development and no significant impacts to this species are expected. The Carolina wren may also remain on the subject site, if present, as the site will contain a limited portion of suitable habitat following construction.

If present, the common nighthawk, a special concern species, is typically a ground nester, although it will nest on roofs, and is unlikely to continue utilizing the parcel. The barn swallow may increase in numbers following development, as suitable nesting habitat for the species would increase. The purple martin prefers wetland areas where insects are abundant and would be expected to relocate into more preferred habitat. The indigo bunting prefers areas with thick cover and would also likely abandon the site if present.

The vireos are also relatively sensitive to development and would suffer local impacts from the proposed project. Of the woodland thrushes and creepers, the wood thrush, hermit thrush, and the vireo are expected to utilize the site, as well as the brown creeper. While the wood thrush, hermit thrush and brown creeper are relatively tolerant of human activity, they would be impacted as minimal woodland would remain, and the degree of human activity will be relatively intense. If present, the vireos would not be expected to continue to use the site following development as it typically avoids areas with human activity. The whip-poor-will is nocturnal and prefers open woods with adjacent fields, thus, if present, they will not remain. The eastern bluebird is unlikely to utilize the site following development.

The eastern wood peewee is more vulnerable to development, but is occasionally found in suburban habitats. Numbers of this species are expected to decline on site, although regional populations should not be significantly impacted. The great-crested flycatcher might also be present, although they prefer large areas of open space and would generally be expected to find more suitable habitat in the vicinity. Regional impacts to these species should be minimal given the habitat available in the local area.

Although woodpeckers can adjust well to some types of development as long as wooded buffers remain, it is critical that both large, mature trees and smaller trees are present for feeding and nesting. Populations of these species may decline on site following clearing and the increase of human activity. The site and surrounding woodlands contain suitable habitat for many woodpecker species. Included in this group are common flickers, downy woodpeckers, hairy woodpeckers, red headed woodpeckers and the yellow-bellied sapsucker, all of which are residents on Long Island. No significant regional impacts to these species are expected as there is adequate habitat elsewhere in the vicinity.

It is anticipated that several species of birds associated with old field and/or agricultural habitats would also not use the site following development. The bobwhite and the ring-necked pheasant are generally intolerant of human development and activity and will not utilize the site following development.

Other species of birds that prefer a mix of woodland and field habitat include owls and raptors. Any raptors nesting on site would be expected to be displaced. These species generally roost or nest in forested areas, hunting for rodents and other prey in adjacent open areas. The red-tailed hawk and American kestrel are the most likely species to be present. Both are fairly tolerant of human activity; however, they would abandon the site and move to adjacent areas if present. As long as suitable nest sites remain in nearby areas, impacts to these species should not be significant. The eastern screech owl is likely present on site and within the overall area. While most owls are relatively tolerant of development and human activity, any that are present would be expected to abandon the site due to the loss of habitat and intensity of human activity.

Overall, species tolerant of human intrusion would likely continue to utilize the subject site, while other species would be relocated to more suitable habitat.

Mammals

The mammals likely found on the subject site would also be impacted by the proposed clearing, habitat loss and increase in human activity. As with the bird species, intolerant species are expected to relocate to suitable habitats and local populations are expected to reach a slightly lower equilibrium population density.

The short-tailed shrew is commonly found in open woodlands and field habitats but can live in a variety of habitats and can utilize several different food sources. Although limited numbers may potentially utilize the landscaped and buffer areas, the number of individuals is certain to decrease on the subject site. The masked shrew spends most of its time underground in tunnels and runways. It often burrows beneath leaf litter, fallen branches, logs, and stumps. It is present in most habitats, but prefers mixed deciduous woods and red maple swamps. It is likely that local populations of these two shrews would be impacted, but regional population impacts should not be significant.

The eastern mole is commonly found in woodlands and field habitats with sandy or light loamy soils. They are also common in lawns and landscaped areas when their preferred habitat is destroyed or not available. The species has been known to utilize landscaped and revegetated areas; however, those revegetated areas proposed on the project site are not expected to provide suitable habitat. As such, impacts to individuals currently utilizing the project site are expected.

The white-footed mouse prefers forest edge habitat and does not adjust well to development. Unlike other small mammals, it does not usually move into nearby residential areas when pushed out of its preferred habitat. The population within the proposed development area would be directly impacted. However, some suitable habitat would remain within the overall parcel and in the vicinity. Thus, local declines may be expected but regional populations should remain stable. The house mouse and Norway rat are introduced pests found in or near humans in field habitats, with the Norway rat and black rat also found in urban settings near moist areas. They will eat almost anything and usually cause problems for homeowners. Populations may increase slightly subsequent to development.

The eastern gray squirrel prefers hardwood forests with large, nut-producing trees. Squirrels usually adjust quite easily to urban areas where larger trees remain for feeding and nesting, and are expected to use the landscaped areas and remaining buffers. Relocated squirrels have been known to cause extensive damage to houses by gnawing holes in roofs and eaves to gain access to shelter. Maintaining the buffer areas will help to reduce the impacts to this species; local populations would likely be reduced. The eastern chipmunk prefers forest edge habitat with thick understory vegetation. They have a small home range of about one-third acre. Chipmunks feed on nuts, seeds, fruits, vegetables, and some small insects and animals. Chipmunks can adjust fairly well to fragmentation of the natural areas. However, given the minimal habitat that would remain following development, populations are likely to relocate.

Several bat species are potentially present on the subject site. Due to the absence of caves on Long Island, these species generally roost in colonies in the attics of buildings, although some species will occasionally roost in trees. Development of the site may have localized impacts on these species although more preferred habitat is found elsewhere in the immediate vicinity.

The eastern cottontail seems to do well in both suburban and natural habitat, which may be due in part to its variable home range, which varies from one-half acre up to 40 acres depending on conditions. It also has a large number of food sources that are available in almost any setting. If present, local populations will decrease and it is expected that this species would relocate to a more preferred habitat in the proximate area.

Development of the existing forest habitat would also have slight impacts on raccoon and opossum populations. Both species prefer wooded areas with brush and hollow logs to den in. The opossum has a home range of approximately one-half mile. The raccoon has a variable home range of approximately one to two miles. These species are some of the most common nuisance animals to homeowners. If all of the natural habitat is removed, these species may invade under buildings, attics and chimneys in search of places to den. No suitable habitat will remain within the development portion of the subject site, and only marginal habitat will exist in the buffer.

Raccoon and opossum also forage for food in neighborhood garbage cans. Neither species is social, and the two species are often involved in fights with family pets. Clearing of the site may push some individuals into the surrounding natural area, but no significant regional impact is expected given their tolerance of humans and the remaining open space within the overall parcel and in the general area.

As previously indicated, the red fox may inhabit suburban areas and the tracks and den of one was identified on site. Development of the site would remove all available habitat; therefore, the fox will be displaced to other, more suitable habitat off-site.

The site is also utilized by the white-tailed deer. Deer are not expected on-site following construction, although they should remain in the local area, as suitable habitat exists. The white-tailed deer has home range sizes of up to three square miles. Local impacts on deer populations are not expected to be significant; however, available habitat would be further reduced.

Amphibians and Reptiles

As indicated in Section 3.3 of this DEIS, it is anticipated that the incidence of reptile and amphibian species on the subject site would be low in both density and diversity. Although most of the reptile species which are found in dry woodlands adjust well to suburban areas, they are often less mobile than bird and mammal species and would likely to suffer direct elimination during construction activities on-site. As very limited habitat would remain, individuals that are destroyed would not likely be replaced from populations in natural areas proximate to the site. Species found primarily in wetland habitats are not likely to be impacted by the proposed project, as they are not expected on site.

Terrestrial amphibians which may be present include only the toads. Frogs and salamanders are not likely to be present due to the absence of standing water. The eastern spadefoot toad and the Fowler's toad are also found in dry forested areas with sandy or loose soils. These species are aquatic breeders but travel long distances from the breeding site during the year. These species would not be expected to recolonize the site following development.

Several species of reptiles were identified as potentially present on-site. The eastern garter snake, eastern hognose snake, and the eastern milk snake may be present. Of these species, the eastern garter snake is the most tolerant of urbanization and would be expected in the landscaped, buffer and revegetated areas; however, even this species would be expected to suffer temporary impacts due to direct loss during construction. Populations will partially recover after completion of the project, but local impacts to snake species would be expected.

The only terrestrial turtle species possibly on site is the eastern box turtle. Like the snakes, this species is likely to suffer direct losses during construction and local impacts are expected. Regional impacts should be minimal, as habitat will remain in the surrounding area.

Rare Species/Habitat

Of the species listed as being likely on the site, the whip-poor-will, eastern box turtle, eastern spadefoot toad and eastern hognose snake are listed as special concern species. These species would be impacted by habitat loss, with no substantial mitigation available under the current project plans. Although there is documented concern about their welfare in New York State, these special concern species receive no additional legal protection under Environmental Conservation Law §11-0535.

No threatened or endangered species were observed on site. The New York Natural Heritage Program documented the presence of the eastern tiger salamander, an endangered species, as well as a rare ecological community (coastal plain pond shore) and a rare vascular plant (long-beaked beakrush) in the vicinity of the site. As indicated in Section 3.3 of this DEIS, the rare ecological community and vascular plant are not anticipated on-site.

Thus, no impacts to same would be expected. With regard to the tiger salamander, considering the separation from the documented breeding ponds, which are approximately 2,400 feet away, and the intensity of the surrounding development it is not anticipated that the tiger salamander would utilize the subject site. As such, there would be no impact to the tiger salamanders under the proposed action (see Section 3.3 of this DEIS for more information about the tiger salamander).

4.3.3 Proposed Planting Design

A *Landscape Plan* for the proposed project was prepared by Land Design Associates (see Appendix A). A number of the plants chosen are native to Long Island. Examples include *Amelanchier Canadensis* – Serviceberry; *Cornus florida* – Flowering Dogwood; *Fraxinus pensylvanica* – Ash and *Myrica pensylvanica* – Bayberry. The majority of the plantings are recommended for use in harsh environmental conditions. Most plantings have a high tolerance for drought, wind and salt residue from snow clearing in winter storms. All of the plants are strong in their ability to withstand commercial vehicular use environments. Many of the plants are used for naturalizing, while none of these species are recognized as invasive. As per information provided by Land Design Associates, two of the species proposed for use in the landscape design have been known to exhibit invasive tendencies when left in areas that are unmanaged or minimally managed (i.e., waterway restoration areas). These species are the Bayberry (*Berberis* sp.) and Privet (*Ligustrum* sp.). However, these species, as proposed in the Landscape Plan, would not exhibit invasive tendencies, as they would be planted within parking areas, and would be regularly maintained with pruning and cleaning.

The plants chosen are used in many low maintenance commercial planting designs. Some examples of these plants are *Gleditsia* – Honeylocust; *Spiraea* – Spirea; *Ilex crenata* – Japanese Holly; *Miscanthus* – Maiden Grass and *Liriope* – Lilyturf. The pre-planned design principle allows maintenance to be simplified. Maintenance crews can establish planned schedules with checklists of required tasks to be performed. Standard annual or bi-annual pruning should be performed with any landscape installation. Fertilization is only necessary in the first year. Fertilization can be accomplished organically, if it is required. Watering is required in the first year in order to allow plants to acclimate to their new environment. Watering is recommended in times of drought to prevent decline in the growth of the plantings.

From an environmental standpoint, many of the plants purify rainwater as it percolates through the soil. The roots of many of these plants collect and filter pollutants. Therefore, by adding these plants, water that travels through the root systems of these plantings will be naturally cleaned before returning into the soil. Water replenishment is even more important on Long Island since the public water comes from the underground aquifers that exist below Long Island bedrock.

Information provided by Land Design Associates indicates that, a number of the plant species chosen have significant wildlife and habitat value. Such plants include *Amelanchier Canagensis* – Serviceberry; *Cornus florida* – Flowering Dogwood; *Malus species* – Crabapple Species; *Myrica pensylvanica* – Bayberry, *Crataegus laevigata* – English Hawthorn, *Tilia tomentosa* – Silver Linden, and *Liriope* ‘Big Blue’ – Lily Turf, which provide food and in some upper canopies, suitable habitat.

Many of the plants have fruits and berries, which provide food for the wildlife species in the area. In addition, many of the proposed plants would provide beneficial habitat value to wildlife in adjacent areas, although they will not create a permanent habitat, as they will be maintained. It is possible that a number of permanent habitats may be established in the upper portions of some trees. There are a number of Long Island wildlife species that are adapted to the native vegetation. Therefore, by providing some native plant species in this planting area, the quality of the wildlife habitat in the areas neighboring the site can be maintained.

Some tree species included in the planting design provide extensive branching in their upper canopies, which can be utilized by nesting species. It is important to note that in maintained planting areas, such as is characteristic of the subject site, the ability for wildlife to utilize trees as suitable habitat is lessened in the lower portion of the trees. Thus, many species will nest in the upper portions of tree canopies. Species that may provide upper canopy habitat include *Tilia*, *Gleditsia*, *Fraxinus* and *Nyssa*.

Additionally, many of the proposed trees and shrubs contain flowers during the warm months. This would provide additional benefit to species such as bees, which would then attract birds to the subject site. Note that in locations where the attraction of bees may be problematic, the plants would be maintained to only provide foliage, not flowers.

Overall, the proposed action would result in the clearing of a large portion of the existing natural vegetation areas on the subject site. However, as previously explained, the isolated nature of the site provides limited ecological benefits, and natural vegetation on adjacent properties would provide similar communities and habitats to those present on the subject site. This would, to some degree, minimize potential impacts to wildlife species currently occupying the subject site. In addition, the proposed action involves the revegetation of portions of the subject site with landscape species. These areas would provide some habitat for species tolerant of human activity. Finally, in an effort to mitigate potential losses to vegetation and open space, the proposed action involves the preservation of farmland through the purchase of TDRs, as discussed in Sections 4.4 and 4.7 of this DEIS.

4.4 LAND USE, ZONING AND COMMUNITY CHARACTER

4.4.1 Land Use, Zoning and Community Character

The proposed project consists of the redevelopment of a former industrially-developed site into a destination retail center, in accordance with the existing DRC zoning of the subject property. The *Site Plan* prepared for the proposed project indicates 12 retail establishments within the subject property (see Appendix A). Two buildings situated at the front of the site would contain two restaurants. The remaining buildings would be retail facilities, with the exception of the Building A, located at the northwest corner of the subject site, which would contain a wholesale club. Based upon the proposed configuration, the retail center would not constitute strip-style development.

The subject property would consist of a gross floor area of 487,435 square feet of retail space with 12,174 square feet of gross restaurant space containing 318 seats, for a total of 499,609 square feet of gross floor area. The lot coverage would be 480,990 square feet or 26.58 percent, less than the 30 percent permitted with the transfer of development rights, but more than the 15 percent permitted without the transfer of development rights. In addition, the floor area ratio ("FAR") would be 0.276, significantly less than the 0.60 permitted in the DRC zoning district with the transfer of development rights, and also less than the 0.30 permitted without the transfer of development rights.

While the proposed development requires 2,265 parking spaces, the *Site Plan* includes 2,424 parking stalls, of which 259 would be landbanked. Of the total, 48 would be handicap. There would be nine loading spaces. Of the 2,424 paved parking stalls, 636 spaces would be full-size (10.0 feet-by-20.0 feet), 1,621 spaces would be 9.5 feet-by-19.0 feet, and 167 spaces would be 9.0 feet-by-18.0 feet. Therefore, the applicant is requesting a relaxation of the parking stall size standard, as will be discussed below.

Based upon the *Site Plan* prepared by E.S. Kalogeras, dated October 23, 2007, the following is analysis of the zoning compliance of the proposed plan with the requirements of the DRC Zoning District.

Table 23 – DRC Zoning Use District: Bulk and Dimensional Regulations

PARAMETER	REQUIRED/PERMITTED	PROPOSED
Minimum Lot Area	40,000 sf	1,809,900.46 s.f. (41.55 acres)
Minimum Lot Width at Front Street	200 feet	463± feet
Maximum Building Lot Coverage (with Sewer and no TDRs)	15%	26.52%**
Maximum Building Lot Coverage (with TDRs)	30%	26.57%
Maximum Impervious Surface	75%	87.82%***
Maximum Height of Buildings	35 feet*	≤ 50 feet
Maximum FAR (with Sewer and no TDRs)	0.20	0.276**
Maximum FAR (with TDRs)	0.60	0.276
Contiguous Landscaping ²	20%	12.2%***
Interior Parking Landscaping	10%	6.5%***

*Preservation credits may be used to increase the height to 50 feet.

**Requires the purchase of 92 TDRs.

***Requires the relaxation of dimensional standards.

Implementation of the proposed project would require the relaxation of several of the zoning requirements (see Table 22) and the purchase of 92 TDRs, as discussed below.

The various yard setback requirements and the proposed project's consistency therewith are shown on the *Site Plan* in the *DRC Zoning Setback Requirements* chart. No variances for yard setbacks are required.

² This value includes both landscape and natural species.

Restaurants are not a permitted principal use within the DRC zoning district. However, in the prior application involving this site, restaurants were permitted by the Town Board. The Town previously indicated that their size and function were subordinate to the primary use of the property. Therefore, unless the Town permits them as an accessory use, the applicant would seek a use variance for same. Two alternatives involving all retail uses (no restaurants) are included in Section 7.0 of this DEIS, as requested by the Town in its comment letter dated September 26, 2007 (see Appendix R).

In a DRC Zone:

“Preservation credits may be used to increase the development yield associated with site plan applications made to the Town Board pursuant to Article XXVI of the Riverhead Zoning Ordinance. In its review and approval of such site plan applications, the Town Board may increase the allowable development yield at a rate of an additional 1,500 square feet of floor area per preservation credit redeemed to a maximum 0.3 floor area ratio.” (Note: The Planning Board is now the entity handling site plan approval with TDR credits.)

The intent of the Town’s TDR program is:

“to implement the land use policies set forth in the Town of Riverhead Comprehensive Plan with specific reference to protection of the lands located within the Agricultural Protection Zone (APZ), the preservation of agricultural lands, the support of the existing agricultural industry, and the necessary and appropriate economic development of the community.”

In addition, regarding TDRs, according to §108-332. *Commercial site plan* of the Riverhead Zoning Code, “the agency responsible for commercial site plan approval shall be the administrator for application of preservation certificates on commercial site plan application as follows: (1) In the event that preservation credit certificates are to be applied to commercial development as set forth in this chapter, the agency responsible for commercial site plan approval shall have the authority to vary the development standards set forth in this chapter; including but not limited to parking, floor area ratio and lot coverage requirements. The agency responsible for commercial site plan approval shall utilize the standards set forth in § 267-b of the Town Law of the State of New York in determining whether to vary development standards as set forth herein.” In this case, the agency would be the Planning Board.

According to E.S. Kalogeras, P.E., Consulting Engineer, the floor allowed for this development without TDRs is 361,980.09 square feet (1,809,900 square feet of site area times 0.2). One TDR is needed for each 1,500 square feet of proposed gross floor area exceeding the maximum of 361,980.09 square feet. Given the fact that the proposed floor area exceeds this amount, it is estimated that 92 TDRs would be needed for this project. According to Mr. Richard Hanley, the Director of the Riverhead Town Planning Department, each TDR preserves 43,560 square feet (one acre) of farmland.

Therefore, 92 TDRs would result in the preservation of an estimated 92 acres of farmland within the Town of Riverhead. These findings are summarized in the following computations.

Table 24 - Computation of Required TDRs for the Shops at Riverhead

Site Acreage	1,809,900.46 SF
Maximum Footprint Allowed Without TDRs	361,980.09 SF
Excess Square Feet in Proposed Project	137,629 SF
Square Feet Equivalent of One TDR	1,500
Estimated Number of TDRs Required For Proposed Footprint	(91.75) 92
Estimated Number of Acres of Farmland Preserved	(91.75) 92

Source: Consultant’s computations based on conversations with Mr. Richard Hanley.

As previously noted, the TDR zoning ordinance allows for the relaxation of dimensional standards. The proposed site plan requires relaxation of the standards for contiguous landscaping, impervious surface, interior parking landscaping and parking stall dimension. As discussed in Section 7.2 of this DEIS, an alternative plan has been prepared that would not require relaxation of dimensional standards. That plan required 30 TDR credits in order to be constructed. The proposed site plan requires 92 TDR credits, or 62 additional credits over the plan that does not require relaxation of standards. The relaxation of dimensional standards requested in the proposed plan will allow an additional 62 acres of agricultural land to be preserved through the purchase of development rights.

The additional density allowed on the site by relaxing the standards, as described above, would allow for the preservation of an additional 62 acres of land in the TDR sending district, where the *Town of Riverhead Comprehensive Plan* has identified a priority for maintaining farmland and open space. In addition, while the proposed plan will not meet the requirements for contiguous landscape area on the site, this property is situated in an area identified in the *Town of Riverhead Comprehensive Plan* for increased density (due to the infrastructure that is already in place and the goal to concentrate development in areas already developed to help prevent sprawl). Furthermore, the additional density that would result from the relaxation of dimensional standards will result in a higher real estate property value for tax purposes and higher increased sales taxes and jobs, as described in Section 4.7.5 of this DEIS.

Benefits associated with the preservation of additional land, via the purchase of TDRs, include the protection of groundwater resources, as the sending areas are most likely not sewered and would likely require the installation and use of approximately 62 separate septic systems. In addition, the Riverhead CSD would receive substantial property taxes without an increase in the number of school children.

