

### 3.7 Community Services / Socioeconomics

#### 3.7.1 Taxes

##### Summary

It is estimated that the project will generate approximately \$2.64 million in annual real estate taxes and \$38 million in annual sales taxes to various taxing jurisdictions, including the State of New York, Orange County, the Town of Newburgh and the Newburgh Enlarged City School District. Orange County will receive \$17.5 million or 46 percent of the total amount.

The Town of Newburgh currently receives approximately \$2.7 million annually from the County's share of annual sales taxes. This represents approximately 17.5 percent of the annual budget for the Town of Newburgh which in 2005 totaled \$15.4 million.

It is estimated that the Town will receive an additional approximately \$278,000 annually from the Town's share of the sales tax revenue generated by the Marketplace. Additionally the Town will benefit indirectly from additional services and maintenance the County provides for county roads, parks, and other County operations that are paid for, in part, from sales tax revenues. Table 3.7-1 provides a summary of sales tax revenues generated by the Marketplace.

<b>Table 3.7-1</b>	
<b>Sales Tax Revenues Generated by the Marketplace at Buildout</b>	
<b>Jurisdiction</b>	<b>Annual Sales Tax Revenues</b>
New York State	\$18,700,000
Orange County	\$17,531,250
<i>(Town of Newburgh portion)</i>	<i>\$278,000</i>
Metropolitan Commuter Transportation District	\$1,753,125
<b>Total</b>	<b>\$37,984,375</b>
Source: Tim Miller Associates, 2005.	

The Marketplace will have a significant net positive impact on property tax revenues that would accrue to various taxing jurisdictions. The Newburgh City School District will receive the largest benefit estimated at \$1,923,425 annually (or 74 percent) in school district tax revenues with no additional direct costs associated with the Marketplace. Table 3.7-2 summarizes the property tax revenues that would be generated by the Marketplace at build out.

<b>Table 3.7-2 Annual Property Tax Revenues Generated by the Marketplace at Buildout</b>	
<b>Taxing Jurisdiction</b>	<b>Annual Property Tax Revenues</b>
Newburgh ECSD	\$1,923,425
Orange County	\$290,073
Town of Newburgh (General Fund and Highway Fund)	\$271,359
Orange Lake Fire	\$88,357
Goodwill Fire	\$1,143
Consolidated light	\$6,585
Consolidated Water 1	\$17,328
Consolidated Water 2	\$38,122
<b>Total</b>	<b>\$2,636,391</b>
Source: Town of Newburgh Assessor, Tax Receiver. *Per \$1,000 of assessed valuation. Rates have been rounded to the nearest cent. AV = Assessed Value.	

The Marketplace is not expected to place a significant demand on community services or facilities although some service providers may need to expand to accommodate the growth that is taking place in the Town, The Town (including the Town highway department) will receive annually \$271,359 as its share of annual real estate taxes resulting from the Marketplace development. As all three of the Marketplace access points are on state roads, the impact on the Marketplace on Town highway costs will be minimal.

#### Existing Conditions

Property taxes are levied against properties to pay for the costs associated with the governmental functions of the Town of Newburgh. The tax parcels that constitute the Marketplace project site presently pay tax revenues to the following funds/districts:

- Orange County;
- Newburgh Enlarged City School District;
- Town General Fund;
- Town Highway Fund;
- Crossroads Sewer District;
- Consolidated Lighting District;
- Crossroads Sewer District;
- Goodwill and Orange Lake fire districts; and,
- Consolidated Water Districts One and Two.

In 2005, the Town's General Fund budget totaled \$15,444,448. The General Fund pays for the costs associated with the following: administrative functions such as town boards, justice courts, tax receiver, town clerk, legal; buildings and grounds; public safety, including police; senior programs; recreation programs; bonding of facilities; employees benefits, and other government programs. Of this total, \$5,933,502, or approximately 39 percent, was raised by the property tax levy.