In addition to the purchase of TDRs, the following are the dimensional standards that require relaxation:

- Impervious Surface: The proposed *Site Plan* contains 1,589,604 square feet of impervious surface where a maximum of 1,357,425 square feet are allowed without relaxing the standards. This is an additional 232,179 square feet of impervious surface over what is allowed.
- Contiguous Landscape Area: The proposed *Site Plan* has 220,295 square feet of contiguous landscape area (12.2 percent) where 361,980 square feet of contiguous landscape area (20 percent) is required. Accordingly, the proposed plan has 141,685 square feet less contiguous landscape area than required.
- Interior Landscaping in Parking Lot:

The proposal includes 41,534 square feet (6.5 percent) of interior landscaping in the parking lots, whereas 63,500 square feet (10 percent) is required. Therefore, the proposal contains 21,966 square feet less interior landscaping than required.

- Parking Stall Size:

As previously mentioned, 1,788 of the proposed 2,424 parking spaces would require the relaxation of parking stall size standards. The breakdown of parking stalls and their sizes is included on the *Site Plan* and listed below:

<u>Parking Stall Size (in feet)</u>	<u>Number Provided</u>
10.0 x 20.0	636
9.5 x 19.0	1,621
9.0 x 18.0	167

The project proposes to utilize the TDR Credit program to a greater extent than any of the three previous projects that utilized credits. The Town Code and the Comprehensive Plan encourage increased density in this area with the use of development credits transferring density from agricultural land, located in the Development Rights sending zones. The current zoning ordinance allows for 15 percent Building Lot Coverage which can be increased to 30 percent with the use of Development Credits. The previous Industrial A Zoning Use district of the site allowed a Building Lot Coverage of 30 percent. The plan has a building lot coverage of 26.52 percent which is below the maximum currently and previously allowed. The current zoning allows a FAR of 20 percent which can be increased to 60 percent with the use of development credits. The FAR of the plan is 27.6 percent, which is less than half of the maximum allowed with development credits.

The proposed layout requires dimensional relief for parking stall dimension, contiguous landscaping, parking lot landscaping and impervious surface all of which were granted to Wal-Mart in its recent approval. The following chart compares the dimensional differences between the proposed plan and the approved Wal-Mart plan.

Table 25 – Dimensional Comparison Between Wal-Mart and Proposed Plan

Parameter	Wal-Mart	Shops at Riverhead
Site Acreage (SF)	903,588	1,809,900
Building Footprint (SF)	196,547	480,609
Building Coverage (%)	21.75	26.55
Floor Area (SF)	196,547	499,609
FAR (%)	21.75	27.60
Impervious Surface (SF)	705,856	1,589,604
Impervious Surface (%)	78.12	87.83
Total Parking Stalls	870	2,424
Contiguous Landscaping (SF)	93,825	220,295
Contiguous Landscaping (%)	10.38	12.17
Parking Lot Landscaping (SF)	37,168	41,534
Parking Lot Landscaping (%)	8.40	6.5
TDRs	40.67	92

The mass of the proposed project is not out of scale for the area. The project has a greater percentage of contiguous landscaping than the approved Wal-Mart project located west of Kroemer Avenue on CR 58. The adjacent industrial property occupied by ADCHEM has a greater building lot coverage ratio than is proposed, and buildings that are located close to the property line. The buildings proposed along the frontage of CR 58 have a similar setback and scale as other adjacent buildings along the frontage, and are similar to the automotive dealerships, hotel and electronic store located across CR 58 from the property, as well as buildings located on the north side of CR58, including the adjacent automotive dealership and the Applebee's restaurant, located on the east side of Kroemer Avenue.

As part of the proposed action, a building occupied by a wholesale club is proposed to be located approximately 100 feet from the rear property line, approximately twice the required 50-foot rear building setback. The loading docks are to be located approximately 360 feet from the rear property line on the opposite side of the building. The main entrance to the store is proposed on the opposite side of the building facing the front parking field. Accordingly, most of the activity will be concentrated away from the rear property line. The next closest building to the rear property line, located at the end of the junior anchor buildings, is proposed at approximately 370 feet from the property line and has loading docks facing opposite the rear property line. In order to provide additional screening and security, a fence is proposed along the rear property line. Existing tree cover in the rear buffer (and the adjacent landbanked parking) is proposed to be maintained to the greatest extent possible with additional planting between the trees to provide additional screening. Some existing trees may require removal (i.e., next to the pavement) to allow for grading. However, additional evergreen landscaping will be planted along the cleared portions of the rear buffer.

A mobile home park is located beyond the eastern property line of the subject parcel separated from the site by an approximately 50-foot-wide parcel owned by the Foxwood Corporation. The mobile home park is situated within the same zoning use district as the subject property. Buildings near the mobile home park are to be located a minimum of 40.7 feet from the property line, where a 25-foot-wide setback is required. In addition, the 50-foot-wide parcel located between the subject parcel and the mobile home park, in which the subject parcel has an access easement, is proposed to remain wooded to provide an additional buffer. This area is not included in the calculation of the contiguous landscaping area of the site. The minimum distance proposed between buildings and the mobile home park is 90.7 feet. This distance, along with the maintenance of wooded vegetation in this area, provides significant setbacks and screening.

4.4.1 Relevant Comprehensive Plans

Several sections of the *Town of Riverhead Comprehensive Plan* focus on non-residential development within the Town. Chapter 2 – “Land Use Element,” indicates that in the future, among the characteristics Riverhead should possess is a “a thriving commercial corridor along Route 58, with reduced traffic congestion and an attractive visual quality.” In addition, Chapter 6 – “Business District Element,” suggests “Route 58 should absorb most of the demand for regional and destination retail uses and thus should continue to be a mainstay for generating jobs and tax revenue.” Finally, Chapter 7 – “Economic Development Element” indicates “Riverhead should continue to pursue a diverse economic base by promoting office and industrial development, agriculture, retail development, and entrepreneurial and small-business activity in appropriate locations.”

According to Page 2-12 of the “Land Use Element” of the *Comprehensive Plan*, the purposes of the Destination Retail Center district is “to provide a location for large retail centers along Route 58 that attract customers from the East End, Long Island, and beyond, while linking development to open space protection along the Route 58 corridor and in Agricultural zones.” The preferred commercial land uses are outlet centers, shopping center of over 100,000 square feet in size, cinemas, hotels and new automobile dealerships.

The proposed development of the subject site with a retail center would be in keeping with the character of uses along Route 58, which is predominantly commercial. The subject property is situated on the Route 58 commercial corridor, approximately one-half mile east of the terminus of the Long Island Expressway. Page 6-6 of the *Comprehensive Plan* states that “[c]ommunity members made clear that they would prefer to concentrate future commercial strip development along Route 58, since it has already been transformed into a commercial corridor...” Moreover, the adjacent properties to the east and west, as well as those to the south, of the site along Route 58 are predominantly commercial in nature. As such, there would be no significant adverse impacts to same from the proposed development.

Page 6-6 of the “Business District Element” of the *Comprehensive Plan* goes on to say that, “yet as successful as Route 58 has been from a *commercial* perspective, it suffers from traffic congestion and poor aesthetics, and these issues need to be addressed before additional development is allowed there.” Focus groups did not like the “strip” aesthetics of the corridor, including a collection of “prototype buildings” of nationwide retail stores, vast areas of concrete parking lots containing little vegetation and garish free-standing signs. “Design improvements to Route 58 make sense not only from an aesthetic point of view, but also from an economic standpoint; they can help increase consumer interest and bolster property values.”

Overall, the proposed project conforms to the *Comprehensive Plan* by providing a destination retail center, the use for which the site is zoned. As noted earlier, the concept of destination retail for the Route 58 corridor was thoroughly examined in the *Comprehensive Plan* and implemented through the changing of the zoning in the area on the Town’s own motion. As the proposal applies the destination retail concept it comports with the *Comprehensive Plan*.

Therefore, the proposed action is not expected to have a significant adverse impact on land use, zoning and community character.

4.5 TRANSPORTATION

As indicated in Section 3.5 of this DEIS, Eschbacher VHB performed a *Traffic Impact Study* for the proposed project. The complete report is contained in Appendix H of this DEIS. Relevant excerpts from the report regarding the potential impacts are contained below. It should be noted that the *Traffic Impact Study* evaluated a 530,420-square-foot retail center. Since the initial analysis, the proposed square footage has been revised to 519,741 square feet (for purposes of the traffic analysis). This reduction means slightly fewer vehicle trips can be expected than were analyzed, making this analysis conservative in that the expected Build scenario intersection delays are overstated by a small amount.

4.5.1 No Build Conditions

The analysis of future conditions, with and without the proposed project (“Build” and “No Build” conditions, respectively), was performed to evaluate the effect of the proposed project on future traffic in the area. The No Build condition presents the expected future traffic conditions that can be expected to occur, whether the proposed retail complex is built or not. The No Build condition serves as a comparison to the Build condition, which presents expected future traffic conditions resulting from both project and non-project generated traffic.

General Background Growth

Based upon the expected time necessary for project completion, three years into the future (year 2009) was selected as an appropriate analysis period. An annual growth rate of two percent per year was applied to the existing turning movement counts at the study intersections to account for increases in general population and background growth not related to the proposed project. The two percent background growth rate used in this analysis is slightly greater than the 1.67 percent estimate made by the Town of Riverhead for the *Long Island Transportation Plan*. (The LITP is the primary long term planning model used by the New York State Department of Transportation for Long Island.) The resulting three-year background increase in traffic at the study intersections (two percent of existing volumes) for the AM, PM, and Saturday peak hours are shown in Figures 5, 6 and 7 in Appendix H.

Other Planned Projects

A second source of future traffic growth under No Build conditions is other specific planned developments within the study area. Six other projects were identified within the study area.

These projects are:

- Browning Hotel Properties, Inc. is currently constructing two hotels with a total of 254 rooms on the north side of CR 58, on the west side of the NYSDOT facility;
- Headriver LLC is seeking approval to construct a Wal-Mart, three restaurants, and 27,000 SF of retail space on the north side of CR 58, on the east side of the NYSDOT facility;
- 14,500 SF of retail space proposed for the southwest corner of CR 58 and Kroemer Avenue;
- A Stop & Shop supermarket on the southwest corner of CR 58 and Mill Road;
- A PC Richard & Son store on the south side of CR 58, west of Gatewood/Commerce Drive; and
- A 137,000 SF retail building on the northwest corner of NY 25 and Tanger Mall Drive.

Figures 8, 9 and 10 in Appendix H show the combined traffic volumes that would be expected to come from the six other projects identified above. The expected traffic volumes for each of the other projects can be found in Attachment 6 of Appendix H of this DEIS.

To obtain the expected No Build traffic volumes, the three-year background growth traffic volumes and the other planned development traffic volumes are added to the existing traffic volumes at the study intersections. The resulting No Build traffic volumes are presented in Figures 11, 12, and 13 of Appendix H. For comparison purposes, the LOS analysis results for the No Build condition are presented in Tables 3, 4, and 5 of Appendix H in the discussion of the Build condition.

4.5.2 Build Conditions

Trip Generation

The additional traffic to be generated by this project was calculated using *Trip Generation* (2003, Seventh Edition) published by the Institute of Transportation Engineers (“ITE”). This widely utilized reference source contains data for Retail Space (Land Use Code #820) and Discount Club (Land Use Code #861). Table 26 summarizes the expected site-generated trip generation data for The Shops at Riverhead for the weekday AM and PM peak and Saturday peak hours. The complete trip generation calculations are presented in Attachment 7 of Appendix H.

Table 26 – Site-Generated Trips

Peak Hour	Total Trips	Entering Trips		Exiting Trips	
		Percent	Volume	Percent	Volume
Weekday AM	477	63%	299	37%	178
Weekday PM	2,063	49%	1,003	51%	1,060
Saturday	2,915	51%	1,486	49%	1,429

Trip Distribution

To aid in determining the geographic distribution of the trips generated by the proposed project, turning movement counts were performed at the four driveways of the Riverhead Centre retail complex on the northeast corner of Mill Road and CR 58. Since the proposed Shops at Riverhead can be expected to have a trip distribution pattern similar to that at Riverhead Centre, the existing geographic trip distribution patterns entering and exiting Riverhead Centre are a good predictor of what to expect at the Shops at Riverhead.

The count data show that the geographic distribution of traffic traveling to and from Riverhead Centre is roughly 40 percent from and to the east, 30 percent from and to the west, 15 percent from and to the north, and 15 percent from and to the south. The turning movement counts at Riverhead Centre are presented in Attachment 8 of Appendix H of this DEIS.

The trip distribution patterns at the study intersections are shown in Figures 14, 15, and 16 of Appendix H. No driveway counts were performed during the AM peak, but since the PM peak and Saturday peak hour patterns were similar, the same pattern was also used for the AM peak hour distribution. The expected site generated trips for The Shops at Riverhead (shown in Table 26) were then distributed according to the travel patterns determined from the driveway counts at Riverhead Centre. The resulting site generated traffic volumes at the study intersections are shown in Figures 17, 18, and 19 in Appendix H.

Pass-By Trips

Not every project-generated trip will result in the addition of an additional vehicle on area roads. This is because some of the vehicles entering the site will come from the stream of vehicles currently using CR 58. Project generated trips which are drawn from existing traffic are known as “Pass-By” trips, since they are drawn from the flow of vehicles currently passing by the project site while traveling to and from other destinations.

The ITE has compiled and published data from pass-by studies in *Trip Generation*. Based on that data,³ credits for the expected number of pass-by trips at The Shops at Riverhead were calculated. The resulting pass-by volumes are shown in Figures 20, 21, and 22. The net project generated traffic volumes (equal to the unadjusted project generated volumes in Figures 17 through 19 plus the pass-by credits in Figures 20 through 22) can be seen in Figures 23, 24, and 25 (see Appendix H of this DEIS).

³ The pass-by percentages used are 35% for the AM and PM peaks and 30% for the Saturday peak.

Build Condition Traffic Volumes

The expected net project generated traffic volumes calculated above were then combined with the No Build volumes at the study intersections to obtain the Build condition volumes. Figures 26, 27, and 28 in Appendix H show these expected Build condition traffic volumes for the weekday AM, PM, and Saturday peak hours.

Level of Service Analysis Results

Table 27, Table 28 and Table 29 present the *Synchro* level of service analysis results for the five study intersections for the three analyzed traffic scenarios (Existing, No Build, and Build). Table 27 summarizes the results for the AM peak hour, Table 28 presents a summary of the PM peak hour, and Table 29 summarizes the Saturday peak hour results. The detailed intersection analysis summary sheets from *Synchro* can be found in Attachment 5 of Appendix H.

No Build Scenario Compared to Build Scenario

The No Build scenario represents the expected traffic conditions at the study intersections in the year 2009 *without* the proposed Shops at Riverhead. The Build scenario adds the expected traffic from The Shops at Riverhead to the No Build traffic. Also included in the Build scenario are roadway improvements proposed to be built as part of the development of the Shops at Riverhead, as discussed below. Consequently, the expected impact of the proposed project can best be determined by comparing the Build level of service analysis results to the No Build results.

Proposed Roadway Improvements

CR 58 currently has two lanes in each direction in the vicinity of the proposed project site, except for the eastbound direction from Kroemer Avenue to Mill Road, which only has one lane. This one lane eastbound stretch is presently becoming a bottleneck, and will only become more so, with or without the proposed project, as the No Build analysis confirms. To mitigate this condition, the developer proposes to contribute to the construction cost of a second eastbound lane from Kroemer Avenue to Mill Road. This new second eastbound lane would be approximately one-half mile in length. In conjunction with this work, a second eastbound left turn lane will be added at the Mill Road intersection.

At the intersection of the site access drive with CR 58, a new signalized intersection will be constructed. A westbound right turn lane leading into the site will also be constructed along the site frontage on CR 58. These roadway improvements have been included in the Build analysis.

Future Traffic Conditions

All study intersections will experience significant increases in delay when comparing Existing to No Build conditions in all three time periods (AM peak, PM peak, and Saturday peak). At the Kroemer Avenue and Mill Road/Pulaski Street intersections, the overall average delays will typically increase by fifteen to twenty seconds during the PM peak. The increase in the Saturday peak delay at Tanger Mall Drive will be in a similar range, but at Kroemer Avenue and Mill Road the average delay is projected to increase by approximately thirty-five seconds, with the overall LOS changing from A to D at Kroemer Avenue and from C to E at Mill Road. These No Build increases in delay will result from overall growth in the general area plus the impacts from the six specific other projects in the immediate study area, and can be expected to occur with or without construction of the proposed Shops at Riverhead.

At the currently unsignalized intersection of Commerce Drive/Gatewood, it will become very difficult for vehicles coming from the side streets to enter onto CR 58. However, this intersection will be signalized in the near future as part of the PC Richard project, thus allowing side street vehicles to enter onto CR 58 without excessive delay. This signalization has been included in the No Build analysis.

Except at Mill Road, the intersection delays along CR 58 can be expected to *improve* when comparing the Build to the No Build condition. The construction of the second eastbound lane on CR 58 from Kroemer Avenue to Mill Road will eliminate the present growing bottleneck on CR 58 and significantly mitigate the impact of both the other planned developments and the proposed Shops at Riverhead on CR 58. Coordination of the traffic signals also contributes to the reduction in intersection delays.

As discussed earlier, the Mill Road intersection will experience significant increases in delay when comparing Existing to No Build conditions. The vehicle trips generated by the proposed Shops at Riverhead in the Build condition will add to the No Build delays at Mill Road caused by the overall background growth and the impact of the other six specific projects included in the No Build and Build analysis.

Possible long term improvements to the Mill Road intersection include realigning Pulaski Street so that instead of ending at the CR 58/Mill Road intersection, it would instead intersect CR 58 opposite the existing traffic signal at the entrance to Riverhead Centre. This would primarily improve conditions on the northbound approach of the Mill Road/CR 58 intersection, but all approaches would benefit collaterally as well. This project is still in the planning stages.

Suffolk County has proposed redesign of the CR 58/Mill Road intersection as part of an ongoing Corridor Study of CR 58. (This corridor study is in addition to the Early Improvement Project on CR 58 recently announced by the County Executive.) Among the improvements would be acquisition of additional right-of-way and added capacity on both the northbound and southbound approaches. These improvements, combined with the relocation of the west end of Pulaski Street, would combine to noticeably improve future traffic conditions at the CR 58/Mill Road intersection.

Table 27 – LOS Comparison: AM Peak Hour

Intersection	Approach	Lane Group	Existing		No Build		Build		
			Delay	LOS	Delay	LOS	Delay	LOS	
CR 58 & Tanger Mall Drive	Eastbound	L			4.1	A	3.2	A	
		T	0.8	A	8.7	B	9.1	A	
		R	0.1	A	0.1	A	0.1	A	
		<i>Approach</i>	0.7	A	8.1	A	8.6	A	
	Westbound	L	1.8	A	7.0	A	19.2	B	
		T	0.5	A	5.1	A	4.5	A	
		R			3.0	A	3.3	A	
		<i>Approach</i>	0.6	A	5.2	A	5.6	A	
	Northbound	L	15.9	B	33.2	C	44.7	D	
		LT			32.0	C	43.0	D	
		R	0.0	A	0.0	A	0.0	A	
		<i>Approach</i>	2.9	A	6.5	A	8.8	A	
	Southbound	L			30.4	C	46.3	D	
		T			30.0	C	42.0	D	
		R			15.5	B	19.7	B	
<i>Approach</i>				24.0	C	34.8	C		
Overall			0.7	A	7.3	A	8.0	A	
CR 58 & Kroemer Avenue	Eastbound	L	2.9	A	7.1	A	3.0	A	
		TR	3.2	A	12.3	B	10.8	B	
		<i>Approach</i>	3.2	A	12.0	B	10.3	B	
	Westbound	L	4.3	A	9.0	A	16.7	B	
		T	2.6	A	10.7	B	2.5	A	
		<i>Approach</i>	2.6	A	9.8	A	3.1	A	
	Northbound	L	16.4	B	27.9	C	30.1	C	
		TR	9.3	A	21.2	C	22.7	C	
		<i>Approach</i>	10.7	B	21.9	C	23.5	C	
	Southbound	L	16.4	B	31.7	C	37.1	D	
		T	15.5	B	27.7	C	36.0	D	
		<i>Approach</i>	11.5	B	9.4	A	11.7	B	
	Overall			3.3	A	12.7	B	9.6	A
	CR 58 & Mill Road	Eastbound	L	10.1	B	11.2	B	47.6	D
			T	13.2	B	16.4	B	17.9	B
R			6.2	A	7.9	A	12.1	B	
<i>Approach</i>			11.9	B	14.5	B	21.2	C	
Westbound		L	9.8	A	10.7	B	10.1	B	
		T	17.3	B	21.5	C	20.4	C	
		<i>Approach</i>	0.0	A	0.0	A	0.0	A	
Northbound		<i>Approach</i>	16.5	B	20.2	C	19.3	B	
		L	16.9	B	21.7	C	31.5	C	
		T	22.5	C	28.8	C	21.1	C	
		R	0.0	A	0.0	A	21.1	C	
Southbound		<i>Approach</i>	16.2	B	19.9	B	26.6	C	
		L	17.4	B	20.6	C	25.6	C	
		T	26.8	C	34.6	C	48.0	D	
		R	0.1	A	0.2	A	0.2	A	
Overall			13.8	B	17.0	B	20.4	C	

**Table 27 - LOS Comparison
AM Peak Hour (Continued)**

Intersection	Approach	Movement	Existing		No Build		Build	
			Delay	LOS	Delay	LOS	Delay	LOS
CR 58 & Proposed Site Access	Eastbound	L					10.0	B
		T					12.7	B
		<i>Approach</i>					12.5	B
	Westbound	T					15.7	B
		R					4.3	A
		<i>Approach</i>					13.5	B
	Southbound	L					28.8	C
		R					8.8	A
		<i>Approach</i>					22.8	C
	Overall			N/A	N/A	N/A	N/A	13.6
CR 58 & Commerce Drive/Gatewood	Eastbound	L	6.5	A	1.8	A	1.4	A
		T			12.5	B	0.8	A
		R			0.5	A	0.0	A
		<i>Approach</i>			12.0	B	0.8	A
	Westbound	L	10.0	B	3.2	A	1.3	A
		TR			1.6	A	1.0	A
		<i>Approach</i>			1.6	A	1.0	A
	Northbound	L	37.6	E			40.5	D
		T	37.0	E			19.6	B
		R					19.6	B
		<i>Approach</i>			22.7	C	22.6	C
	Southbound	L	52.5	F				
		T	-	-				
		R						
		<i>Approach</i>			43.0	D	30.2	C
Overall			N/A	N/A	8.7	A	1.8	A
NY 25 & Kroemer Avenue	Eastbound	L	2.4	A				
		LTR			5.4	A	5.4	A
	Westbound	L	4.3	A				
		LT			4.3	A	4.3	A
		R			1.4	A	1.4	A
		<i>Approach</i>			3.6	A	3.6	A
	Northbound	L	8.5	A				
		T	10.8	B				
		LTR			10.3	B	10.3	B
	Southbound	L	9.9	A				
		T	10.7	B				
LTR				19.2	B	19.0	D	
Overall			N/A	N/A	6.7	A	6.7	A

Note: Delays for the existing condition unsignalized intersections at CR 58 & Commerce Drive/Gatewood and at NY 25 & Kroemer Avenue were taken from *SimTraffic*.