The Town's Highway budget totaled \$5,073,066. Of this total, \$4,604,505, or 91 percent, was raised by property tax revenues.

Most of the site is located in the Orange Lake Fire District. The 2005 budget for the Orange Lake Fire District was \$868,000, and its revenues were raised entirely through the property tax levy.

One parcel, approximately 0.2 acres in size, is located in the Goodwill Fire District. The 2005 budget for that district totaled \$281,130; revenues to the district are raised entirely by property tax revenues.

The site is located in a number of "benefit" districts; the cost of these services is borne by the benefited users within the district. The Crossroads Sewer District had a 2005 budget of \$2,390,170. According to the Town of Newburgh Summary of the 2005 Adopted Budget, there is no property tax levy associated with the sewer district. Revenues are raised by user charges for those benefited in the district.

The site is also located within the Consolidated Lighting District, which had a total budget of \$94,500; of this total, \$90,000 was raised by the property tax levy.

Lastly, the tax levy for Consolidated Water District One totaled \$609,085; for Consolidated Water District Two, the levy totaled \$1,113,829.

#### *Property Tax Revenues*

The project site presently generates taxes to various jurisdictions. The 2005 taxable value of each parcel constituting the project site is presented in Table 3.7-3. The 2005 assessed value of the site is \$1,889,300. However, as a result of various exemptions, e.g., STAR and veteran exemptions, the taxable assessed value varies slightly by taxing jurisdiction.

The parcels comprising the project site pay property taxes to: Orange County, Town of Newburgh, Newburgh Enlarged City School District, Orange Lake Fire District, Goodwill Fire District, Consolidated Lighting District 4, Consolidated Water District 1, and Consolidated Water District 2. Tax Parcel 97-1-20.3 is located within the Goodwill Fire District. All parcels pay property taxes to Consolidated Water District 1. This district levies taxes to pay for Chadwick Lake, a water supply source. Consolidated Water District 2 levies taxes to pay for water mains, lines, and other infrastructure. Several properties do not presently pay tax revenues to Consolidated Water District 2 as they are not served by infrastructure.

Table 3.7-3 estimates the property tax revenues paid by the project site using 2005 tax rates, which totals approximately \$136,637 annually.

<b>Table 3.7-3 Existing 2005 Property Tax Revenues</b>			
Taxing Jurisdiction	2005 Tax Rate*	Current Taxable Value	Existing Taxes
Orange County	\$8.37	\$1,885,115	\$15,778.41
Newburgh Town General Fund	\$4.41	\$1,885,115	\$8,313.36
Newburgh Town Highway	\$3.42	\$1,885,115	\$6,447.09
Orange Lake Fire	\$2.58	\$1,879,900	\$4,850.14
Goodwill Fire	\$2.79	\$4,700	\$13.11
Consolidated light	\$0.19	\$1,889,300	\$358.97
Consolidated Water 1	\$0.50	\$1,889,300	\$944.65
Consolidated Water 2	\$1.10	\$840,600	\$924.66
Newburgh ECSD	\$55.50	\$1,783,900	\$99,006.45
<b>Total</b>			\$136,636.85

\*Per 1,000 of assessed valuation.  
Source: Town of Newburgh Assessor, Tax Receiver, 2005.

Potential Impacts

The proposed project is anticipated to generate revenues to various taxing jurisdictions as a result of the increase in total assessed value that would result from construction of the Marketplace development.

In accordance with standard fiscal impact methodology, the fiscal impact analysis considers the fiscal effect of the proposed shopping center development by considering the current costs and revenues generated by the center if it were constructed and operational today.<sup>1</sup>

The Marketplace would introduce 850,000 square feet of gross floor area on approximately 127 acres of land. In order to estimate the project's assessed value, the assessed value of comparable new commercial properties in the Town of Newburgh were reviewed. Commercial properties with frontage on NYS Route 17K or NYS Route 300 were reviewed to determine the average assessed value of proposed buildings and improved land.

Based on a review of the assessed values of comparable commercial properties, vetted by the Newburgh Tax Assessor, the following values were used for purposes of determining the assessed value of the proposed project. It should be noted that the assessed value for 2004 is based on an equalization rate of 37 percent. Therefore, the market value used by the Town assessor is 270 percent (or 2.7 times) the assessed value.

- 2005 Land Value: \$65,000/ acre assessed value
- 2005 Building Value: \$28-50/ square foot assessed value

The Marketplace would have an assessed value of \$34,656,302. Table 3.7-4 summarizes the 2005 tax rates by taxing jurisdiction and the annual property tax revenues that would be generated by the project.

<sup>1</sup> *The Fiscal Impact Handbook, Burchell and Listokin, 1978.*



<b>Table 3.7-4 Annual Property Tax Revenues Generated by the Marketplace</b>		
<b>Taxing Jurisdiction</b>	<b>2005 Tax Rates*</b>	<b>Taxes Generated by Project at Buildout<sup>2</sup></b>
Orange County	\$8.37	\$290,073
Newburgh General Fund	\$4.41	\$152,834
Newburgh Highway Fund	\$3.42	\$118,525
Orange Lake Fire	\$2.59	\$88,357
Goodwill Fire	\$2.79	\$1,143
Consolidated light	\$0.19	\$6,585
Consolidated Water 1	\$0.50	\$17,328
Consolidated Water 2	\$1.10	\$38,122
Newburgh CSD	\$55.50	\$1,923,425
<b>Total</b>		<b>\$2,636,391</b>
Source: Town of Newburgh Assessor, Tax Receiver, Tim Miller Associates, 2005.		
*Per \$1,000 of assessed valuation. Rates have been rounded to the nearest cent.		
AV = Assessed Value.		

The Newburgh Enlarged City School District would receive the greatest share of tax revenues totaling \$1,923,425 annually with no costs generated to the school district.

The Town of Newburgh would receive \$242,583 in annual property tax revenues that would accrue to the General Fund and the Town Highway Fund. The Marketplace development would place limited demand on highway services, as most of the traffic would access the site from I-84, NYS Route 300, and NYS Route 52 which are state-maintained highways.

As a commercial development, the Marketplace would not place demand on such services that are paid by the General Fund such as senior citizen programs, recreational programs, and other social service expenditures funded by the Town General Fund.

#### *Other Special Districts*

The Marketplace would generate revenues to the Consolidated Lighting District, the Consolidated Water District 1 and the Consolidated Water District 2. It would also generate tax revenues to the Crossroads Sewer District.

<sup>2</sup> All commercial projects in the Town of Newburgh benefit from an exemption authorized under Section 485-b of the New York State Real Property Tax Law intended to promote economic development. Under the exemption taxes are paid on half the increase in assessed value attributable to building construction or improvements in the first year. In each succeeding year, for a period of ten years, the amount of assessment is increased by 5% until full value is reached. The exemption applies to all taxing jurisdictions, except fire districts. The tax revenues are based on the property taxes that would be generated without the exemption.

### *Sales Tax Revenues*

The project is expected to generate \$278,000 in sales tax revenues to the Town General Fund annually.

According to the New York State Department of Taxation and Finance, Orange County imposes a sales tax of 8.15 percent which is distributed as follows:

- New York State - 4.00 %
- Orange County - 3.75 %
- Metropolitan Commuter Transportation District (MCTD) - 0.375%

Based on a review of current retail industry benchmarks, it is expected that retail sales will average \$550 per square foot of gross floor area. Based on this level, annual retail sales to be generated by the Marketplace would be approximately \$467.5 million annually.

Using a sales tax rate of 8.125 percent, sales taxes generated by the project will be approximately \$38 million annually. Orange County will receive 46 percent of this amount or \$17.5 million annually and the remainder would accrue to New York State and the MCTD.