Table 28 – LOS Comparison: PM Peak Hour

Intersection	Approach	Lane Group	Existing		No Build		Build	
			Delay	LOS	Delay	LOS	Delay	LOS
CR 58 & Tanger Mall Drive	Eastbound	L			9.0	A	19.6	B
		T	13.6	B	17.8	B	28.2	C
		R	0.1	A	0.1	A	0.1	A
		<i>Approach</i>	<i>12.6</i>	<i>B</i>	<i>16.3</i>	<i>B</i>	<i>26.3</i>	<i>C</i>
	Westbound	L	8.8	A	34.9	C	16.6	B
		T	5.8	A	13.3	B	2.5	A
		R			2.9	A	0.1	A
		<i>Approach</i>	<i>6.3</i>	<i>A</i>	<i>16.1</i>	<i>B</i>	<i>4.3</i>	<i>A</i>
	Northbound	L	21.6	C	51.3	D	60.2	E
		LT			50.9	D	60.1	E
		R	0.2	A	0.3	A	0.3	A
		<i>Approach</i>	<i>10.5</i>	<i>B</i>	<i>25.2</i>	<i>C</i>	<i>29.7</i>	<i>C</i>
	Southbound	L			38.5	D	59.9	E
		T			29.0	C	43.0	D
		R			14.2	B	18.6	B
<i>Approach</i>				<i>27.7</i>	<i>C</i>	<i>41.6</i>	<i>D</i>	
Overall			9.3	A	18.0	B	17.6	B
CR 58 & Kroemer Avenue	Eastbound	L	8.2	A	27.4	C	25.4	C
		TR	7.4	A	22.6	C	8.1	A
		<i>Approach</i>	<i>7.4</i>	<i>A</i>	<i>22.9</i>	<i>C</i>	<i>9.0</i>	<i>A</i>
	Westbound	L	3.5	A	47.0	D	47.7	D
		T	3.7	A	23.5	C	5.2	A
		R	1.8	A	3.3	A	0.2	A
		<i>Approach</i>	<i>3.6</i>	<i>A</i>	<i>24.0</i>	<i>C</i>	<i>8.4</i>	<i>A</i>
	Northbound	L	22.2	C	25.7	C	27.5	C
		TR	11.2	B	44.3	D	45.8	D
		<i>Approach</i>	<i>14.2</i>	<i>B</i>	<i>42.2</i>	<i>D</i>	<i>43.7</i>	<i>D</i>
	Southbound	L	23.3	C	44.3	D	54.7	D
		T	20.7	C	31.0	C	32.3	C
		R	9.8	A	7.7	A	8.0	A
		<i>Approach</i>	<i>16.2</i>	<i>B</i>	<i>30.7</i>	<i>C</i>	<i>36.3</i>	<i>C</i>
	Overall			6.0	A	25.7	C	13.9
CR 58 & Mill Road	Eastbound	L	18.0	B	89.8	F	147.8	F
		T	14.9	B	19.1	B	18.6	B
		R	4.8	A	7.7	A	9.2	A
		<i>Approach</i>	<i>14.2</i>	<i>B</i>	<i>33.5</i>	<i>C</i>	<i>45.8</i>	<i>D</i>
	Westbound	L	9.3	A	13.5	B	31.8	C
		T	25.0	C	32.7	C	66.3	E
		R	0.0	A	0.0	A	0.0	A
		<i>Approach</i>	<i>23.0</i>	<i>C</i>	<i>29.9</i>	<i>C</i>	<i>62.0</i>	<i>E</i>
	Northbound	L	32.6	C	99.5	F	112.2	F
		T	38.8	D	45.8	D	29.6	C
		R	0.0	A	0.1	A	29.6	C
		<i>Approach</i>	<i>31.2</i>	<i>C</i>	<i>62.4</i>	<i>E</i>	<i>74.4</i>	<i>E</i>
	Southbound	L	26.0	C	29.7	C	28.8	C
		T	39.1	D	47.6	D	161.7	F
		R	0.2	A	0.3	A	0.4	A
<i>Approach</i>		<i>15.6</i>	<i>B</i>	<i>18.2</i>	<i>B</i>	<i>46.9</i>	<i>C</i>	
Overall			20.2		34.7	C	55.5	E

**Table 28 - LOS Comparison
PM Peak Hour (Continued)**

Intersection	Approach	Movement	Existing		No Build		Build	
			Delay	LOS	Delay	LOS	Delay	LOS
CR 58 & Proposed Site Access	Eastbound	L					43.5	D
		T					20.0	C
		<i>Approach</i>					24.0	C
	Westbound	T					29.3	C
		R					3.4	A
		<i>Approach</i>					20.8	C
	Southbound	L					50.8	D
		R					9.5	A
		<i>Approach</i>					38.4	C
	Overall			N/A	N/A	N/A	N/A	25.7
CR 58 & Commerce Drive/Gatewood	Eastbound	L	9.2	A	3.7	A	7.7	A
		T			30.1	C	3.9	A
		R			0.6	A	0.4	A
		<i>Approach</i>			29.4	C	3.9	A
	Westbound	L	12.0	B	68.9	E	46.6	C
		TR			3.9	A	5.6	A
		<i>Approach</i>			6.1	A	6.7	A
	Northbound	L	40.2	E			58.6	
		T	25.2	D			20.3	
		R					20.3	
		<i>Approach</i>			119.6	F	48.6	D
	Southbound	L	91.4	F				
		T	59.6	F				
		R						
		<i>Approach</i>			63.9	E	47.6	D
Overall			N/A	N/A	21.4	C	7.4	A
NY 25 & Kroemer Avenue	Eastbound	L	4.7	A				
		LTR			14.5	B	17.0	B
	Westbound	L	6.0	A				
		LT			10.1	B	10.1	B
		R			2.4	A	2.7	A
		<i>Approach</i>			9.3	A	9.3	A
	Northbound	L	12.6	B				
		T	18.4	C				
		LTR			10.1	B	11.4	B
	Southbound	L	18.0	C				
		T	16.2	C				
LTR				22.2	C	26.2	C	
Overall			N/A	N/A	13.2	B	14.8	B

Note: Delays for the existing condition unsignalized intersections at CR 58 & Commerce Drive/Gatewood and at NY 25 & Kroemer Avenue were taken from *SimTraffic*.

Table 29 – LOS Comparison: Saturday Peak Hour

Intersection	Approach	Lane Group	Existing		No Build		Build	
			Delay	LOS	Delay	LOS	Delay	LOS
CR 58 & Tanger Mall Drive	Eastbound	L			15.6	B	11.0	B
		T	18.2	B	42.7	D	32.0	C
		R	0.1	A	0.1	A	0.1	A
		<i>Approach</i>	15.6	B	36.4	D	28.2	C
	Westbound	L	12.5	B	43.5	D	60.9	E
		T	6.0	A	22.7	C	15.2	B
		R			4.2	A	2.5	A
		<i>Approach</i>	7.7	A	25.9	C	23.0	C
	Northbound	L	24.9	C	48.6	D	88.5	F
		LT			48.6	D	88.4	F
		R	0.3	A	0.3	A	0.3	A
		<i>Approach</i>	14.3	B	28.5	C	51.7	D
	Southbound	L			44.6	D	73.7	E
		T			35.0	C	39.0	D
		R			13.4	B	18.3	B
<i>Approach</i>				30.9	C	49.3	D	
Overall			12.0	B	30.2	C	31.2	C
CR 58 & Kroemer Avenue	Eastbound	L	8.0	A	53.5	D	44.3	D
		TR	7.4	A	53.9	D	47.0	D
		<i>Approach</i>	7.5	A	53.9	D	46.8	D
	Westbound	L	3.9	A	59.3	D	63.9	E
		T	3.3	A	28.3	C	5.9	A
		<i>Approach</i>	3.3	A	29.4	C	11.6	B
	Northbound	L	26.5	C	25.5	C	32.1	C
		TR	11.3	B	51.0	D	93.5	F
		<i>Approach</i>	16.1	B	47.8	D	85.9	F
	Southbound	L	28.2	C	61.9	E	100.9	F
		T	24.4	C	33.8	C	36.7	D
		R	10.0	B	8.1	A	8.5	A
		<i>Approach</i>	17.9	B	38.8	D	58.6	D
Overall			6.4	A	41.6	D	36.2	D
CR 58 & Mill Road	Eastbound	L	65.1	E	170.9	F	251.5	F
		T	16.8	B	19.1	B	31.6	C
		R	6.5	A	5.9	A	6.8	A
		<i>Approach</i>	30.5	C	59.2	E	84.1	F
	Westbound	L	10.8	B	22.1	C	54.0	D
		T	27.3	C	76.7	E	155.6	F
		<i>Approach</i>	0.0	A	0.1	A	0.1	A
	Northbound	L	25.0	C	69.5	E	144.7	F
		L	27.3	C	92.5	F	247.2	F
		T	54.0	D	104.1	F	37.7	D
		<i>Approach</i>	0.0	A	0.1	A	37.7	D
	Southbound	L	39.7	D	87.9	F	147.2	F
		L	27.3	C	33.1	C	35.1	E
		T	41.5	D	121.8	F	206.7	F
		<i>Approach</i>	0.2	A	0.4	A	0.6	A
Overall			27.7	C	63.9	E	107.3	F

**Table 29 – LOS Comparison
Saturday Peak Hour (Continued)**

Intersection	Approach	Movement	Existing		No Build		Build	
			Delay	LOS	Delay	LOS	Delay	LOS
CR 58 & Proposed Site Access	Eastbound	L					136.3	F
		T					19.8	B
		<i>Approach</i>					43.4	D
	Westbound	T					101.5	F
		R					50.4	D
		<i>Approach</i>					81.3	F
	Southbound	L					106.7	F
		R					14.2	B
		<i>Approach</i>					79.0	E
	Overall			N/A	N/A	N/A	N/A	67.1
CR 58 & Commerce Drive/Gatewood	Eastbound	L	16.8	C	15.0	B	36.5	D
		T			116.8	F	16.9	B
		R			1.8	A	1.7	A
		<i>Approach</i>			112.6	F	17.2	B
	Westbound	L	36.8	E	8.1	A	37.9	D
		TR			7.5	A	17.9	B
		<i>Approach</i>			7.5	A	18.4	B
	Northbound	L	186.4	F			79.5	E
		T	-	-			36.7	D
		R					36.7	D
		<i>Approach</i>			164.8	F	63.6	E
	Southbound	L	917.5	F				
		T						
		R						
		<i>Approach</i>			55.2	E	49.2	D
Overall			N/A	N/A	63.9	E	20.1	C
NY 25 & Kroemer Avenue	Eastbound	L	4.6	A				
		LTR			205.1	F	236.1	F
	Westbound	L	9.6	A				
		LT			11.1	B	10.2	B
		R			3.7	A	3.1	A
		<i>Approach</i>			10.0	B	9.2	A
	Northbound	L	29.1	D				
		T	37.1	E				
		LTR			15.4	B	13.6	B
	Southbound	L	163.7	F				
		T	167.8	F				
LTR				230.3	F	232.7	F	
Overall			N/A	N/A	143.4	F	158.8	F

Notes: Delays for the existing condition unsignalized intersections at CR 58 & Commerce Drive/Gatewood and at NY 25 & Kroemer Avenue were taken from *SimTraffic*. Delays during the Saturday peak at NY 25 & Kroemer Avenue are based on existing counts taken on a beautiful Saturday in mid-October on which large numbers of people chose to engage in activities such as pumpkin and apple picking. Typical Saturday delays at this intersection are and will be much lower than those shown.

4.5.3 Site Access

Access to the project site will be via a signalized intersection on CR 58. The access roadway will have three exiting lanes (two for left turns to eastbound CR 58, and one for right turns to westbound CR 58) and two entering lanes. The entering and exiting lanes will be separated by a raised median.

A potential future second access point is on the west side of the property, at Kroemer Avenue. Although the project site does not have frontage on Kroemer Avenue, some adjacent properties do. Efforts to obtain access to Kroemer Avenue via a portion of the Adchem property have been unsuccessful. In addition to attempting to obtain access via the Adchem property, the developer has executed a “land swap” with the adjacent Riverhead Auto Mall. The land swap gives the project site a border with the right-of-way of a LIPA overhead powerline. Despite the current LIPA policy of only granting revocable licenses across powerline right-of-ways, as opposed to granting permanent easements, the developer is currently negotiating with LIPA to obtain access across this right-of-way to Kroemer Avenue. LIPA has made a determination that the layout of the proposed second access roadway to Kroemer Avenue through the right-of-way is a parallel occupancy. LIPA has a policy of not granting access that runs parallel to their power lines. The developer is challenging the determination and attempting to obtain an exception to the determination.

Should access to Kroemer Avenue be obtained, approximately twenty-five percent of traffic entering and exiting the site can be expected to use the Kroemer Avenue entrance instead of the main access point, resulting in lower vehicle delays than would otherwise exist at the main site access point intersection with CR 58. All efforts to obtain a second access to the Kroemer Avenue signal are contingent upon dedication of the north leg of Kroemer Avenue, which is currently privately owned, to the Town of Riverhead.

The developer has also attempted to obtain a second access point to Mill Road. This access would cross SCTM parcel 0600-101-1-8, an approximately 23-acre parcel on the west side of Mill Road, north of the Millbrook Mobile Home Park.

4.5.4 Parking

While the proposed development requires 2,265 parking spaces, the *Site Plan* includes 2,424 parking stalls, of which 259 would be landbanked. Of the total, 48 would be handicap. There would be nine loading spaces. Of the 2,424 paved parking stalls 636 spaces would be full-size (10.0 feet-by-20.0 feet), 1,621 spaces would be 9.5 feet-by-19.0 feet and 167 spaces would be 9.0 feet-by-18.0 feet. Therefore, the applicant is requesting a relaxation of the parking stall size standard.

4.5.5 Public Transportation

Two Suffolk County Transit bus routes pass the project site on CR 58. The S-62 bus travels between Riverhead and Hauppauge via Port Jefferson. The S-58 travels between Riverhead and East Northport via the Smith Haven Mall.

A third Suffolk County Transit bus, the 8A, serves a local route, including stops at the Tanger Outlet Center and Glenwood Trailer Park. This route serves the local Riverhead area and can be easily modified to include the Shops at Riverhead among its stops.

All three routes above have short trips from the Shops at Riverhead to the Riverhead LIRR station, making the Shops at Riverhead readily accessible for public transportation users.

4.5.6 Conclusions

Based on the observations and the results of the study, Eschbacher VHB has concluded the following:

- With the proposed construction of a second eastbound lane on CR 58 from Kroemer Avenue to Mill Road, construction of a second eastbound left turn lane at Mill Road, and coordination of the traffic signals along CR 58, intersection delays at the study intersections along CR 58 other than at Mill Road can be expected to improve when comparing the Build to the No Build scenario;
- The long term project to relocate the termination of Pulaski Road to the Riverhead Centre traffic signal and the improvements being considered in the CR 58 Corridor Study by Suffolk County would combine to noticeably improve future traffic conditions at the CR 58/Mill Road intersection;
- The proposed site access driveway intersection with CR 58 can be expected to operate at a reasonable LOS during the peak traffic periods;
- The intersection of Commerce Drive/Gatewood will likely require signalization in the near future, with or without construction of the proposed Shops at Riverhead. A signal will be installed as part of the PC Richard project; and
- Sufficient on-site parking is being provided.

Based on the above, it is the opinion of Eschbacher VHB that the proposed project will not have any significant adverse traffic impacts that cannot be mitigated (see Section 5.5 of this DEIS).

4.6 AIR QUALITY AND NOISE

4.6.1 Air Quality

RTP Environmental prepared an air quality analysis for the proposed project. A copy of the complete air quality analysis is included in Appendix I of this DEIS. A summary of the potential impacts is included herein.

Traffic-Related Impact Methodology

The proposed project is expected to generate emissions of carbon monoxide (“CO”), nitrogen oxides (NO_x), volatile organic compounds (“VOCs”) and fine particulates (PM₁₀ and PM_{2.5}) which are associated primarily with project related traffic. Thus, an air quality analysis was performed to determine traffic related impacts at various traffic intersections surrounding the proposed traffic site. Evaluation of air quality impacts included existing conditions (2006) and 2009 Build and No Build (Build year without the project) traffic conditions for the Saturday Peak hour (mid-day). The air quality analysis is based only on Saturday Peak traffic conditions since data for other traffic periods (AM, PM and weekday daytime Peak), provided lower traffic volumes according to the traffic engineering data.

There are two types of traffic related air quality analyses that can be required for a proposed project of this type; microscale analysis and mesoscale analysis. The NYSDOT Environmental Procedures Manual (EPM), Chapter 1.1 (January 2001) details the criteria for determining if a project requires either air quality analysis. A microscale analysis focuses on CO, PM₁₀ and PM_{2.5} impacts, where as a mesoscale analysis focuses on VOC and NO_x as well as PM and CO impacts.

Determination of Level 1 Carbon Monoxide Microscale Analysis

Traffic related carbon monoxide impacts are typically localized, and therefore, high carbon monoxide concentrations are generally limited to within a relatively short distance of busy roadways. Consequently, the carbon monoxide air quality analysis is designed to predict concentrations on a localized (microscale) basis. The determination for a required microscale analysis for roadway intersections containing project related traffic is based on the consideration of various criteria. The criteria are evaluated in the form of an extensive three-step screening process. The traffic engineers provided a list of five intersections that were evaluated for project related traffic impacts. Four of the five intersections currently exist, while one of the intersections is proposed to accommodate site access. A list of evaluated intersections is provided below and in Table 4 of Appendix I.

<u>Intersection</u>	<u>Level of Service (Build)</u>
Old Country Road @ Tanger Mall Drive	C
Old Country Road @ Kroemer Avenue	D
Old Country Road @ Mill Road/Pulaski Street	F
Old Country Road @ Commerce Drive/Gatewood	F
Proposed Site Access	E

Level of Service Screening Analysis

A Level of Service (“LOS”) screen is the first screening step in the NYSDOT procedure. The LOS defines the overall traffic operating ability of an intersection (a complete definition of LOS can be found in the *Highway Capacity Manual* [Transportation Research Board, 2000]). The LOS can range over six categories, A through F, and is based on traffic volume, intersection geometry and signal timing/phasing (if intersection contains traffic signal). Eschbacher VHB has calculated traffic LOS for each intersection listed above. LOS was calculated for each intersection approach, as well as the intersection as a whole. Only the overall LOS was used in the following LOS screening analysis.

The list of intersections includes the corresponding LOS for PM peak hour traffic conditions. Based on the NYSDOT EPM, intersections with an overall projected LOS of A, B or C under Build conditions are generally excluded from a microscale analysis. Intersections with an overall LOS of D or worse must be further evaluated by additional screening criteria procedures. Intersections in Table 4 of Appendix I depicted by bold text and shading, represent a LOS of D or worse, and therefore, were subject to additional screening.

Capture Criteria Screening Analysis

The capture criteria screening analysis is the second screening step in the NYSDOT procedures. The intersections that have been identified as having a LOS of D, E or F, were subjected to the NYSDOT capture criteria. The capture criteria apply to the difference between No Build to Build traffic conditions at selected intersections. Namely:

- 1) A 10 percent or more reduction in source receptor distance (meaning the straight line distance between the edge of the travel lane closest to the receptor closest to the roadway);
- 2) A 10 percent or more increase (Build-No Build) in traffic volume per intersection approach;
- 3) A 10 percent increase in vehicle emissions due to changes in speed, vehicle mix, etc.;
- 4) An increase in the number of queued lanes (i.e., the addition of a lane at an intersection that is subject to passing through a traffic signal); and
- 5) A 20 percent reduction in speed, when the Build estimated average is at 30 mph or less.

If an intersection meets *any* one of the applicable criteria above, the intersection will be subject to a volume threshold screening analysis, the third and final microscale analysis determination.

As proposed, vehicle emissions are not expected to increase from Existing to Build Conditions (NYSDOT, 2004a) and a 20 percent reduction of speed for Build conditions (regardless of roadway speed less than 30 mph) is not expected (based on vehicle speed data obtained from the NYSDEC for 2006 and 2009). Therefore, only capture criteria number 1, 2 and 4 apply to the intersections that have passed through the LOS screening analysis in this case.

Table 5 in Appendix I presents data on each intersection for capture criteria associated with a 10 percent or more reduction in source receptor distance, a 10 percent or more increase in traffic and an increase in the number of queue lanes. Traffic volume data per approach for both the No Build and Build traffic conditions are presented. Intersections that showed an increase in traffic volume of 10 percent or more, per approach, are depicted in bold and shading. It is not expected that any intersections will experience a 10 percent or more reduction in source receptor distance, however, roadway modifications to Old Country Road (County Road 58) are anticipated that will likely increase the number of queue lanes. Roadway modification plans were not finalized at the time of this analysis.

Volume Threshold Screening Analysis

The volume threshold screening analysis is the third and final screening step. Due to a number of intersections meeting one or more of the applicable capture criteria above, NYSDOT EPM volume and emission factor charts were used to perform a volume threshold screening analysis. The vehicle threshold tables (Tables 3a, 3b and 3c from the NYSDOT EPM) tie the volume threshold with localized emission factors.

The first step is to obtain local vehicle emission rates. Determining vehicle emission rates for Suffolk County was accomplished by using NYSDOT MOBILE6.2 emission factor guidance. The NYSDOT interactive MOBILE6.2 Emission Factor Tables – Look up and Calculation Program for Microscale Analysis was used to obtain Build year (2009) carbon monoxide vehicular emission rates for Suffolk County. Figure 1 in Appendix I shows an example of the interactive NYSDOT MOBILE6.2 Calculation Program. The NYSDOT MOBILE6.2 Calculation Program generates representative composite vehicle emission rates based on the following input parameters: County the project is located in, year the project is expected to be completed (Build year), road functional class and vehicle speeds. The program, in this case, was used to calculate vehicle emission rates by multiplying MOBILE6.2 emission factors for each vehicular type by Suffolk County's default vehicle mix fractions. In order to obtain all appropriate emission rates to complete the volume threshold screening analysis, roadway classifications and vehicle speeds were determined for each intersection under consideration.

From the four intersections that were screened, roadway types were classified as either rural minor arterials, rural major collectors or rural minor collectors (road functional classes 06, 07 and 08, respectively). Since site-specific vehicle speeds data were not analyzed by the traffic engineers, Build year speed data for Suffolk County were obtained from Mr. Walter Pienta of the NYSDEC - Mobile Source Planning Division. Table 6 in Appendix I represents the MOBILE6.2 emission rate calculations per roadway type and vehicle speeds. Idle emission rates (0 mph) were also determined.

The next step in the volume threshold screening process is to determine the threshold volumes that match the worst-case emission rates for the Build year (2009) that were established in the previous step. The worst-case free-flow emission rate of 5.62 grams/mile (16.2 mph) and the queue (idle) emission factor of 50.96 grams/hour (0 mph) were used to determine volume thresholds (see Table 6 in Appendix I).

Tables 3a-3c in the NYSDOT EPM provides threshold volumes for various sets of free-flow and queue emission rates for both signalized and un-signalized intersections. Table 3b applies to un-signalized intersections and represents threshold volumes for the intersection total (total intersection traffic) and Table 3c applies to signalized intersections and represents threshold volumes for any single approach (e.g. total eastbound traffic). Since NYSDOT EPM Table 3 provides emission rates in 2.5 grams/mile increments, the estimated worst-case free-flow emission rate of 5.62 grams/mile will be adjusted to the applicable emission rate of 5.0 grams/mile. For the estimated idle emission factor of 50.96 grams/hour, the applicable emission rate for comparison would be 100.0 grams/hour since 100 grams/hour is the lowest idle emission factor in NYSDOT EPM Table 3c. Therefore, the volume threshold for a free-flow emission rate of 5.0 grams/vehicle and a queue emission rate of 100 grams/hour is 4,000 vehicles per approach for signalized intersections and 8,000 vehicles for all approaches combined for un-signalized intersections (i.e. Old Country Road at Commerce Drive/Gatewood).

The final step of the volume threshold screening analysis is to compare the 4,000 vehicle per approach threshold with the predicted Build Condition traffic volumes for each signalized intersection approach (8,000 vehicles total for un-signalized intersections). Table 7 in Appendix I presents predicted Build traffic conditions for each approach for the four intersections screened. The approach volumes projected per intersection were compared with the threshold approach volume of 4,000 vehicles for the signalized intersections and the threshold volume of 8,000 (total) vehicles for the un-signalized intersection to see if a microscale carbon monoxide analysis was needed for that intersection. If any one of the intersection approaches meets or exceeds the applicable volume threshold, a carbon monoxide impact assessment is necessary.

None of the Build traffic approach volumes exceeded the volume thresholds. Therefore, all intersections passed the screening analysis, meaning none of the intersections required a microscale carbon monoxide impact analysis. Nevertheless, one intersection was chosen for carbon monoxide modeling to ensure that applicable carbon monoxide air quality standards will not be exceeded.

The intersection of Old Country Road (CR 58) at Mill Road/Pulaski Street was selected for carbon monoxide modeling based on its proximity to the project site, poor level of service (highly congested) and substantial increases traffic volume from current levels to proposed Build levels.

The carbon monoxide microscale analysis for this intersection included the worst-case scenario of the Existing (2006), No Build (2009) and Build (2009) and, therefore, the analysis estimated the maximum carbon monoxide levels expected for the proposed project. Since traffic engineering data for the Saturday peak hour presented a worst-case traffic air quality scenario (i.e. poor level of service, high traffic volumes, etc.), the microscale analysis for this intersection was only performed for Saturday peak traffic conditions. Saturday peak hour traffic engineering details for the intersection of Old Country Road (CR 58) at Mill Road/Pulaski Street are presented in Attachment 1 in Appendix I.

CO Microscale Analysis

A carbon monoxide microscale air quality analysis requires the use of a predictive model for air pollutant emissions associated with the mobile sources being evaluated. As stated earlier, the current emissions model recommended by the NYSDEC and NYSDOT is MOBILE6.2. MOBILE6.2 emission factors were obtained through the NYSDOT's interactive emission factor generator (NYSDOT, 2007). Generated emission factors were checked with MOBILE6 Emission Factor Table EFI from the NYSDOT's EPM for quality control purposes.

Emission factors were generated for Existing (2006) traffic conditions and No Build and Build (2009) traffic conditions (see Attachment 2 in Appendix I). Parameters used to generate site specific emission factors for the intersection of Old Country Road (CR 58) at Mill Road/Pulaski Street include; default Suffolk County vehicle class distributions, rural roadway classifications (Classes 06, 07 and 08) and vehicle speeds for daytime (Saturday peak) traffic conditions. Saturday (daytime) Suffolk County traffic speeds were obtained for 2006 and 2009 from the NYSDEC Mobile Source Planning Division (NYSDEC, 2005).

The atmospheric dispersion model recommended for use in this project by the NYSDEC and NYSDOT was CAL3QHC. CAL3QHC Version 2 (dated 04244) is an approved USEPA mobile source air dispersion model. CAL3QHC is a line source dispersion model for evaluating transportation related air quality impacts. The model applies Gaussian diffusion theory and uses standardized meteorological conditions and vehicle roadway and receptor configurations to provide estimates of hourly concentrations for the pollutant(s) of interest. CAL3QHC is a refined screening method, and therefore, provides conservative estimates of air quality concentrations. A more refined version of the model (CAL3QHCR) is available if predicted concentration impacts exceed applicable air quality standards for carbon monoxide.

The dispersion model was configured to conservatively estimate air quality impacts for existing traffic conditions (2006), future conditions without the project (No Build, 2009) and future conditions with the project (Build, 2009). The model has standardized default assumptions in addition to user-supplied data. In this case, the supplemental input variables used are provided in Table 8 in Appendix I. Figure 3 in Appendix I. provides an aerial layout of the various individual roadway links and receptor configuration for the Old Country Road (CR 58) at Mill Road/Pulaski Street intersection. According to the traffic engineers, no roadway configuration changes are expected on the existing intersection layout to compensate for project related traffic impacts. Therefore, the Build year modeling scenario utilized the existing roadway configuration.

The specific period of the day analyzed for the intersection was based on total traffic (vehicles per hour) and overall congestion. Based on traffic engineering data, Saturday (daytime peak hour) represented a worst-case traffic and congestion scenario, and therefore, only Saturday peak hour traffic volumes were used to determine worst-case air quality conditions.

Existing Conditions

The air quality impacts associated with the Existing Condition (2006) were estimated using the above referenced models and input variables. The detailed model results are presented in Attachment 3 in Appendix I. The model results provide the hourly impacts only. These impacts plus the 1-hour 2006 background carbon monoxide concentration for Suffolk County (2.2 ppm) can be directly compared to the 1-hour Federal and State Air Quality Standard of 35 ppm for carbon monoxide. The maximum hourly carbon monoxide values for existing traffic conditions are provided in Table 30.

Table 30 - Predicted 1-Hour and 8-Hour Carbon Monoxide Concentrations (ppm)

Old Country Road (CR 58) @ Mill Road /Pulaski Street	1-Hour Background	Projected 1-Hour Maximum CO Impact	Combined Peak 1-Hour CO Impact	1-Hour NAAQS Standard
Existing Traffic (2006)	2.2	1.4	3.6	35
No build Traffic (2009)	2.3	1.3	3.6	35
Build Traffic (2009)	2.3	1.9	4.2	35
Old Country Road (CR 58) @ Mill Road/Pulaski Street	8-Hour Background	Projected 8-Hour Maximum CO Impact	Combined Peak 8-Hour CO Impact	8-Hour NAAQS Standard
Existing Traffic (2006)	1.5	1.0	2.5	9
No build Traffic (2009)	1.6	0.9	2.5	9
Build Traffic (2009)	1.6	1.3	2.9	9

Notes:

- All values are in parts per million (“ppm”)
- NYSDOT Environmental Procedures Manual (“EPM”) value for Suffolk County. EPM rollback method used to calculate existing and build year background levels.
- 8-hour impact by 0.7 (NYSDOT EPM).

Existing CO background values were obtained from the NYSDOT EPM. Since background values are provided for the year 2000 only, the EPM background roll back method was utilized to define existing (2006) CO 1-hour and 8-hour background values (see Appendix I). The maximum estimated 1-hour carbon monoxide receptor concentration for Existing Conditions is well below the Federal and State standard of 35 ppm. The highest concentration predicted, 1.4 ppm, occurred at a sidewalk receptor on the south side of Old Country Road (Eastbound). This predicted peak value is presented in Table 30. The maximum prediction is likely to be an overestimate of actual expected concentrations since conservative vehicle speeds for free flow links and emission rates for all vehicle queues were used in the analysis. The predicted existing traffic impact value was added to the 2006 rolled back background carbon monoxide value for Suffolk County (2.2 ppm) to obtain a maximum predicted total 1-hour carbon monoxide concentration value of 3.6 ppm, which is well below the Federal and State air quality standard.

The maximum estimated eight-hour carbon monoxide receptor concentration for Existing Conditions is also presented in Table 30. NYSDOT EPM recommends that the eight-hour value be derived by multiplying the one-hour value by a persistence factor of 0.7. When existing traffic impacts are combined with the applicable eight-hour background concentration of 1.5 ppm for Suffolk County, the combined maximum carbon monoxide receptor concentration of 2.5 ppm is also well within the Federal and State standard. It is unlikely that an individual will be exposed at this location for a full eight-hour period since they would have to remain stationary at the receptor location for the full eight-hour interval when the wind was within a 5° wind direction sector at an average speed of 1.0 meters per second and a neutral (D) atmospheric stability (how the model has interpreted the maximum impact). All other receptors have lower concentrations, in fact, the receptor concentrations decrease dramatically as the distance of the receptor from the intersection and individual links increases. Traffic related carbon monoxide impacts are considered very localized with high carbon monoxide concentrations within a relatively short distance of busy roadway intersections.

The concentrations at a building receptor would be more realistic for estimating the 8-hour carbon monoxide concentration exposures to humans. The maximum existing 8-hour combined carbon monoxide concentration for all building receptors is below the sidewalk receptor values. A person would more likely be exposed to the concentration for a period of eight hours at the building receptor locations.

Anticipated Impacts

The anticipated impacts on air quality were estimated using the same models used to evaluate existing conditions. Traffic data were developed for a future year 2009 signifying project completion. For the year 2009, two model scenarios were run at Old Country Road (CR 58) at Mill Road/Pulaski Street, one with projected 2009 traffic volumes only (No Build Case) and one with project traffic added to the projected 2009 traffic volumes (Build Case). Based on the conclusions from the traffic analysis by Eschbacher VHB, as mentioned earlier, Build case traffic conditions were modeled using existing roadway configurations.

Table 9 in Appendix I contains the maximum expected carbon monoxide for the year 2009 without the project or No Build Case. Again, the one-hour background values are added to the predicted traffic maximum carbon monoxide impacts to provide the total carbon monoxide peak concentration at the maximum impact point (background values calculated using the same roll-back methodology as the existing analysis). As shown, the peak combined carbon monoxide one-hour value, 3.6 ppm, occurred at a sidewalk receptor on the corner of the intersection. This value is well below the 35 ppm Federal and State air quality standard. The peak eight-hour values are based on the one-hour values for predicted traffic impacts multiplied by 0.7 as in the case for existing conditions. The peak eight-hour combined traffic and background value, 2.5 ppm, again occurred at the same sidewalk receptor location as in the Existing Condition analysis. This value is also below the current Federal and State eight-hour standard of 9 ppm.

Table 30 also provides the maximum expected carbon monoxide impact for the year 2009 with the proposed project traffic included or the Build Case. The one-hour (rolled back) background value was added to the projected traffic impacts with the project to yield a value of 4.2 ppm for the worst case sidewalk receptor. This value is again well below the 35 ppm one-hour Federal and State carbon monoxide standard. The eight-hour peak concentration value is also presented in Table 9 in Appendix I. The peak combined eight-hour value is 2.9 ppm. This value is also well below the Federal and State ambient eight-hour standard for carbon monoxide.

As part of the carbon monoxide analyses presented above, sensitive receptors such as schools, hospitals, parks, etc. in the vicinity of the analyzed intersection were identified and modeled as a sensitive receptor. One sensitive receptor was found to be in the vicinity of the analyzed intersection and was included in the analyses for Existing, No Build and Build Conditions. The sensitive receptor represents the Medical Center on Commerce Drive (just northeast of the project site). The maximum impact at this location is summarized in Table 31. As shown, the maximum impact concentration is well below the one-hour and eight-hour standards.

**Table 31 - Predicted One-Hour and Eight-Hour Sensitive Receptor
Carbon Monoxide Concentrations (ppm)**

Old Country Road (CR 58) @ Mill Road /Pulaski Street	1-Hour Background	Projected 1-Hour Maximum CO Impact	Combined Peak 1-Hour CO Impact	1-Hour NAAQS Standard
Medical Center – Commerce Dr. (R42)				
Existing Traffic (2006)	2.2	0.2	2.4	35
No build Traffic (2009)	2.3	0.1	2.4	35
Build Traffic (2009)	2.3	0.2	2.5	35
Old Country Road (CR 58) @ Mill Road/Pulaski Street	8-Hour Background	Projected 8-Hour Maximum CO Impact	Combined Peak 8-Hour CO Impact	8-Hour NAAQS Standard
Medical Center – Commerce Dr. (R42)				
Existing Traffic (2006)	1.5	0.1	1.6	9
No build Traffic (2009)	1.6	0.1	1.7	9
Build Traffic (2009)	1.6	0.1	1.7	9

Notes:

- All values are in ppm
- NYSDOT EPM value for Suffolk County. EPM rollback method used to calculate existing and build year background levels.
- 8-hour maximum impact was computed by multiplying the 1-hour impact by 0.7 (NYSDOT EPM).

Assessing the Impacts of Fine Particulate Emissions

The NYSDEC issued on December 29, 2003 a policy memorandum CP-33 on fine particulate matter, PM_{2.5}. Whenever an application for a permit or major permit modification is reviewed under SEQRA, the NYSDEC or NYSDOT policy applies. The lead agency staff is directed to evaluate the potential for significant adverse impacts resulting from the emission of fine particulate matter during the operation of the proposed project. If potential operational emissions including mobile and stationary sources exceed a threshold of 15 tons per year, the applicant is required to employ reasonable and necessary mitigative measures to limit emissions to the maximum practicable extent. A project-related fine particulate matter (both PM₁₀ and PM_{2.5}) air quality analysis has been developed and is provided in Appendix I. Based on the minimal increase in PM₁₀ and PM_{2.5} concentrations between the Build and No Build cases, the project will not cause a significant increase in particulate air concentrations (see Tables 11-14 in Appendix I).

Vehicle Related NO_x, VOC and O₃ Impacts

Vehicles utilizing the proposed development would emit Nitrogen Oxides (“NO_x”) and Volatile Organic Compounds (“VOCs”), and therefore, impact the ozone levels in the general area. The severe ozone non-attainment area includes all of Long Island, New York City and a few adjoining counties. This area has had historically high ozone levels that have diminished but still are above the standards. The causes for the high ozone levels are fairly complex but are primarily associated with the release of precursor air pollutants such as nitrogen oxides and volatile organic compounds. Several State and Federal funded studies have determined that possible solutions to the problem include limiting the release of precursor pollutants via Federal and State mandated programs. The studies showed that even with zero emissions in the New York Metropolitan area, ambient ozone levels would still exceed standards because of emissions from adjoining states. Therefore, these control programs not only include the immediate New York metropolitan areas but several states to the south and west of New York.

The control programs attack the ozone non-attainment problem on several fronts including emission limits on electric and non-electric generating units, area sources and on and off road sources. All on-road vehicles in New York State will roughly account for 49 percent of a total 256,000 tons of nitrogen oxide emissions in 2007. New York State, therefore, has proposed a program for on-road vehicles whereby the control measures will include:

- California Low Emission Vehicle Program
- Federal Reformulated Gasoline
- 9.0 Reid Vapor Pressure
- High Enhanced Inspection and Maintenance Program
- Year 2004 Federal Heavy Duty Vehicle Standards

With the approval and implementation of the New York and other State programs, the anticipation is that the ozone levels will begin declining and the region, as well as the local Riverhead area, will comply with standards. As such, the facility will comply with all applicable rules and regulations. For additional information, Section 4.6 Ozone of the NYSDEC Annual Monitoring Network Plan has been attached along with detailed Regional/Ozone Monitoring data for 2006 and 2007 (see Attachment 6 in Appendix I).

Mesoscale Analysis

In addition to a microscale analysis, the NYSDEC and NYSDOT can require a mesoscale emissions analysis to determine the relative change in regional pollutants expected as a result of a proposed project. Based on NYSDOT EPM guidance, in order for a project to need a mesoscale analysis, the project must generate 10 percent or more vehicle miles traveled (“VMT”) over a large area, (Suffolk County). Based on a total peak Saturday (daytime) trip generation rate of 2,915 trips per hour under the proposed action, the project would not exceed 10 percent of the trips generated in the general area surrounding the project site. Therefore, a mesoscale analysis is not formally required for the proposed development.

Conformity Determination

The proposed project is in a severe ozone non-attainment area. As detailed in 6NYCRR Part 240, the proposed action does not involve approval, funding or implementation of the Federal Highway Administration/Federal Transit Administration (“FHWA/FTA”), and therefore, is exempt from a Conformity Determination under Part 240. In addition, based on the above microscale analyses, the project will only cause minor contributes to any new localized carbon monoxide levels surrounding the project site.

Construction And Operational Air Quality Impacts

Air quality impacts associated with the construction and operation of the proposed facilities are anticipated. These impacts result from the operation of construction equipment and fugitive emissions during construction and the actual air pollutant emissions from operating the proposed facilities.

Potential Construction-Related Impacts

Impacts to air quality from project construction activities are anticipated to be short-term and relatively insignificant. The Shops at Riverhead project will require demolition activities, site grading and construction. The construction process is expected to be completed in one phase by 2009.

Construction activities are normally not regulated according to air quality standards, but are typically regulated under nuisance clauses. As such, project applicants typically implement controls that limit the construction emissions to non-nuisance levels.

During construction, the operation of heavy construction equipment is a source of temporary dust emissions that can impact local air quality. Dust is generated from, but not limited to, demolition, including blasting, land clearing, ground excavation, and earth moving. In addition, the use of heavy equipment and the emissions generated from off-road engines can add to potential local impacts. The temporary and site specific nature of construction activities make it difficult to estimate potential emissions. Further, the varied nature of construction and phasing of activities make emission estimates increasingly difficult. Construction also utilizes different types of controls that are also useful in the reduction of fugitive dust emissions. Typical dust suppression, such as the use of water trucks, covered storage piles and trucks can greatly reduce construction impacts. In addition, other site controls, such as stormwater pollution prevention activities and good housekeeping, can reduce site dust generation. Stormwater pollution prevention activities, such as phased construction activities, minimizing the extent of disturbed soils, stabilizing soils, gravel roadbeds, wheel washes, etc. can provide benefits to both off-site water and air impacts. Regular equipment maintenance and upkeep can also reduce negative impacts from on-site equipment usage.

Emissions data for heavy construction operations have been developed by the U.S. Environmental Protection Agency (USEPA, 1995). Published emission factors specific to construction were utilized to determine potential air quality impacts associated with the proposed project. USEPA developed a rudimentary, conservative estimate. The USEPA emission factor for total uncontrolled suspended particulate ("TSP") is based on one set of field studies and are considered appropriate for construction operations with medium activity level, moderate silt contents, and semiarid climate. It is anticipated that this site will have medium activity level. According to the *Soil Survey of Suffolk County*, the site has moderate to low silt content. However, Suffolk County is hardly a semiarid climate and is more aptly described as humid-continental. Documentation for the USEPA emission factor indicates that it is highly conservative and will overestimate both TSP PM_{10} and $PM_{2.5}$ emissions. However, the current lack of specific construction activity information (material transfers, soil cut and fill, etc.) has necessitated that the emission factor of 1.2 tons of TSP per acre per month be utilized to conservatively describe project activities (USEPA, 1995).