Orange County has a sales tax sharing agreement with its municipalities by which the localities receive a share of Orange County's sales tax revenues. In 2004, the Town of Newburgh received \$2,887,220 in sales tax revenues, representing 1.6 percent of the total sale tax revenues received by Orange County in that year.

Based on the Town of Newburgh's historic percentage of sales tax revenues received from the County, it is estimated the annual additional sales tax revenues that will flow from the County to the Town will be approximately \$278,000 annually.

The Marketplace will generate secondary economic benefits as a result of the increase in visitors to the area. Local service and sales establishments would also likely receive increased patronage from customers and employees.

### **3.7.2 Employment**

The project would increase the Town's job base for short- and long-term employment. The shopping center is anticipated to employ 1,600 positions in a number of job categories, including but not limited to sales, management, administration, accounting services, security and maintenance. The project would result in the creation of up to 1,000 person-years of construction employment.

Based on information provided by the New York State Department of Labor, the Town of Newburgh experienced a 4.0 percent unemployment rate in March 2005 and 4.9 percent the same month in 2004. The annual average unemployment rate in 2004 was 4.4 percent.

According to U.S. Census estimates, the 2000 median household income was \$60,017 as compared to \$52,085 for Orange County and \$41,994 for New York State. Middle income earning households in the \$35,000 to \$100,000 range represent nearly 57 percent of all

households in the town. The relatively high household income within the town can be attributed to the high employment rate and occupations of those employed.

A significant proportion of the Town's population is employed in the education, health/social service, retail trade and manufacturing occupations that appear to contribute to the above average household income levels. These four general occupation categories make up approximately 46 percent of the employment types in the town. Construction, transportation, professional, scientific and management administration also have a significant number of employees (23 percent).

Comparatively, the workforce in the Town is similar to that of the County as a whole. However, the Town has more of its population employed in education, health, social service, transportation, retail trade and public administration compared to statewide population estimates. Table 3.7-5 summarizes employment by industry data for the Town, Orange County and New York State.

<b>Table 3.7-5 Employment by Industry (% of employed civilian population)</b>			
Industry	Town of Newburgh	Orange County	New York State
Agriculture, forestry, fishing and hunting, and mining	0.4	1	1.9
Construction	7.9	6.8	6.8
Manufacturing	8.4	10.2	14.1
Wholesale trade	3.9	4.1	3.6
Retail trade	13.2	13.4	11.7
Transportation and warehousing, and utilities	7.3	6	5.2
Information	3.4	3.5	3.1
Finance, insurance, real estate, and rental and leasing	6.2	6.4	6.9
Professional, scientific, management, administrative, and waste management services	7.3	7.6	9.3
Educational, health and social services	24.4	23.8	19.9
Arts, entertainment, recreation, accommodation and food services	5.3	5.5	7.9
Other services (except public administration)	4.4	4.2	4.9
Public administration	8	7.6	4.8
Source: US Census Bureau, 2000. Table prepared by Tim Miller Associates, Inc., 2005.			

*Short-Term Employment*

Many of the construction-related workers at the site will come from the Town of Newburgh and the immediately surrounding area. These workers are expected to have a positive impact on existing local businesses, making local expenditures on food, gasoline, conveniences, etc. In addition to direct construction employment, total employment resulting from construction expenditures on this project would include the creation of jobs in business establishments providing goods and services to project contractors.

Based on labor hour estimates included in the Development Impact Assessment Handbook published by the Urban Land Institute (1994), and a construction market value of \$93.7 million, the project would result in the creation of up to 1,000 person-years of construction employment.

### *Long-Term Employment*

Based on data provided in The Fiscal Impact Handbook, it is estimated that the proposed project would result in the addition of one employee per 500 square feet of gross leasable area. Assuming 95 percent of the shopping center space is leasable, the shopping center would employ 1,600 persons.