Typically, PM₁₀ comprises less than 25 percent of TSP. As such, a conservative uncontrolled PM₁₀ emission factor for the site was estimated at 0.6 tons per year per month of activity. Further, dust suppression and best management practices will further control fugitive dust. For example, the use of a water truck on facility roads has been shown to reduce fugitive road emissions by more than 95 percent. As such, a conservative control of 75 percent was utilized to reflect moderate or typical overall controls at the site. Based on this information, it is estimated that the site will generate 0.15 tons of PM₁₀ per acre per month of activity, or 6.3 tons per month (if all 42 acres were simultaneously under construction for any given month). Over a 12-month period (assuming all 42 acres under construction simultaneously for an entire year), the total PM₁₀ emissions are conservatively estimated at 75.6 tons. Considering the period of time, expected construction phasing and the distribution of these emissions over substantial areas and the control measures typically applied during construction, air quality impacts are expected to be minimal and not exceed air quality standards.

Potential Operational-Related Impacts

The operation of point and fugitive sources of air pollution at the facilities within The Shops at Riverhead will result in minimal increases in the overall atmospheric air pollutant burden based on the nature of typical retail operations and associated activities. Heating, ventilating and air conditioning systems (“HVAC”) release small amounts of air pollutants that when compared to the regional burden are insignificant and should not cause an exacerbation of applicable standards or guidelines. At this time, it is unknown whether any HVAC systems installed as part of the project will require air permitting or registrations.

The proposed project will have an insignificant air quality impact on other air quality related values such as visibility impairment, acid deposition, impacts on soils or impacts on vegetation. The relative air pollution burden added by the construction and operation of the project is insignificant when compared to the current and future background sources in the region.

4.6.2 Noise

RTP Environmental prepared a noise analysis for the proposed project. A copy of the complete noise analysis is included in Appendix J of this DEIS. A summary of the potential impacts is included herein. Note that the future conditions assumes that no change to the existing noise environment other than the operation of the proposed project.

Primary Noise Sources

Primary noise sources with the potential for noise impacts include HVAC equipment, loading/unloading activities, movement of delivery trucks to and from the loading bays/docks, and the delivery truck back-up alarm.

All building mechanical and HVAC equipment will be housed inside buildings or designed to have no impact on adjacent noise-sensitive land uses.

All the loading bays are of the flush design where the truck/trailer is backed up flush against the loading bay. The flush design practically eliminates the loading/unloading noise associated with the older open platform designs as these activities are effectively enclosed inside the building. Consequently, noise from the loading or unloading of goods is expected to be inconsequential. Furthermore, the loading and unloading of goods/products is subject to Section 81-5.F of the Riverhead Town Code, which limits loading and unloading to the hours between 8:00 PM and 7:00 AM of the next day.

Onsite delivery truck routes are located along the perimeter of the site, along the southern half of the western property line, along the entire eastern property line, and the eastern third of the northern property line. Residential land uses are adjacent to the northern property line (Foxwood Village community) and a portion of the eastern property line (Millbrook community). The noise conditions at these locations are represented by noise monitoring Locations N3 and N1, respectively. Of particular concern are the semi-tractor trailer trucks during the more sensitive nighttime hours. Predicted maximum hourly noise levels (L_{eq}) and maximum noise levels (L_{max}) are presented in Table 32 at Locations N1 and N3 with the ambient maximum hourly nighttime noise levels and the maximum noise levels during the nighttime hours.

Table 32 - Predicted Nighttime Truck Movement Noise Levels (dBA)

Site Location	Delivery Trucks		Existing Ambient	
	Max Hourly L_{eq}	L_{max}	Max Hourly L_{eq}	L_{max}
N1	48	73	54	81
N3	50	73	47	86

Estimates of maximum noise levels were made using heavy truck maximum pass by noise level data in TNM, and L_{eq} noise levels were estimated using TNM 2.0. The developer conservatively estimates that up to four heavy trucks and two medium trucks in a one-hour period will be making deliveries to the stores along the eastern section of the site, moving at a speed of 15 mph. While most deliveries are expected to occur during the daytime hours, it is nonetheless assumed that deliveries may be made sometime during the nighttime hours. Noise levels from delivery trucks are expected to be 48 dBA at N1 and 50 dBA at N3. The maximum ambient hourly noise levels were 54 dBA and 47 dBA at the corresponding locations. The estimated maximum delivery truck noise level is expected to be 73 dBA for both locations. Maximum noise levels of 81 dBA and 86 dBA have been observed during the nighttime hours at Locations N1 and N3 respectively.

Backup alarms are required safety devices under federal motor carrier and OSHA regulations. A property or store owner may run afoul of the safety requirement in mandating or regulating the loudness level or operation of a backup alarm. The alarm is readily and unmistakably audible at 15 feet by design (industry advocates 10 dB above ambient noise level) to alert anyone behind the truck that it is backing up. Since noise levels of back-up alarms vary greatly from truck to truck, estimates of the resulting noise levels at receptor locations are therefore infeasible.

Secondary Noise Sources

The major source of noise affecting the community noise environment from the proposed development is the additional traffic introduced by the project. As the resulting total traffic volumes for the alternatives considered are similar to (or slightly lower than) those of the proposed action, analysis results and findings presented herein apply to all of the Build alternatives. Table 33 summarizes the peak traffic hourly L_{eq} noise levels that can be expected with the additional traffic as a result of the Shops at Riverhead under the Build and No Build conditions. In general, the project site under the Build Alternative is expected to have no significant impact relative to the No Build noise levels.

Table 33 - Future Noise Levels by Location (dBA)

Location	AM		PM		Weekend	
	Build	No Build	Build	No Build	Build	No Build
N1	55	55	55	55	55	54
N2	70	69	72	71	73	72
N3	50	50	49	49	49	48

As can be seen above, increases in noise levels due to the proposed project are expected to be one dBA or less. Therefore, the proposed action is not expected to significantly change the noise environment in the adjacent community.

Noise Impacts

Of the primary noise sources, building mechanical and HVAC equipment and loading bay activities are not expected have any impacts. All building mechanical and HVAC equipment will be enclosed within buildings or otherwise designed to satisfy the Town noise ordinances and building permit requirements. The flush design of the loading bays greatly attenuates the noise from the loading and unloading activities, effectively enclosing the operation.

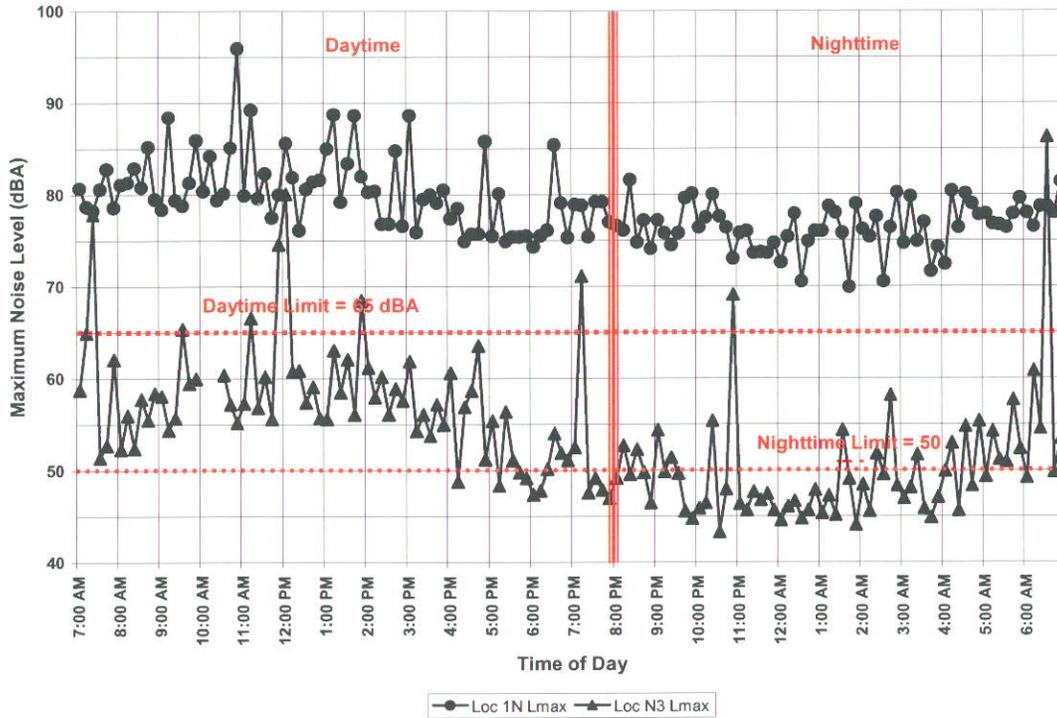
Under the “worst case” nighttime delivery scenario, the hourly noise level (L_{eq}) does not exceed the NYSDOT nor the NYSDEC 6-dBA noise level increase criteria for a noise impact as shown in Table 34. In fact, the delivery truck noise level at Location N1 is expected to be significantly lower than the existing maximum hourly L_{eq} .

Table 34 - Nighttime Truck Delivery Noise Levels (dBA)

Site Location	Delivery Trucks		Existing Ambient		Town Noise Limit
	Max Hourly L_{eq}	L_{max}	Max Hourly L_{eq}	L_{max}	L_{max}
N1	48	73	54	81	50
N3	50	73	47	86	50

The maximum single heavy truck pass-by noise level at Locations N1 and N3 can be expected to exceed the Town’s daytime and nighttime maximum noise level limits of 65 and 50 dBA. However, the maximum number of such occurrences in any one hour period is expected to be less than 4 times, each lasting no more than 30 seconds. As shown in Table 35, existing maximum noise levels at these locations frequently exceed the Town noise limits of 65 dBA for daytime and 50 dBA for nighttime.

Table 35 - Existing Maximum Noise Levels (L_{max} in dBA)



Vehicle back-up alarms are a required safety device that warns of danger. As is the case in most noise regulations and guidelines, the Town noise ordinance specifically exempts warning and safety devices.

For all three locations, traffic noise levels under the Build condition is expected to increase by one dBA or less versus that under the No Build condition, well below the 6 dBA that NYSDEC and NYSDOT consider a significant increase and below the 3 dBA that is considered a perceptible change by most people. Consequently, secondary noise impacts are not expected.

Conclusions

In conclusion, with the exception of the occasional heavy delivery truck movements along the eastern property line and the northern eastern property line generating pass-by maximum noise levels exceeding the Town noise level limits as are most existing noise levels, the proposed project is not expected to have significant noise impacts by NYSDEC and NYSDOT noise impact guidelines.

4.7 SOCIOECONOMICS

As previously indicated, an Economic Impact Analysis was prepared by Dr. Pearl M. Kamer. The complete report can be found in Appendix K of this DEIS. This section includes an excerpt of the potential socioeconomic impacts associated with the development of the proposed project.

4.7.1 Introduction

The proposed retail development will be located in the Town of Riverhead within Suffolk County, New York. County Road 58 and Kroemer Avenue will provide access to the site. The 41.55 acre site is currently zoned DRC, Destination Retail Center. Approximately 499,609 square feet (gross floor area) of retail and related space are proposed. The developer is negotiating with a number of tenants and is anticipating a tenant mix similar to that identified in Table 36.

Table 36 – Proposed Building Summary

Building	Description	Floor Area (in Square Feet)
A	Wholesale Club	152,378
B	Toy Store	61,951
C	Department Store	93,171
D	Furniture Store	57,906
E	Pet Store	18,919
F	Home Goods	23,515
G	Home Goods	38,164
H	Craft Store	18,800
I	Electronics Store	19,131
J	Bank	3,500
K	Restaurant	5,213
L	Restaurant	6,961
	Total	499,609

The proposed shopping center is close to the Tanger Retail Outlet, which draws its customers from throughout the New York Metropolitan Region. Therefore, it is likely that The Shops at Riverhead will serve substantial numbers of customers from elsewhere on Long Island, from New York City and even beyond. The purchasing power brought to the community by these customers will help support local hotels, restaurants and other tourist-related facilities. They will also provide additional sales tax revenues to fund Suffolk County government.

The Economic Impact Analysis estimates the potential economic impact of the proposed Shops at Riverhead. It discusses general business conditions in both Suffolk County and the community of Riverhead. It estimates the number of direct jobs likely to be created during the construction phase of the project and the number of permanent jobs likely to be generated. It also demonstrates the secondary economic impact of these jobs. The report estimates the additional property tax revenue that the Shops at Riverhead will generate and shows how local taxing districts will benefit. Based on the number of preservation credits needed to construct the project at proposed densities, the report also estimates how many acres of farmland within the Town of Riverhead will be preserved as a result of this project.

4.7.2 Job Creation and Earnings Generated During the Construction Phase

This section estimates the jobs likely to be created during the construction phase of the project and discusses the secondary economic impact of these jobs on the Riverhead community. The estimated construction cost for the project is \$68,931,971, which includes site work, construction of the buildings and tenant improvements (see Table 37).

Table 37 – Estimated Construction Costs

Type of Construction	Estimated Cost
Site Work	\$9,161,756
Buildings	46,776,690
Tenant Improvements	12,993,525
Total Cost	\$68,931,971

Source: Developer's Realty Corporation

An estimated 60 percent of the total construction cost, \$41,359,183, is estimated to consist of labor costs. With this amount as a starting point, the following methodology was used to estimate the number of jobs likely to be created during the construction phase of the project and the payrolls associated with those jobs. The steps involved in the calculation are included in Appendix K of this DEIS.

The direct jobs and payrolls created during the construction phase are only part of the economic benefit to the immediate community. There is an indirect or secondary impact as well. Many construction workers live locally and spend their wages locally. These wages then undergo a process of respending. Spending for supplies and equipment also undergoes a process of respending. This creates a multiplier or ripple effect so that the ultimate economic impact is a multiple of the initial expenditure. This multiplier effect can be estimated by using an input-output model of the local economy.

In the following analysis, the RIMS II (Regional Input-Output Modeling System) input-output model has been used to estimate the secondary economic impact of the construction phase of the Shops at Riverhead. The model was prepared by the Bureau of Economic Analysis of the U.S. Commerce Department and is specific to Long Island. It depicts the flow of business activity between industries on Long Island.

The model contains multipliers for output, earnings and employment for each of Long Island's major industries. The output multiplier for construction shows how much Long Island's output of goods and services increases for each new dollar of spending during the construction phase. The earnings multiplier shows how local earnings increase as a result of each new dollar of spending during the construction phase. The employment multiplier shows how many jobs are created for each million dollars of spending during the construction phase.

The output multiplier for construction is 2.0674. This means that for every dollar of direct spending during the construction phase, Long Island's total output of goods and services increases by almost \$1.07. The earnings multiplier for construction is 0.6451, which means that for every dollar of direct spending during the construction phase, local payrolls increase by almost 65 cents. The employment multiplier for construction is 15.8055, which means that for every million dollars of direct spending during the construction phase almost 16 secondary jobs are created throughout the economy.

According to the model, spending of \$68,931,971 during the construction phase will cause Long Island's output of goods and services to increase by \$142,509,956 million, including the original expenditure. This is equivalent to a net output increase of \$73,577,986. Earnings throughout the Long Island economy would increase by more than \$44 million and an estimated 1,090 secondary jobs would be created in various industries throughout the local economy (see Table 38). Much of this impact would occur in the immediate vicinity of the project.

Table 38 – Secondary Economic Impact of Construction Spending

Type of Multiplier	Multiplier	Direct & Indirect Impact
Output	2.0674	\$142,509,957
Earnings	0.6451	44,468,014
Employment	15.8055	1,090

Source: Consultant's computations based on RIMS II input-output model

In interpreting the foregoing findings, it is important to note that the analysis assumes that all of the expenditures made during the construction period remain within the Long Island economy and are subject to the multiplier process. In reality, some leakage generally occurs as when construction workers spend their earnings off Long Island or when construction supplies and equipment are purchased from firms located off Long Island. To the extent that such leakage occurs, the multiplier effect will be commensurately reduced.

The Town of Riverhead will benefit directly from the construction of this project from the building permit fees that will be paid to the Town by the developer. This has become an issue in the Town of Riverhead, where housing starts have fallen to their lowest level in 12 years. While Riverhead's population is increasing, the number of new housing starts last year decreased, according to 2006 building department statistics. The building department issued 119 permits for new homes in 2006 as compared with 190 in 2005. Historically, almost 400 new home permits were issued annually. Permits issued for new condominiums have also declined markedly. These declines reflect a combination of economic conditions and rezoning within the town. Given this situation, the building permit fees associated with the Shop's at Riverhead should be a welcome source of revenues to the town.

Permanent Job Creation

The project will also have demonstrative positive effects on the local economy when all retail facilities are fully occupied and operational. This section estimates the number of permanent jobs likely to be created at the Shops at Riverhead and discusses the secondary economic impact of these jobs on the local economy.

The proposed Shops at Riverhead will employ a significant number of workers, most of whom will be drawn from the immediate community. Industry sources estimate that one job is created for every 350 square feet of general retail space. One job is also created for every 300 square feet of restaurant space and for every 400 square feet devoted to banking. Using these yardsticks, more than 1,400 full-time equivalent jobs could be created at the Shops at Riverhead.

Table 39 - Estimated Permanent Employment

Proposed Facility	Proposed Square Feet	Estimated FTE Jobs/Square Foot	Estimated Employment
Wholesale Club	152,378	1/350	435
Toy Store	61,951	1/350	177
Department Store	93,171	1/350	266
Furniture Store	57,906	1/350	165
Pet Store	18,919	1/350	54
Home Goods	23,515	1/350	67
Home Goods	38,164	1/350	109
Craft Store	18,800	1/350	54
Electronics Store	19,131	1/350	55
Bank	3,500	1/350	9
Restaurant	5,213	1/300	17
Restaurant	6,961	1/300	23
Total	499,609		1,432

The wages associated with these jobs will provide a significant boost to the local economy. According to the New York State Labor Department, retail workers and those employed in restaurants and banks earned the following wages as of the second quarter of 2006.

Table 40 – Average Annual Wage for Selected Lines of Retailing on Long Island, First Quarter, 2006

Industry	Quarterly Wage, Second Quarter 2006	Estimated Annual Wage, 2006
Furniture & Home Furnishings Stores	\$7,983	\$31,932
Electronics & Appliance Stores	9,520	38,080
Food & Beverage Stores	6,003	24,012
Health & Personal Care Stores	7,358	29,432
Clothing and Accessories Stores	4,943	19,772
Sporting Goods/Hobby/Book/Music Stores	5,056	20,224
General Merchandise Stores	5,287	21,148
Miscellaneous Store Retailers	5,897	23,588
Food Services & Drinking Places	4,452	17,808
Banking	15,006	60,024

Source: New York State Labor Department

These wages were applied to projected employment at the Shops at Riverhead to derive estimated payrolls. These computations resulted in a total estimated annual payroll of more than \$35 million in current dollars for the Shops at Riverhead.

Table 41 - Computation of Estimated Annual Payrolls for The Shops at Riverhead

Proposed Facility	Estimated Employment	Estimated Annual Wage Per Employee	Total Annual Payrolls
Wholesale Club	435	\$21,148	\$9,207,114
Toy Store	177	20,224	3,579,706
Department Store	266	31,932	5,629,658
Furniture Store	165	19,772	5,283,013
Pet Store	54	23,588	1,275,032
Home Goods	67	23,588	2,145,374
Home Goods	109	23,588	3,481,865
Craft Store	54	20,224	1,086,318
Electronics Store	55	23,588	2,081,453
Bank	9	38,080	525,210
Restaurant	17	17,808	309,444
Restaurant	23	17,808	413,205
Total	1,432		35,017,392

Direct jobs and payrolls are only the “tip of the iceberg” in terms of their overall impact on the local economy. Retailers at the proposed shopping center purchase goods and services from other local businesses thereby stimulating additional local business activity. Employees at the proposed retail center also spend their wages locally. These expenditures are subject to the multiplier process. In the following analysis, the relevant multipliers for retail trade, banking and restaurants were applied to the foregoing jobs and payrolls.

Secondary Employment Impact

The employment multiplier for retail trade is 1.5522. This means that for every direct retail job at the Shops at Riverhead, 0.55 additional jobs are created throughout the local economy. The employment multiplier for banking is 2.7670. This means that for every direct banking job, 1.77 additional jobs are created throughout the local economy. The employment multiplier for food services and drinking places (restaurants) is 1.2821. This means that for every direct restaurant job, 0.28 additional jobs are created throughout the local economy. Given these multipliers, the 1,432 estimated permanent jobs at The Shop’s at Riverhead are likely to support a total of 2,222 secondary jobs throughout the local economy. That is, the 1,490 direct jobs will support another 791 indirect jobs in a variety of local industries.

Table 42 - The Direct and Indirect Employment Impact of The Shops at Riverhead On the Local Economy

Industry	Employment Multiplier	Direct Employment	Direct & Indirect Employment	Indirect Employment
Retail Trade	1.5522	1,383	2,146	764
Banking	2.7670	9	25	16
Food Services & Drinking Places	1.2821	40	51	11
Total		1,432	2,222	791

Source: Consultant's estimates based on RIMS II input-output model

Secondary Earnings Impact

The earnings multipliers are 1.8852 for retail trade, 2.0293 for banking and 1.6853 for food services. This means that for every dollar of retail wages, another 88 cents in payroll spending is created throughout the local economy. For every dollar of bank wages, another \$1.03 in payroll spending is created throughout the local economy. For every dollar of wages in food services, another 69 cents in payroll spending is created throughout the local economy. Given these multipliers, the approximately \$35 million in direct payrolls at the Shop's at Riverhead will support more than almost \$31 million in indirect payrolls throughout the local economy.

Table 43 -The Direct and Indirect Earnings Impact of The Shops at Riverhead On the Local Economy

Industry	Earnings Multiplier	Direct Earnings	Direct & Indirect Earnings	Indirect Earnings
Retail Trade	1.8852	\$33,769,533	63,662,324	29,892,791
Banking	2.0293	525,210	1,065,809	540,599
Food Services & Drinking Places	1.6853	722,649	1,217,880	495,231
Total		35,017,392	65,946,012	30,928,620

Source: Consultant's estimates based on RIMS II input-output model

4.7.3 Estimated Real Property Taxes Generated by The Shops at Riverhead

In the following analysis, the income approach has been used to estimate the real property taxes likely to be generated by the proposed Shops at Riverhead. The following steps were taken to estimate these taxes:

- Estimated rents were first calculated to derive gross income;
- Adjustments were made for operating expenses and potential vacancies to derive net income;
- The market and assessed values of the project were then estimated;
- The appropriate tax rate was applied to the assessed value of the project; and
- It was assumed that the two anchor tenants, the wholesale club and department store, would pay a rent of \$17 a square foot and that remaining tenants would pay \$25 a square foot in rent. These assumptions result in gross rents of \$10,525,833 annually.

Table 44 - Computation of Gross Rents for The Shops at Riverhead

Description	Square Footage Proposed	Estimated Rent Per Square Foot	Total Gross Rent
Wholesale Club	152,378	\$17	\$2,590,426
Toy Store	61,951	25	1,548,775
Department Store	93,171	17	1,583,907
Furniture Store	57,906	17	1,447,650
Pet Store	18,919	25	472,975
Home Goods	23,515	25	587,875
Home Goods	38,164	25	954,100
Craft Store	18,800	25	470,000
Electronics Store	19,131	25	478,275
Bank	3,500	25	87,500
Restaurant	5,213	25	130,325
Restaurant	6,961	25	174,025
Total	499,609		10,525,833

The analysis assumes a seven percent vacancy rate and a 20 percent expense ratio resulting in a net income of \$7,683,858. Using a .10 capitalization rate results in a market value of \$76,838,581. Applying the current Town of Riverhead equalization rate of 11.54 percent results in an assessed value of \$8,867,172. Applying the current town and school tax rate of \$137.258 per \$1,000 of assessed value results in total annual property taxes of \$1,217,090.

Table 45 - Estimated Real Property Tax Revenues From The Shops at Riverhead

Estimated Gross Income	\$10,525,833
Vacancy Rate	7%
Expense Ratio	20%
Net Income	\$7,683,858
Capitalization Rate	0.1
Estimated Market Value	\$76,838,581
Current Equalization Rate	11.54%
Assessed Value	\$8,867,172
Current Tax	\$137.258 per \$1,000 of Assessed Value
Estimated Real Property Taxes	\$1,217,090

Source: Consultant's estimates based on information from the Town of Riverhead Tax Receiver & Assessor

Allocation of Property Tax Revenues to Affected Taxing Districts

The foregoing tax revenues were allocated to all affected tax districts based on the most recent tax bill for the property. The allocation formula and distribution of taxes is shown below. Riverhead Central School District #2 would receive more than \$720,000 annually in additional real property taxes from the Shop's at Riverhead. Moreover, the district will not incur any additional costs in connection with the development since no residential housing is being proposed. The Town of Riverhead would receive more than \$260,000 in additional real property taxes annually.

Table 46 - Allocation of Potential Tax Revenues to Affected Taxing Districts

Taxing District	Percent of Levy	Estimated Tax Revenue
Riverhead CSD #2	59.2	\$720,517
Riverhead Free Library	1.9	23,125
Suffolk County Tax	1.6	19,473
Riverhead Town Tax	21.4	260,457
Highway	4.3	52,335
NYS Real Property Tax Law	1.2	14,605
Riverhead Ambulance District	0.8	9,737
Riverhead Fire Zone 1	3.8	46,249
Light District	0.6	7,303
RHD Comm Sewer Ext	4.7	57,203
Riverhead Water	0.5	6,085
Total	100.0	1,217,090

Source: Consultant's estimates based on most recent tax bill.

4.7.4 Costs to Service the Retail Center vs. Additional Property Taxes Received

In order to ascertain any additional costs that would be incurred to provide police, ambulance and fire services to the Shops at Riverhead, Freudenthal and Elkowitz Consulting Group, Inc. recently submitted letters of inquiry to the Riverhead Town Police and to the local fire and ambulance districts requesting information about such costs. Their replies are summarized below:

Mr. Joseph Gadzinski, Chief of the Riverhead Volunteer Ambulance Corp. responded to the letter of inquiry. The Corp. has 75 members at present. They responded to more than 2,500 calls in 2006. The Central Barn is located on Osborne Avenue and the response time is approximately 2 minutes. At present there are 4 ALS Ambulances, 1 ALS First responder, 1 BLS First responder and a Chiefs' BLS responder. On average, about one-quarter of their calls come from commercial sites. They usually transport to Peconic Bay Medical Center in Riverhead. The Ambulance District will receive an estimated \$10,154 in additional real property taxes annually from the Shops at Riverhead, which should compensate them for any additional resources needed to service this facility.

Several telephone calls were also placed to Mr. Edward Carey, the Chief of the Riverhead Fire Department in follow-up to the letter sent by Freudenthal and Elkowitz. He was unable to estimate the additional costs that could be incurred in servicing the proposed shopping center. Riverhead Fire Zone No. 1 would receive an estimated \$48,232 in additional property tax revenues annually from The Shops at Riverhead.

Mr. David J. Hergemiller, Chief of the Riverhead Town Police did not respond to the letters from Freudenthal and Elkowitz or to repeated follow-up phone calls concerning the potential additional cost of servicing The Shops at Riverhead.

4.7.5 Acres of Farmland Preserved in the Town of Riverhead

According to the project engineer, the TDR's required for this project are based on the total site area, which is 1,809,900.46 square feet (41.55 acres). The floor area allowed by right is 20 percent of this square footage, which equals 361,980.09 square feet. The proposed gross floor area of the project is 499,609 square feet, which is 137,629 square feet above what is allowed by right. One TDR is needed for each 1,500 square feet over what is allowed by right. Dividing 137,629 by 1,500 indicates that 92 TDRs will be needed. Since each TDR preserves 43,560 square feet (one acre) of farmland, 92 TDRs would preserve approximately 92 acres of farmland within the Town of Riverhead. These findings are summarized in the following computations.

Table 47 - Computation of Required TDRs for the Shops at Riverhead

Site Acreage	1,809,900.46 square feet
Maximum Footprint Allowed Without TDRs	361,980.09 square feet
Excess Square Feet in Proposed Project	137,629 square feet
Square Feet Equivalent of One TDR	1,500
Estimated Number of TDRs Required For Proposed Footprint	92
Estimated Number of Acres of Farmland Preserved	92

Source: Consultants computations based on conversations with Mr. Richard Hanley.

Crop production remains an important industry in Suffolk County. As of the second quarter of 2006, 2,389 workers were employed in crop production in Suffolk County according to the New York State Labor Department. The aggregate payrolls of these workers exceeded \$19.9 million. At an estimated 4.3 jobs per acre in crop production, preservation of an estimated 92 acres would result in the preservation of some 396 agricultural jobs.

The proposed shopping center also forecloses the possibility of constructing 92 residential units elsewhere in the Town. If these units were constructed in the sending zone, they could overburden existing roads, schools and public services and require major capital investments in new infrastructure. The development of the subject property at the density proposed and the associated protection of open space in areas of the Town identified as sending areas will protect those areas in which development could have significantly more adverse impacts on the existing infrastructure. It will also prevent urban sprawl.

The preservation of farmland has an ancillary benefit in that it helps to preserve the ambience of the East End of Long Island in support of tourism. Tourism is a major industry on Long Island and much of it is concentrated in eastern Suffolk. According to the New York State Labor Department, Long Island's hotel industry employs almost 6,000 workers and generates total payrolls in excess of \$38 million. In the aggregate, hotels and related services, including food services, employ more than 75,000 persons and generate almost \$350 million in payrolls on Long Island.

4.7.6 Summary

As noted above the proposed action would create over 1,000 construction jobs and close to 1,500 permanent jobs. In addition, the purchase of TDRs to permit the construction of the proposed retail complex would allow the preservation of 92 acres of farmland, which would ultimately preserve approximately 400 agricultural jobs. Moreover, the development of The Shops at Riverhead would generate approximately \$1.22 million in annual property tax revenue.

The Riverhead community lacks the full range of retail establishments characteristic of a well-served community. The Shops at Riverhead would fill this gap. Only 18 percent of the proposed retail square footage will be devoted to clothing and accessories. The proposed Costco will meet the strong demand for warehouse shopping in the community. Circuit City will serve the red-hot market for electronics and appliances. Retailers such as Raymour & Flanigan and Bed, Bath & Beyond will serve the growing market for home related and retailers such as Vitamin Shoppe will cater to the underserved market for health care products.

Overall, there appears to be sufficient purchasing power both locally and throughout Long Island to support the retail activities proposed for The Shops at Riverhead.

4.8 COMMUNITY FACILITIES AND SERVICES

Education

As previously indicated, the subject site is within the boundaries of the Riverhead Central School District. Section 4.7.3 of this DEIS indicated that approximately \$1,217,090 would be generated by the subject site in tax revenue under the proposed action. Of this revenue, it is estimated that the Riverhead CSD would receive approximately \$720,517 annually in additional real property taxes from the Shops at Riverhead. As the subject site would be redeveloped as a destination retail center, no school-aged children would be generated on-site. Thus, the implementation of the proposed action would not result in any additional costs associated with providing educational services to school-aged children generated on-site, and the school district would experience a direct net benefit associated with the proposed action.

Fire Protection

Correspondence was forwarded to the Chief of the Department, Edward Carey, on December 19, 2006, advising of the proposed project and requesting information on the Department (see Appendix M). A response to the written correspondence has not been received. In addition, several telephone calls were also placed to Chief Carey, to follow-up the correspondence sent by Freudenthal and Elkowitz. Chief Carey was unable to estimate the additional costs that could be incurred in servicing the proposed shopping center. However, it is believed that the estimated \$46,249 in additional property tax revenues that the Fire Department would receive would partially, if not completely, compensate the Department for the cost of servicing the proposed destination retail center.

In addition, buildings would be built to the New York State Building and Fire Codes, and thus, would incorporate the latest construction and fire protection techniques, materials and equipment, including sprinklers.

Ambulance Service

As indicated in Section 3.8 of this DEIS, the subject property is situated within the service area of the Riverhead Town Volunteer Ambulance Corps. Correspondence was forwarded to Ronald Rowe, President of the Ambulance Corps, on December 19, 2006, advising of the proposed project and requesting information on the Corps (see Appendix M). As noted in Section 3.8, a response from Chief Joseph Gadizinski of the Ambulance Corps, dated January 22, 2007, indicates that the Ambulance Corps currently has 75 members and responded to 2,500 calls in 2006.

Section 4.7.3 of this DEIS indicates that the Ambulance District would receive an estimated \$9,737 in additional real property taxes annually from the Shops at Riverhead, which should compensate for any additional resources needed to service the proposed retail center.

Police Protection

As indicated in Section 3.8 of this DEIS, the subject property is under the jurisdiction of the Riverhead Town Police. Correspondence was forwarded to Chief of Police David J. Hergemiller on December 19, 2006, advising of the proposed project and requesting information relative to service availability (see Appendix M). A response to such correspondence has not yet been received. In addition, the Town Police Department did not respond to repeated follow-up phone calls.

According to Greenberg Farrow, a private security patrol will traverse the proposed retail center both during and after operating hours. Furthermore, each individual store may provide additional security measures. In addition, a fence would be installed around the perimeter of the property, to the north.

According to information presented in Section 4.7.3 of this DEIS, the Town of Riverhead would receive approximately \$260,457 in additional tax revenue, a portion of which would be allocated to the Town of Riverhead Police Department. It is anticipated that this additional tax revenue would help offset costs incurred by the Police Department to service the proposed development.

Water Supply

As indicated in Section 4.2.4 of this DEIS, the total domestic water use demand under the proposed action would be approximately 24,163 gpd. Additionally, irrigation demand is estimated at approximately 24,000 gpd during the growing season.

In correspondence dated March 20, 2007, the Superintendent of the Riverhead Water District indicated that the subject property is “within the boundaries of the Riverhead Water District and can be served by same” (see Appendix P). As such, it is not anticipated that the proposed action would result in adverse impacts to the Riverhead Water District.

Solid Waste

Using solid waste generation factors from Environmental Engineering Fifth Edition⁴ the anticipated solid waste generation for the subject site was calculated as follows:

Retail Space (excluding Costco):

- Using the solid waste generation figure for retail and service facility
- $335,057 \text{ sf} \times 13 \text{ lbs per day}/1,000 \text{ sf} = 4,356\pm \text{ lbs per day} (61.0\pm \text{ tons/month})$

Costco:

- Using the solid waste generation figure for wholesale and retail facility
- $152,378 \text{ sf} \times 1.2 \text{ lbs per day}/1,000 \text{ sf} = 183\pm \text{ lbs per day} (2.6\pm \text{ tons/month})$

⁴ Salvato, JA., N.L. Nemerow, and F.J. Agardy. 2003. *Environmental Engineering - Fifth Edition*. John Wiley & Sons, Inc. page 768.

Restaurants:

- Using the solid waste generation figure for restaurant
- 318 seats (meals) – assuming six meals served at each seat/day
- 1,908 meals x 2 lbs per meal = 3,816± lbs per day (58.0± tons/month)

As such, the total solid waste generation for the subject site would be approximately 8,355 lbs/day (121.6± tons/month). Under the proposed action, solid waste would be removed from the subject site by a licensed carter and disposed of at an appropriate facility. It is not expected that the additional solid waste would have a significant adverse impact on local or regional solid waste management plans or resources.

4.9 VISUAL AND CULTURAL RESOURCES

4.9.1 Visual Resources

Several aerial photographs, renderings and building elevations were prepared by Greenberg Farrow illustrating how the proposed development would blend with the existing development in the area (see Appendix O). The aerial photographs depict the site looking northwest, across Route 58, looking northeast, across Route 58, and looking south from the residential subdivision to the north. The elevation depicts a typical view of stores proposed for the eastern portion of the site. The building elevations depict the front façade of each of the proposed retail establishments.

The proposed development has limited frontage on Route 58, the only public roadway on which the property is located. Therefore, only a portion of the development would be visible from the roadway. The views to the subject site from Route 58 would be of the two small buildings at the front of the site and of the buildings located on the eastern portion of the site. These would be visible through the entry drive. Vegetation would be preserved and supplemented along the perimeter of the property, especially at the northern property boundary, adjacent to the residential development (see Appendix O). As depicted on the aerial photographs prepared by Greenberg Farrow, existing vegetation on the residential property to the north also will assist in screening the proposed development (see Appendix O). Screening vegetation would be planted along all the other property lines in order to minimize the views into the site from the surrounding properties. A dense vegetated border exists along the eastern property boundary as can be seen in the aerial photographs (see Appendix O). This vegetation, especially that situated within the residential property to the east, will assist in screening the proposed development.

The aerial photographs illustrate that the scale of the proposed retail buildings would blend with the scale of the non-residential buildings already existing along Route 58.

The building elevations depict the front facades of all of the proposed buildings comprising The Shops at Riverhead (the Costco elevations are shown from all four sides). The elevations illustrate the varying facades of all the proposed establishments and how they work together to comprise a cohesive design as far as size and scale. The rendering, depicting several of the proposed retail establishments on the east side of the site, reinforces this idea of differing but complementary façade designs. The *Landscape Plan* in Appendix A of this DEIS also illustrate how cohesive landscaping can bring together the varying elements within the proposed retail center.

Overall, the proposed project visually conforms to the more-recent development that has occurred along Route 58. The size and scale of the proposed buildings are such that they will blend with existing buildings in the area. The existing vegetation and proposed supplemental screening vegetation along the rear and side yards will assist in blocking views into the site from neighboring properties as illustrated in the aerial photographs in Appendix O of this DEIS. Therefore, the proposed project is not expected to have a significant adverse visual impact.

Proposed Lighting

The proposed development would be subject to Article XLV *Outdoor Lighting* of the Town of Riverhead Zoning Code. According to §108-246. *Purpose*, “the general purpose of this article is to protect and promote the public health, safety and welfare, the quality of life, and the ability to view the night sky, by establishing regulations and a process for review of exterior lighting. This article establishes standards for exterior lighting in order to accomplish the following:

- A. To provide safe roadways for motorists, cyclists and pedestrians;
- B. To protect against direct glare and excessive lighting;
- C. To ensure that sufficient lighting can be provided where needed to promote safety and security;
- D. To prevent light trespass in all areas of the Town;
- E. To protect and reclaim the ability to view the night sky;
- F. To allow for flexibility in the service of lighting fixtures;
- G. To provide lighting guidelines;

H. To provide assistance to property owners and occupants in bringing nonconforming lighting into conformance with this article.”

The applicant has prepared a *Lighting Plan* (see Appendix A) that meets the requirements of the aforementioned Article. The *Lighting Plan* includes four different types of luminaries – three pulse-start, metal halide flat glass pole-mounted types of 25 feet in height distributed throughout the parking areas, and one metal halide wall-mounted type (see Appendix A). The *Lighting Plan* shows the proposed location of all luminaries as well as the details regarding quantities, types, lumens and foot candles.

The *Lighting Plan* also illustrates the photometrics based upon the placement of the specific luminaries. The plans shows that 30 feet from the rear property line, adjacent to the residences to the north, lighting levels range from 0.0 to 0.8 foot candle. Along the western property line (industrial property) the levels range from 0.0 to 4.4 foot candles. The lighting level along the eastern property (adjacent to the vacant 50-foot-wide easement, lighting levels range from 0.0 to 0.3 foot candle. Finally, lighting levels along the property frontage of Route 58 range from 0.1 to 5.6 foot candles. These higher lighting levels are located near the property entrance.

The applicant respectfully submits that the proposed *Lighting Plan* meets the requirements of Article XLV of the Town Code and provides a safe environment for employees and visitors to the site, while avoiding the potential for light spill over or intrusion.

4.9.2 Archaeological and Historical Resources

Both the original Tracker Phase IA and Phase IB and Extended Phase IB archaeological reports indicate that no prehistoric or historic artifacts or features were found on the site. The reports recommended that no further archaeological investigations are warranted.

In addition, as indicated in Section 3.9, the OPRHP noted that based upon the original Phase IA and Phase IB reports conducted by Tracker, there would be no impact to cultural resources listed or eligible for listing on the State and National Register of Historic Places.

Therefore, the proposed action would have no significant adverse impact on archaeological or historical resources.

5.0 PROPOSED MITIGATION MEASURES

5.1 SUBSURFACE CONDITIONS, SOILS AND TOPOGRAPHY

Subsurface Conditions

The required mitigation of this property, prior to development, would be limited based on the information provided by the previous site investigations and regulatory agencies, as discussed in Sections 3.1.1 and 4.1.1 of this DEIS.

As noted in Section 4.1.1, the most recent groundwater monitoring well results were reviewed by the SCDHS and the NYSDEC to determine if the Freon plume has been successfully remediated. According to a SCDHS letter, dated January 29, 2004, the results were satisfactory, and Malcolm Pirnie's request to abandon the remaining wells was approved. The wells were abandoned along with the remediation system in 2004. Therefore, it is assumed that mitigation of the groundwater plume is complete.

Similarly, closure of the on-site underground structures was granted by the SCDHS in late 2003. Mitigation of the existing, identified underground on-site structures can be considered complete. If during construction, any additional previously unidentified underground structures are encountered they will be properly delineated and sampled.

All drums and debris along with mounds of soil will also be removed and disposed of in accordance with applicable regulations. If the drums contain liquids, they will be tested prior to disposal. In addition, all drums will be inspected for damage and leakage.

A site-specific HASP, along with a site-specific MHP have been prepared for the subject property. Both of these documents address not only the previously-identified contaminants at the subject property, but also provide the proper protocol for encountering previously-unidentified contaminants and/or underground tanks and structures.

Soils and Topography

While no significant adverse impacts to soils or topography have been identified, the following mitigation measures would be implemented to ensure that soils and topographic impacts are minimized.

A SWPPP entitled *Soil Erosion & Sediment Control Plan* has been prepared and is included in Appendix A of this DEIS. This plan was prepared to fulfill the requirements of the Phase II stormwater regulations. The *Soil Erosion & Sediment Control Plan* contains measures such as silt fence installation, a stabilized construction entrance, haybale protection, inlet protection and similar measures to minimize erosion and prevent sediment from being transported off the site (see further discussion in Section 4.2 of this DEIS). Details of the proposed sediment traps and typical retaining walls with silt fencing, among other details and notes are contained in the *Soil Erosion & Sediment Control Plan* in Appendix A of this DEIS. Methods and materials to be employed in the installation and maintenance of the erosion control measures would conform to the *New York Guidelines for Urban Erosion and Sediment Control*. Specific measures are outlined below:

- Proposed temporary sediment basins and a temporary drainage swale, if necessary, would be installed in the center of the site to prevent sediment runoff from the property;
- A construction vehicle storage/maintenance pad would be placed in the center of the site to limit the amount of vehicle movement on and off the site on a daily basis;

- Specific notes (narrative) describing the planned erosion and sediment control practices, including sediment basins, temporary construction access points, temporary block and crushed rock inlet protection, temporary diversions, the use of level spreaders, tree preservation and protection, land grading, clearing and grubbing, and temporary sediment traps and scour holes is contained in the Soil Erosion & Sediment Control Plan Notes (see Appendix A). This plan also discusses the vehicle storage/maintenance area and spill containment plan, the overall construction schedule, the maintenance schedule for the erosion control measures and the planting schedule;
- Proper maintenance of erosion control measures would be performed by periodic inspection and after heavy or prolonged storm events. Maintenance measures include, but are not limited to, cleaning of sediment basins or traps, cleaning or repair of sediment barriers, cleaning and repair of berms and diversions and cleaning and repair of inlet protection;
- Appropriate means, such as spraying of exposed soils and the use of tarpaulins or the equivalent to cover exposed materials, would be used to control fugitive dust;
- A stabilized construction entrance would be maintained to prevent soil and loose debris from being tracked onto local roads. The construction entrance would be maintained until the site is permanently stabilized. The Soil Erosion & Sediment Control Plan (see Appendix A of this DEIS) contains details and sections of both the entrance pad and the wheel cleaning pad; and
- Sediment barriers, erosion control measures and tree protection measures would remain in place until disturbed areas are permanently stabilized. After permanent stabilization, paved areas would be cleaned and drainage systems cleaned and flushed, as necessary.

5.2 WATER RESOURCES

No significant adverse impacts to water resources were identified as part of the analysis presented in Section 4.2. In order to protect the groundwater quality and the resources of the Central Suffolk SGPA, the development would be connected to the municipal water and sewer system. Stormwater generated on the site would be collected and recharged in compliance with Town standards. A detailed *Soil Erosion & Sediment Control Plan* has been prepared for the proposed development. The proposed project would comply with the Phase II Stormwater Regulations. Finally, the proposed project would adhere to the recommendations set forth in the *208 Study* and the *NURP Study*. Implementation of these measures would assist in ensuring that potential impacts to water resources are minimized.

5.3 ECOLOGY

No significant adverse impacts to plants and animals have been identified. However, an extensive landscaping plan would be implemented.

5.4 ZONING, LAND USE AND COMMUNITY CHARACTER

As the proposed project exceeds the maximum building coverage and FAR permitted by the DRC zoning district, the purchase of TDRs would mitigate the increased density on the subject site, while protecting approximately 92 acres of open space/farmland within an APZ sending district. Not only would this mitigate the increased density, it would fulfill the purpose and intent of the DRC zoning district (§108.257), which encourages the use of such TDRs to preserve agricultural lands while increasing development yield on appropriately zoned properties, such as the case with the subject property. In addition, the purchase of 92 TDRs would foreclose the opportunity for the construction of the equivalent number of residential units in the sending district, thus minimizing the impacts of such residential units on community facilities and services as well as other Town resources.

5.5 TRANSPORTATION

As discussed in the Build scenario (see Section 4.5 of this DEIS), CR 58 currently has only one lane in the eastbound direction from Kroemer Avenue to Mill Road. This one lane eastbound stretch is presently becoming a bottleneck, and will only become more so, with or without the proposed project, as the No Build analysis confirms. To mitigate this condition, the developer proposes to contribute to the construction cost of a second eastbound lane from Kroemer Avenue to the southwest corner of CR 58 and Mill Road. A second eastbound left turn lane at the intersection would be part of this work.

At the intersection of the site access drive with CR 58, a new signalized intersection will be constructed. A westbound right turn lane leading into the site will also be constructed along the site frontage on CR 58.

The new signal at the site entrance will be coordinated, using wireless equipment, with the signals along CR 58 at Tanger Mall Drive, Kroemer Avenue, the signal soon to be constructed at Commerce Drive/Gatewood, and Mill Road

5.6 AIR QUALITY AND NOISE

Although no significant adverse environmental impacts upon air quality were identified, a typical dust suppression plan would be employed during the construction phase of the project.

The overall operation of The Shops at Riverhead project will have minor impacts on the local and regional air quality. As such, additional mitigation measures are not required based on the available information.

Although no significant noise impacts are anticipated, other than occasional heavy delivery truck movement, the proposed action involves the construction of a six-foot fence with associated evergreen vegetation along parts of the perimeter of the site. This fence would result in a five dBA insertion loss along the northern residential property line and less than one dBA insertion loss at the residential property line to the east. In addition, the configuration of proposed loading docks would reduce the noise level of truck back-up alarms. Finally, loading and unloading is subject to the regulations in Section 81-5.F of the Town Code, which regulates the hours of such activity to between 8:00 PM and 7:00 AM of the next day.

5.7 SOCIOECONOMICS

According to the *Economic Impact Analysis*, no significant adverse environmental impacts would occur due to the implementation of the proposed project.

5.8 COMMUNITY FACILITIES AND SERVICES

As no significant adverse environmental impacts were identified, no mitigation measures are proposed. However, the proposed project would contribute over \$720,500, annually to the Riverhead CSD, as well as an additional \$496,573± to other Town and County agencies and special districts.

In addition, buildings would be built to the New York State Building and Fire Codes, and thus, would incorporate the latest construction requirements.

A private security patrol would be provided, which would traverse the proposed retail center both during and after operating hours. In addition, a six-foot-high fence will be installed to assist in providing security to the neighboring residential properties.

5.9 VISUAL AND CULTURAL RESOURCES

Additional vegetative screening and a six-foot-high fence will be placed along the rear perimeter of the property in order to help screen the proposed project from the neighboring residential development.

As no significant adverse impacts to archaeological or historical resources were identified, no mitigation measures are proposed.

6.0 UNAVOIDABLE ADVERSE EFFECTS

6.1 SHORT-TERM IMPACTS

There will be several construction-related impacts associated with the construction of the infrastructure and the commercial buildings that cannot be completely mitigated. These impacts are associated with the site preparation and development, including clearing and grading, excavation of foundations and installation of utilities. It is anticipated that these impacts will cease upon completion of the construction phase of the project. Specific impacts are identified below.

- Soils will be disturbed by grading, excavation and mounding activities during site development;
- Despite the use of extensive and strategically-placed erosion and sediment control measures, minor occurrences of erosion may occur;
- There is the potential for minor releases of air contaminants that will occur from construction equipment and emissions of fugitive dust during dry periods, although fugitive dust will, for the most part, be controlled through the use of wetting and covering exposed areas with tarpaulins or the equivalent;
- Operation of construction equipment, trucks and construction worker vehicles may temporarily impact traffic in the area of the project site;
- Wildlife would leave the site during the construction period, but some are expected to return upon completion of the construction phase; and
- Increases in noise levels at the site boundaries may result from construction activities.

6.2 LONG-TERM IMPACTS

Long-term impacts associated with project implementation have been identified. Mitigation measures have been proposed to reduce or eliminate most of these long-term adverse impacts. Those adverse long-term impacts which cannot be fully mitigated are set forth below, namely:

- The addition of impermeable surfaces to the parcel will increase runoff on the project site. However, it will be contained and recharged within the property boundaries, to meet the requirements of the Town of Riverhead and the Phase II Regulations;
- Development will increase the amount of water usage and sewage generation, although sewage would be disposed of via connection to the Riverhead Sewer District and water would be supplied via connection to the Riverhead Water District;
- There will be an increase in solid waste generated at the site;
- There would be an increased demand for community services, although the proposed project would generate property taxes to help offset the cost of services;
- Development of the site will preclude its use for other purposes; and
- Vehicles will be added to the surrounding roadways.

7.0 ALTERNATIVES AND THEIR IMPACTS

Pursuant to 6 NYCRR Part 617, the DEIS must contain a description and evaluation of reasonable alternatives to the proposed action. Thus, this section of the DEIS analyzes the impacts of the following alternatives and quantitatively and qualitatively compare these impacts to those associated with implementation of the proposed action, based upon the specific issues outlined above:

- SEQRA-mandated No-Action Alternative (site remains as it currently exists);
- Alternative Site Plan (“By-Right”); and
- Alternative Site Plan (“All Retail”).

Table 48 provides a comparison of the quantitative impacts of the proposed action and the alternatives examined.

Table 48 – Comparison of Quantitative Impacts for Alternatives

Parameter	Proposed Action	No Action	Alternative Site Plan (“By-Right”)	Alternative Site Plan (“All Retail”)
Type of Development	Retail/Restaurant	None	Retail	Retail
Gross Floor Area in Square Feet	499,609	0	406,423	514,580
Building Coverage in Square Feet	480,609		383,039	496,053
Potable Water Use/Sewage Generation (gpd)	24,163	0	12,193	15,438
TDR Credits	92	0	30	102
Permanent Jobs	1,432	0	1,093	1,469
Annual Property Taxes	\$1,217,090	\$32,888	\$738,501	\$961,828
Solid Waste (tons per month)	121.6	0	53	74.4
Trip Generation				
AM Peak Hour	477	0	364	480
PM Peak Hour	2,063	0	1,665	2,089
Sat. Peak Hour	2,915	0	2,400	2,961

7.1 NO-ACTION ALTERNATIVE

The no-action alternative involves leaving the site in its present condition including the remnants of the former use as well as wooded areas. The property is privately-owned and commercially-zoned (as discussed in Section 7.2). Thus, the no-action alternative does not meet the objectives of the project sponsor and is not viewed as a feasible alternative by the applicant.

Despite this alternative not being feasible for the applicant, SEQRA requires that this option be evaluated in the DEIS. Therefore, the following is a description of the anticipated impacts associated with the no-action alternative.

7.1.1 Subsurface Conditions, Soils and Topography

Under the no-action alternative, the impact to subsurface conditions, soils and topography would not change from their present state. As such, no impacts to soils and topography would result from the implementation of this alternative.

7.1.2 Water Resources

Under the no-action alternative, the impact to water resources would remain the same as they are under the existing condition. Stormwater would continue to run off or recharge directly to the ground, as there appear to be no stormwater structures on the site, with the exception of the remnant of a former recharge basin. There will be no change in the impact to the Central Suffolk SGPA.

7.1.3 Ecology

Under the no-action alternative, there would be no impact to the ecological resources on or adjacent to the site. No additional clearing would take place, and no additional planting would be undertaken.

7.1.4 Zoning, Land Use and Community Character

The land use of the site would remain as it currently exists. The site would remain with the remnants of the former industrial development. The zoning of the property would not change, and the property would remain as privately-held, commercially-zoned land with the potential for redevelopment under current zoning (see Section 7.2, below). The no-action alternative would not fulfill the goals of the Riverhead Zoning Code and the *Town of Riverhead Comprehensive Plan*.

7.1.5 Transportation

The no-action alternative would produce no project-generated traffic, and thus would not impact the surrounding roadway network. Future traffic volumes and conditions on area roadways would be those of the No Build scenario.

7.1.6 Air Quality and Noise

As no changes to the traffic would occur, and as no excavation or any other site changes would occur, no air quality or noise impacts would result.

7.1.7 Socioeconomics

The property would continue to contribute \$32,888 annually in property taxes. No new tax generation would occur. No jobs (either construction or permanent) would be created with the no-action alternative.

7.1.8 Community Facilities and Services

The level of community services provided to the subject property would remain. No school-aged children currently inhabit the site. Police and fire protection services would be provided to the site, as needed. The property would have no water demand. The property would continue to generate annual property taxes of \$32,888, of which approximately \$20,113 would go to the Riverhead CSD.

7.1.9 Visual and Cultural Resources

The aesthetic resources of the subject property would remain unchanged with the no-action alternative. Views would remain limited, however, remnants of the former use would be visible from Route 58. Views toward the site would remain and the appearance of the property would be unchanged. There would be no impact to historic and/or archaeological resources under the no-action alternative, as no disturbance to the property would occur.

7.2 ALTERNATIVE SITE PLAN (“BY-RIGHT”)

The Alternative Site Plan (“By-Right”) encompasses development of the site under the DRC zoning, with the use of TDRs, but without the relaxation of various zoning requirements (i.e., impervious surface area, contiguous landscaping, parking stall size) requested under the proposed action (see Appendix Q). This plan contains retail/bank use solely; no restaurants are proposed. The development would consist of eight buildings comprising a total of 406,423 square feet of gross floor area, with a building coverage of 383,039 square feet. Access to the site would be from Route 58. In order to develop the subject property as shown on the Alternative Site Plan (“By Right”), 29.63 TDR credits would be required, based upon regulations set forth in the Riverhead Zoning Code.

7.2.1 Subsurface Conditions, Soils and Topography

Although there would be slightly less disturbance with this alternative, there would be no significant difference in impacts to subsurface conditions, soils and topography of this alternative versus the proposed action.

7.2.2 Water Resources

The domestic water use/sewage generation would be less than that of the proposed action (12,193± gpd versus 24,163± gpd), due to the removal of the restaurants. Since there is no relaxation of the landscaping requirements under this alternative, there would be a slight increase in irrigation demand above that of the proposed action. The development would be connected to the public sewer and water systems. In addition, since there would be more landscaping than in the proposed action, there would be slightly more water used for irrigation purposes. The same of type of stormwater management system would be used with this alternative, although slightly less stormwater runoff would be generated, due to the slightly lesser amount of impervious surface. As with the proposed action, this alternative would have no impact on surface water bodies or wetlands.

Overall, implementation of this alternative would not have a significant adverse impact on water resources.

7.2.3 Ecology

The difference in the amount of clearing associated with this alternative versus the proposed action would be minimal. There would be additional landscaping on the site since no relaxation of landscaping standards would be required. There would be no significant adverse impact to ecological resources with the implementation of this alternative.

7.2.4 Zoning, Land Use and Community Character

The Alternative Site Plan “By-Right” would comply with all the dimensional standards of the DRC zoning district. TDRs would be purchased to allow the gross square footage proposed in this alternative (406,423). Therefore, this alternative would comply with the intent of the DRC zoning district to allow increased floor area in this TDR receiving area, while protecting farmland in the APZ zoning district, a TDR sending area. As discussed in Section 7.2.7, below, development under this alternative would require 29.63 (30) TDRs. This is approximately 62 TDRs fewer than that required for the proposed action. Therefore, less farmland would be preserved with the implementation of this alternative than with the proposed action.

The Alternative Site Plan (“By-Right”), meets all of the front, side and rear yard setback requirements (see Appendix Q). Furthermore, Table 49 presents a consistency analysis with other dimensional requirements:

Table 49 – Dimensional Requirements

Description	Required	Provided
Impervious Surface (Max.)	75% (1,357,425 sf)	75% (1,356,689 sf)
Contiguous Landscape (Min.)	20% (361,980 sf)	20% (362,220 sf)
Interior Parking Landscape (Min.)	10% (55,485 sf)	12.9% (71,396 sf)
Maximum Building Height (Max.)	50 feet	≤ 50 feet
Building Lot Coverage (Max.)		
(With Sewer)	15% (271,485 sf)	21.16% (383,039 sf)
(With TDRs)	30% (542,970 sf)	21.16% (383,039 sf)
Floor Area Ratio (Max.)		
(With Sewer)	20% (361,980 sf)	22.46% (406,423 sf)
(With TDRs)	60% (1,085,940 sf)	22.46% (406,423 sf)

Development under the Site Plan Alternative “By-Right” would conform to the zoning and would blend with the land use and community character along Route 58. Therefore, this alternative would not have a significant adverse impact on the environment.

7.2.5 Transportation

According to Eschbacher VHB, the Alternative Site Plan (“By-Right”) would result in the following trip generation:

Table 50 - Trip Generation Summary: Alternative Site Plan (“By-Right”)

Use Type	Size	Entering Trips	Exiting Trips	Total
AM Peak Hour				
Retail Space	267,445* SF	168	108	276
Discount Club	156,078* SF	62	26	88
Total		230	134	364
PM Peak Hour				
Retail Space	267,445* SF	481	522	1,003
Discount Club	156,078* SF	331	331	662
Total		812	853	1,665
Saturday Peak Hour				
Retail Space	267,445* SF	692	638	1,330
Discount Club	156,078* SF	524	546	1,070
Total		1,216	1,184	2,400

*Based upon total floor space, not gross floor area.

These trip generation numbers are slightly lower than those associated with the proposed action. However, the potential traffic impacts would be similar. With the mitigation indicated for the proposed action, this alternative would not have a significant impact on traffic conditions and traffic safety in the area.

In addition, the total number parking spaces required, based upon the total floor space of 423,523 square feet is 1,794. The Alternative Site Plan (“By-Right”) contains 1,794 parking spaces.

7.2.6 Air Quality and Noise

There would be no significant difference in air quality and noise impacts from this alternative versus the proposed action. As no significant adverse impacts were identified for the proposed action, since there would be less traffic and less square footage of retail space, this would remain true for this alternative.

7.2.7 Socioeconomics

An Economic Impact Analysis was prepared by Pearl M. Kamer, Ph.D. This analysis includes the proposed action as well as both proposed alternatives. See Appendix K of this DEIS for the complete analysis. For this alternative, the following buildings have been proposed:

Table 51 - Building/Structure Summary Table

Building	Description	Building Coverage in Square Feet	Gross Floor Area In Square Feet
A	Wholesale Club	154,313	152,378
B	Toy Store	89,911	95,365
C	Furniture Store	30,465	58,330
D	Home Goods Store	24,815	23,515
E	Home Goods Store	39,964	38,164
F	Electronics Store	20,331	19,131
G	Small Retail Stores	19,740	16,740
H	Bank	3,500	2,800
Total		383,039	406,423

Job Creation and Earnings Generated During the Construction Phase

According to the New York State Labor Department, the average Long Island construction worker earned \$53,155 annually in 2006. Using this figure as a benchmark, the total payroll for the 238 workers needed to construct the project would be approximately \$12,653,506 in current dollars.

These jobs and payrolls also provide a secondary economic benefit to the community. Earnings throughout the Long Island economy would increase by almost \$35 million and an estimated 856 secondary jobs would be created in various industries throughout the local economy. Much of this impact would occur in the immediate vicinity of the project.

Permanent Job Creation

This alternative will also have a positive impact on the local economy when all retail facilities are fully occupied and operational. The retail center will employ a significant number of workers, mostly drawn from the immediate community. Assuming one job for every 350 square feet of general retail space and one job for every 400 square feet of bank space, 406,423 square feet would generate an estimated 1,093 full-time equivalent jobs. The wages associated with these jobs will provide a significant boost to the local economy. Given current wages in various lines of retailing, total annual payrolls for this alternative could amount to almost \$25 million.

The projected market value of the proposed project is \$46,623,802. Applying the current Town of Riverhead equalization rate of 11.54 percent results in an assessed value of \$5,380,387. Applying the current town and school tax rate of \$137.258 per \$1,000 of assessed value results in total annual real property taxes of \$738,501.

Table 52 - Estimated Real Property Tax Revenues From The Shops at Riverhead

Estimated Gross Income	\$8,941,551
Vacancy Rate	7%
Expense Ratio	20%
Net Income	\$6,527,332
Capitalization Rate	0.14
Estimated Market Value	\$46,623,802
Current Equalization Rate	11.54%
Assessed Value	\$5,380,387
Current Tax	\$137.258 per \$1000 of Assessed Value
Estimated Real Property Taxes	\$738,501

Source: Consultant's estimates based on information from the Town of Riverhead Tax Receiver & Assessor.

Allocation of Property Tax Revenues to Affected Taxing Districts

The foregoing tax revenues were allocated to all affected tax districts based on the most recent tax bill for the property. The allocation formula and distribution of taxes is shown below. Riverhead Central School District #2 would receive more than \$437,000 annually in additional real property taxes from the Shops at Riverhead. Moreover the district will not incur any additional educational costs in connection with the development since no residential housing is being proposed. The Town of Riverhead would receive more than \$158,000 in additional real property taxes annually. The Riverhead Ambulance District would receive more than \$5,900 in tax revenues annually and Riverhead Fire Zone 1 would receive more than \$28,000 annually.

Table 53 - Allocation of Potential Tax Revenues to Affected Taxing Districts

Taxing District	Percent of Levy	Estimated Tax Revenue
Riverhead CSD #2	59.2	\$437,193
Riverhead Free Library	1.9	14,032
Suffolk County Tax	1.6	11,816
Riverhead Town Tax	21.4	158,039
Highway	4.3	31,756
NYS Real Property Tax Law	1.2	8,862
Riverhead Ambulance District	0.8	5,908
Riverhead Fire Zone 1	3.8	28,063
Light District	0.6	4,431
RHD Comm Sewer Ext	4.7	34,710
Riverhead Water	0.5	3,693
Total	100.0	\$738,501

Source: Consultant's estimates based on most recent tax bill.

Acres of Farmland Preserved in the Town of Riverhead

According to the consulting engineer, the TDR's required for this project are based on the total site area, which is 1,809,900.46 square feet (41.55 acres). The floor area allowed by right is 20 percent of this square footage, which equals 361,980.09 square feet. The proposed gross floor area for this alternative is 406,423 square feet, which is 44,443 square feet above what is allowed by right. One TDR is needed for each 1,500 square feet over what is allowed by right. Dividing 44,443 by 1,500 indicates that 30 TDRs will be needed for this alternative. Since each TDR preserves 43,560 square feet (one acre) of farmland, 30 TDRs would preserve approximately 30 acres of farmland within the Town of Riverhead. These findings are summarized in the following computations.

Table 54 - Computation of Required TDRs for the Shops at Riverhead

Site Acreage	1,809,900.46 Sq. Ft.
Maximum Footprint Allowed Without TDRs	361,980.09 Sq. Ft.
Excess Square Feet in Proposed Project	44,443
Square Feet Equivalent of One TDR	1,500
Estimated Number of TDRs Required For Proposed Footprint	30
Estimated Number of Acres of Farmland Preserved	30

7.2.8 Community Facilities and Services

Education

Section 7.2.7 of this DEIS indicates that approximately \$738,501 would be generated by the subject site in tax revenue under the proposed action. Of this revenue, it is estimated that the Riverhead CSD would receive more than \$437,193 annually in additional real property taxes under this alternative. As no school-aged children would be generated on-site, this represents a net benefit to the school district.

Fire Protection

According to Section 7.2.7 of this DEIS, the Fire Department should receive approximately \$28,063 in additional property tax revenues. This is less than the proposed action. It is believed that this revenue would partially, if not completely, compensate the Department for the cost of servicing the proposed destination retail center under this alternative. Furthermore, the buildings will be constructed using the latest New York State Building and Fire Code. These regulations require the use of the latest construction and fire protection techniques and equipment, including sprinklers.

Ambulance Service

Although less than the proposed action, the Ambulance District would receive an estimated \$5,908 in additional real property taxes annually from the Shops at Riverhead, which should, at least partially, compensate the District for any additional resources needed to service this facility.

Police Protection

According to information presented in Section 7.2.7 of this DEIS, the Town of Riverhead would receive \$158,039 in additional tax revenue under the TDR alternative, a portion of which would be allocated to the Town of Riverhead Police Department. Although this is less than the proposed action, it is anticipated that this additional tax revenue would, at the very least, partially compensate the Police Department for costs incurred associated with servicing the subject site.

Solid Waste

Using solid waste generation factors from *Environmental Engineering Fifth Edition*⁵ the anticipated solid waste generation for the subject site under the TDR alternative was calculated as follows:

⁵ Salvato, JA., N.L. Nemerow, and F.J. Agardy. 2003. *Environmental Engineering - Fifth Edition*. John Wiley & Sons, Inc. page 768.

Retail Space (excluding Costco):

- Using the solid waste generation figure for retail and service facility
- $254,045 \text{ sf} \times 13 \text{ lbs per day}/1000 \text{ sf} = 3,303\pm \text{ lbs per day} (50.2\pm \text{ tons/month})$

Costco:

- Using the solid waste generation figure for wholesale and retail facility
- $152,378 \text{ sf} \times 1.2 \text{ lbs per day}/1000 \text{ sf} = 182.9\pm \text{ lbs per day} (2.8\pm \text{ tons/month})$

As such, the total solid waste generation for the subject site would be approximately $3,486\pm$ lbs/day ($53.0\pm$ tons/month). This is significantly less than the proposed action, due to the elimination of the restaurants. Under this alternative, solid waste would be removed from the subject site by a licensed carter and disposed of at an appropriate facility.

Overall, similar to the proposed action, it is not expected that the implementation of this alternative would have a significant adverse impact on community facilities and services.

7.2.9 Visual and Cultural Resources

The Alternative Site Plan (“By-Right”) would not require the relaxation of the landscaping or other standards. Therefore, there would be slightly less building square footage and mass on the property and slightly more landscaping. Therefore, there would be a slight change in the visual characteristics of this alternative versus the proposed action. However, this alternative and the proposed action would be similar in configuration, and the views into and from the site would not be significantly different. Overall, this alternative would not have a significant adverse impact on visual resources.

As with the proposed action, there would be no impact to cultural resources with the implementation of this alternative.

7.3 ALTERNATIVE SITE PLAN (“ALL RETAIL”)

The Alternative Site Plan (“All Retail”) encompasses development of the site under the DRC zoning, with the use of the most TDRs of all the alternatives, with the proposed relaxation of the same zoning requirements (i.e., impervious surface area, contiguous landscaping, parking stall size) requested under the proposed action (see Appendix Q). This plan contains retail/bank use solely; no restaurants are proposed. The development would consist of 11 buildings comprising a total of 514,580 square feet of gross floor area, with a building coverage of 496,053 square feet. Access to the site would be from Route 58. In order to develop the subject property as shown on the Alternative Site Plan, 101.73 TDR credits would be required, based upon regulations set forth in the Riverhead Zoning Code.

7.3.1 Subsurface Conditions, Soils and Topography

Although there would be slightly more disturbance with this alternative, there would be no significant difference in impacts to subsurface conditions, soils and topography of this alternative versus the proposed action.

7.3.2 Water Resources

The domestic water use/sewage generation would be less than that of the proposed action (15,438± gpd versus 24,163± gpd). The development would be connected to the public sewer and water systems. In addition, since there would be more landscaping than in the proposed action, there would be slightly more water used for irrigation purposes. The same of type of stormwater management system would be used with this alternative, although slightly less stormwater runoff would be generated, due to the slightly lesser amount of impervious surface. As with the proposed action, this alternative would have no impact on surface water bodies or wetlands.

Overall, implementation of this alternative would not have a significant adverse impact on water resources.

7.3.3 Ecology

The difference in the amount of clearing associated with this alternative versus the proposed action would be minimal. There would be less landscaping on the site, as the relaxation requested would be somewhat greater than in the proposed action. There would be a greater impact to ecological resources with the implementation of this alternative, since less vegetation would be contained on the site, and more wildlife would be displaced.

7.3.4 Zoning, Land Use and Community Character

The Alternative Site Plan (“All Retail”) would not comply with the all the dimensional standards of the DRC zoning district. TDRs would be purchased to allow the gross floor area proposed in this alternative (514,580 square feet). Therefore, this alternative would comply with the intent of the DRC zoning district to allow increased floor area in this TDR receiving area, while protecting farmland in the APZ zoning district, a TDR sending area. As discussed in Section 7.3.7, below, development under this alternative would require 101.73 (102) TDRs. This is approximately 10 TDRs more than that required for the proposed action. Therefore, more farmland would be preserved with the implementation of this alternative than with the proposed action. The following is a summary of the dimension requirements and this alternative’s consistency therewith.

Table 55 - Dimensional Requirements

Description	Required	Provided
Impervious Surface (Max.)	75% (1,357,425 sf)	88.3% (1,598,772 sf)
Contiguous Landscape (Min.)	20% (361,980 sf)	7.4% (134,525 sf)
Interior Parking Landscape (Min.)	10% (64,182 sf)	10.8% (69,345 sf)
Maximum Building Height (Max.)	50 feet	≤ 50 feet
Building Lot Coverage (Max.)		
(With Sewer)	15% (271,485 sf)	27.41% (496,053 sf)
(With TDRs)	30% (542,970 sf)	27.41% (496,053 sf)
Floor Area Ratio (Max.)		
(With Sewer)	20% (361,980 sf)	28.43% (514,580 sf)
(With TDRs)	60% (1,085,940 sf)	28.43% (514,580 sf)

Development under the Alternative Site Plan (“All Retail”) would conform to the zoning and would blend with the land use and community character along Route 58. Therefore, this alternative would not have a significant adverse impact on the environment.

7.3.5 Transportation

According to Eschbacher VHB, the Alternative Site Plan (“By-Right”) would result in the following trip generation:

Table 56 - Trip Generation Summary: Alternative Site Plan (“All Retail”)

Use Type	Size	Entering Trips	Exiting Trips	Total
AM Peak Hour				
Retail Space	380,459 SF	239	153	392
Discount Club	156,078 SF	62	26	88
Total		301	179	480
PM Peak Hour				
Retail Space	380,459 SF	685	742	1,427
Discount Club	156,078 SF	331	331	662
Total		1,016	1,073	2,089
Saturday Peak Hour				
Retail Space	380,459 SF	983	908	1,891
Discount Club	156,078 SF	524	546	1,070
Total		1,507	1,454	2,961

This trip generation numbers are slightly higher than those associated with the proposed action. However, the potential traffic impacts would be similar. With the mitigation indicated for the proposed action, this alternative would not have a significant impact on traffic conditions and traffic safety in the area. The required parking under this alternative would be 2,264 parking spaces and 2,264 spaces would be provided.

7.3.6 Air Quality and Noise

There would be no significant difference in air quality and noise impacts between this alternative and the proposed action. As no significant adverse impact was identified for the proposed action, since there would be less traffic and less square footage of retail space, this would remain true for this alternative.

7.3.7 Socioeconomics

As previously noted, an Economic Impact Analysis has been prepared for the proposed action, as well as the alternatives. See Appendix K for the complete analyses. For this all-retail alternative, the following buildings have been proposed:

Table 57 - Building/Structure Summary

Building	Description	Building Square Feet	Floor Area
A	Wholesale Club	154,313	152,378
B	Toy Store	64,028	61,928
C	Department Store	89,911	95,365
D	Retail Store	20,340	19,300
E	Pet Store	20,036	18,919
F	Furniture Store	30,465	58,330
G	Home Goods Store	24,815	23,515
H	Home Goods Store	39,964	38,164
I	Electronics Store	20,331	19,133
J	Small Retail Stores	28,350	24,750
K	Bank	<u>3,500</u>	<u>2,800</u>
Total		496,053	514,582

Job Creation and Earnings Generated During the Construction Phase

The number of construction workers needed was determined by dividing the number of construction hours required by the number of hours each construction worker works per year. Industry sources put this figure at 1,820. This shows that 301 construction jobs will be created during the construction phase in order to complete the project.

According to the New York State Labor Department, the average Long Island construction worker earned \$53,155 annually for 2006. Using this figure as a benchmark, the total payroll for the 301 workers needed to construct the project would be approximately \$15,990,754 in current dollars.

These jobs and payrolls also provide a secondary economic benefit to the community. Earnings throughout the Long Island economy would increase by more than \$44 million and an estimated 1,082 secondary jobs would be created in various industries throughout the local economy. Much of this impact would occur in the immediate vicinity of the project.

Permanent Job Creation

This alternative will also have a positive impact on the local economy when all retail facilities are fully occupied and operational. The retail center will employ a significant number of workers, mostly drawn from the immediate community. Assuming one job for every 350 square feet of general retail space and one job for every 400 square feet of bank space, 514,582 square feet would generate an estimated 1,469 full-time equivalent jobs. The wages associated with these jobs will provide a significant boost to the local economy. Given current wages in various lines of retailing, total annual payrolls for this alternative could amount to almost \$33 million.

The projected market value of the proposed project is \$60,723,100. Applying the current Town of Riverhead equalization rate of 11.54 percent results in an assessed value of \$7,007,446. Applying the current town and school tax rate of \$137.258 per \$1,000 of assessed value results in total annual real property taxes of \$961,828.

Table 58 - Estimated Real Property Tax Revenues

Estimated Gross Income	\$11,645,526
Vacancy Rate	7%
Expense Ratio	20%
Net Income	\$8,501,234
Capitalization Rate	0.14
Estimated Market Value	\$60,723,100
Current Equalization Rate	11.54%
Assessed Value	\$7,007,446
Current Tax	\$137.258 per \$1000 of Assessed Value
Estimated Real Property Taxes	\$961,828

Source: Consultant's estimates based on information from the Town of Riverhead Tax Receiver & Assessor.

Allocation of Property Tax Revenues to Affected Taxing Districts

The foregoing tax revenues were allocated to all affected tax districts based on the most recent tax bill for the property. The allocation formula and distribution of taxes is shown below. Riverhead Central School District #2 would receive more than \$569,402 annually in additional real property taxes. Moreover the district will not incur any additional educational costs in connection with the development since no residential housing is being proposed. The Town of Riverhead would receive almost \$206,000 in additional real property taxes annually. The Riverhead Ambulance District would receive almost \$7,700 in tax revenues annually and Riverhead Fire Zone 1 would receive more than \$36,500 annually.

Table 59 - Allocation of Potential Tax Revenues to Affected Taxing Districts

Taxing District	Percent of Levy	Estimated Tax Revenue
Riverhead CSD #2	59.2	\$569,402
Riverhead Free Library	1.9	18,275
Suffolk County Tax	1.6	15,389
Riverhead Town Tax	21.4	205,831
Highway	4.3	41,359
NYS Real Property Tax Law	1.2	11,542
Riverhead Ambulance District	0.8	7,695
Riverhead Fire Zone 1	3.8	36,549
Light District	0.6	5,771
RHD Comm Sewer Ext	4.7	45,206
Riverhead Water	0.5	4,809
Total	100.0	\$961,828

Source: Consultant's estimates based on most recent tax bill.

Acres of Farmland Preserved in the Town of Riverhead

According to the consulting engineer, the TDR's required for this project are based on the total site area, which is 1,809,900.46 square feet (41.55 acres). The floor area allowed by right is 20 percent of this square footage, which equals 361,980.09 square feet. The proposed gross floor area for this alternative is 514,580 square feet, which is 152,600 square feet above what is allowed by right. One TDR is needed for each 1,500 square feet over what is allowed by right. Dividing 152,600 by 1,500 indicates that 102 TDRs will be needed for this alternative. Since each TDR preserves 43,560 square feet (one acre) of farmland, 102 TDRs would preserve approximately 102 acres of farmland within the Town of Riverhead. These findings are summarized in the following computations.

Table 60 - Computation of Required TDRs

Site Acreage	1,809,900.46 Sq. Ft.
Maximum Footprint Allowed Without TDRs	361,980.09 Sq. Ft.
Excess Square Feet in Proposed Project	152,600
Square Feet Equivalent of One TDR	1,500
Estimated Number of TDRs Required For Proposed Footprint	102
Estimated Number of Acres of Farmland Preserved	102

7.3.8 Community Facilities and Services

Education

Section 7.3.7 of this DEIS indicates that approximately \$961,828 would be generated by the subject site in tax revenue under the proposed action. Of this revenue, it is estimated that the Riverhead CSD would receive more than \$569,402 annually in additional real property taxes under this alternative. As no school-aged children would be generated on-site, this represents a net benefit to the school district, although the property tax revenue would be less than that of the proposed action.

Fire Protection

According to Section 7.3.7 of this DEIS, the Fire Department should receive approximately \$36,549 in additional property tax revenues, less than the proposed action. It is believed that this revenue would partially, if not completely, compensate the Department for the cost of servicing the proposed destination retail center under this alternative. In addition, the buildings will be constructed using the latest New York State Building and Fire Code. These regulations require the use of the latest construction and fire protection techniques and equipment, including sprinklers.

Ambulance Service

Although slightly less than the proposed action, the Ambulance District would receive an estimated \$7,695 in additional real property taxes annually from the Shops at Riverhead, which should, at least partially, compensate the District for any additional resources needed to service this facility.

Police Protection

According to information presented in Section 7.3.7 of this DEIS, the Town of Riverhead would receive approximately \$205,831 in additional tax revenue under this alternative, a portion of which would be allocated to the Town of Riverhead Police Department. Although less than the proposed action, it is anticipated that this additional tax revenue would, at the very least, partially compensate the Police Department for costs incurred associated with servicing the subject site.

Solid Waste

Using solid waste generation factors from *Environmental Engineering Fifth Edition*⁶ the anticipated solid waste generation for the subject site under the TDR alternative was calculated as follows:

Retail Space (excluding Costco):

- Using the solid waste generation figure for retail and service facility
- $362,202 \text{ sf} \times 13 \text{ lbs per day}/1000 \text{ sf} = 4,709 \pm \text{ lbs per day} (71.6 \pm \text{ tons/month})$

Costco:

- Using the solid waste generation figure for wholesale and retail facility
- $152,378 \text{ sf} \times 1.2 \text{ lbs per day}/1000 \text{ sf} = 182.9 \pm \text{ lbs per day} (2.8 \pm \text{ tons/month})$

As such, the total solid waste generation for the subject site would be approximately 4,892 lbs/day (74.4± tons/month); this is significantly less than the proposed project, due to the removal of the restaurants. Under this alternative, solid waste would be removed from the subject site by a licensed carter and disposed of at an appropriate facility.

Overall, similar to the proposed action, it is not expected that the implementation of this alternative would have a significant adverse impact on community facilities and services.

⁶ Salvato, JA., N.L. Nemerow, and F.J. Agardy. 2003. *Environmental Engineering - Fifth Edition*. John Wiley & Sons, Inc. page 768.

7.3.9 Visual and Cultural Resources

The Alternative Site Plan (“All Retail”) would require the relaxation of the landscaping and other standards, as described in Section 7.3.4. There would be slightly more building square footage and mass on the property and slightly less landscaping than the proposed action. Therefore, there would be a slight change in the visual characteristics of this alternative versus the proposed action. There would be less building mass visible along Route 58, as there would only be one small building situated near the roadway. Overall, this alternative would not have a significant adverse impact on visual resources.

There would be no impact to cultural resources with the implementation of this alternative.

8.0 IRRETRIEVABLE AND IRREVERSIBLE COMMITMENT OF RESOURCES

The proposed development of the site would require a commitment of natural and manmade resources as well as time. Specifically, approximately 36.49 acres (87.82 percent) would be covered by impervious surfaces.

Certain additional resources related to the construction aspects of the development will be committed. These resources include, but are not limited to, concrete, asphalt, lumber, paint and topsoil. Mechanical equipment resources will be committed to assist personnel in the construction at the property. The operation of construction equipment will require electricity, water resources and fossil fuels. Furthermore, the construction phase of the proposed project will require the commitment of manpower resources as well as time.

9.0 GROWTH-INDUCING ASPECTS

Growth-inducing aspects are generally described as the long-term secondary effects of the proposed action. While the proposed action will result in the generation of employment on the site, the level of employment is not expected to create the need for additional housing in the area. It is likely that the jobs to be generated would be primarily filled by persons who reside in the local areas. Relocation from other areas is not anticipated. Thus, the employment opportunities generated would not result in an influx of population seeking housing in the area, and the action would not be expected to induce growth in this manner. It should be noted that the proposed project is permitted under the existing DRC zoning and is consistent with the Town of Riverhead *Comprehensive Plan*.

There will be an increase in the tax revenue generated from the site. Whereas currently, the subject property generates approximately \$32,888 in annual property tax revenue, the proposed Shops at Riverhead is expected to generate \$1.22± million, annually. Therefore, there would be a growth in tax revenue generated by the subject property.

With regard to traffic growth, the mitigation measures required are not substantial. Thus, as significant new roadway infrastructure would not be constructed, growth inducement is not expected to result.

The proposed project does not involve expanding either the sewer district or installing a new off-site sewer line. The project does involve the construction an on-site pump station. As such, the construction of the proposed development will not induce growth relating to sewer expansion. The proposed development would also be connected to existing public water lines. No new mains are needed to serve the proposed development.

With regard to long-term secondary effects, the redevelopment of this parcel for The Shops at Riverhead use would improve the current conditions of the subject property and may serve to stimulate the redevelopment of other parcels along the Route 58 corridor.

Based upon the above analysis, the proposed action may result in growth-inducing impacts along the Route 58 corridor in the hamlet of Riverhead or in the immediately surrounding area.

10.0 USE AND CONSERVATION OF ENERGY

The proposed action consists of the development of a destination retail center. No excessive energy users (such as a manufacturing plant with multiple shifts) would be situated on the site. The proposed method for heat is anticipated to be natural gas.

The existing and projected supplies of electricity and other heating fuels are expected to be available to supply the proposed project. In conclusion, existing and projected supplies of electricity are available for the proposed development. It is not expected that the project would require electricity providers to construct new generating facilities to serve the site. It is also not expected that the project would result in adverse impacts to the use and conservation of energy.

11.0 GLOSSARY

A-weighted Sound Level: A measure of the sound pressure level weighted to most closely approximate the range of frequencies detectable by the human ear. Expressed as dBA.

ACC/MVM: Accidents per million vehicle miles

ACM: Asbestos-containing material

Aquifer: Any geologic formation containing water, especially one that supplies water for wells, springs, etc.

bgs: below grade surface

CEA: Critical Environmental Area

CO: Carbon monoxide

CY: Cubic Yards

dB: decibels

Decibel (dB): A logarithmic scale used to quantify sound measurement. Use of a decibel scale reduces a dynamic range of sound pressures of million to one to a more manageable range of sound pressure levels of only 1 to 120, approximately the threshold of pain.

DEIS: Draft Environmental Impact Statement

EAF: Environmental Assessment Form

ECL: Environmental Conservation Law

Effluent: Sewage, water or other liquid, partially or completely treated or in its natural state, flowing out of a reservoir, basin or treatment plant.

EPM: Environmental Procedures Manual of the NYSDOT Environmental Analysis Bureau

ESA: Environmental Site Assessment

FAR: Floor Area Ratio

FEMA: Federal Emergency Management Agency

Geoprobe: a hydraulically-powered percussion probing machine designed specifically for use in the environmental industry. Used for obtaining soil and/or groundwater samples.

gpd: gallons per day

gpm: gallons per minute

HC: Hydrocarbons

HUD: [Department of] Housing and Urban Development

ITE: Institute of Traffic Engineers

L_{dn}: day-night average sound level

L_{eq}: energy equivalent sound level

LIE: Long Island Expressway

LOS: Level of Service

mo: Month

mph: miles per hour

msl: Mean Sea Level

N/A: Not Applicable; not available

NAAQS: National Ambient Air Quality Standards established by the United States Environmental Protection Agency

NHP: Natural Heritage Program

NO₂: Nitrogen dioxide

NO_x: Nitrogen oxides

NOI: Notice of Intent

NURP: Nationwide Urban Runoff Program

GLOSSARY (CONT'D.)

NWI: National Wetland Inventory

NYS: New York State

NYSDEC: New York State Department of Environmental Conservation

NYSDOH: New York State Department of Health

NYSDOT: New York State Department of Transportation

O₃: Ozone

OPRHP: [NYS] Office of Parks, Recreation and Historic Preservation

Organic: Noting or pertaining to a class of compounds that formerly comprise only those existing in or derived from plants or animals.

Pb: lead

Peak Hour of Roadway: The hour that the highest volume of traffic passing the site in the a.m. or p.m.

Peak Hour of Generator: The hour of the highest volume of traffic entering and exiting the study site in the a.m. and p.m.

PEC: Potential environmental conditions

PM₁₀ and PM_{2.5}: inhalable particulates

ppm: parts per million

REC: Recognized Environmental Conditions

Recharge Basin: A man-made device capable of retaining surface water runoff to induce groundwater infiltration.

SEQRA: State Environmental Quality Review Act

SF: Square feet

SGPA: Special Groundwater Protection Area

SO₂: Sulfur Dioxide

SPDES: State Pollution Discharge Elimination System

SPL: Sound Pressure Level

SVOC: Semi-volatile organic compound

Swale: A low place (or drainage channel) in a tract of land, usually moister and often having more lush vegetation than the adjacent higher land.

SWPPP: Stormwater Pollution Prevention Plan

TSP: Total suspended particulates

USACOE: United States Army Corps of Engineers

USEPA: United States Environmental Protection Agency

UST: Underground Storage Tank

VOC: Volatile Organic Compound

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