The Marketplace of Newburgh would create job opportunities in Orange County, generating demand for approximately 1,600 positions in a number of job categories, including but not limited to sales, management, administration, accounting services, security and maintenance. These jobs would represent a sizable increase in employment in the Town of Newburgh and Orange County.

According to NYS Department of Labor statistics for July 2005, approximately 16,500 persons residing in the Town of Newburgh were employed, and 180,900 County residents were employed. Employment would be expected to be filled by residents in the Hudson River valley counties of Orange, Ulster, Dutchess, and Putnam, given the proximity of these locations to the Town of Newburgh.

### *Housing*

Tim Miller Associates conducted a housing inventory of residential projects that were approved and under construction occurring in Towns within a 15-mile radius of the project site in 2004. Approved dwelling units totaled 1,691 units, of which approximately 670 were townhome dwellings which are customarily purchased by first-time homeowners, as well as older adults that are in the process of downsizing their residential space.

There are another 10,000 dwelling units that have pending applications before communities in the market area of the subject site, with a sizable portion of these applications proposing townhomes. It is expected that there will be ample housing opportunities for future employees of the Marketplace.

### Mitigation Measures

As described above, the project as proposed will result in approximately 1,600 new jobs that are expected to be filled by people living in the City and Town of Newburgh and surrounding municipalities and Counties. Since these employees are expected to come from within the local area, it is not anticipated that significant additional housing stock will be necessary to support these workers. However, the number of residential units currently under construction or in the permitting process within a 30 minute drive of the project site are expected to be available to those employees interested in new housing.

### **3.7.3 Police Protection**

#### Existing Conditions

The Town of Newburgh is patrolled by a Town police force headquartered at 300 Gardnertown Road, approximately 1.2 miles north of the project site. Typical response times would be under five minutes, depending on the location of the nearest patrol car, time of day

and number of calls for service. The Department responds to approximately 28,000-29,000 calls for service per year.

The Department has 58 sworn officers and a total force of 76 personnel, including staff, and serves a population of approximately 27,568 persons based on U.S. Census 2000 estimates. The police personnel to population ratio is one sworn officer per 475 residents, or 2.1 officers per 1,000 population. Planning standards for police personnel published in the Urban Land Institute's (ULI) *Development Impact Assessment Handbook (1985)* is two (2) police per 1,000 population. The current level of staffing in the Town of Newburgh is slightly higher than this standard.

Interviews with Mr. Joe Lopez, Director of Security at the Newburgh Mall, since 1991 were carried out to ascertain police requests to the Mall. He indicated that in the first quarter of 2005 there were 12 calls to the police for assistance, which extrapolates to around 50 calls per year. Mr. Lopez believed that to be an average number and acknowledged that the estimate does not include calls from Sears and Bon Ton.

The Newburgh Mall maintains its own security personnel, with roving patrol providing security within the parking lot and exterior portions of the mall, and foot patrols providing security in the interior of the mall.

The police department noted that the number of calls at the Newburgh Mall is dependent in part on the number of tenants occupying the mall totaling approximately 55-60 tenants. According to tax assessor records, the Newburgh Mall (including McDonalds and Bed, Bath and Beyond) is approximately 490,000 square feet of commercial space.

With regard to several large format retailers in the Town (approximately 125,000 to 150,000 square feet of retail space), the police department receives calls for service to handle a gamut of employee and general public complaints. The police department responds to employees that are caught stealing, shoplifting, accidents in the parking lot, stolen purses, locked keys, etc. The police can also be called as back-up for fire and ambulance emergencies, e.g., directing traffic, and other miscellaneous matters.

*Town of Woodbury; Town of Walkill*

In order to understand the potential impacts associated with the Marketplace shopping center the Town of Woodbury and the Town of Walkill police chiefs were contacted to assess the demands placed on the respective police departments that service shopping centers of comparable size, i.e., Woodbury Commons and the Galleria.

Woodbury Police Chief Kwiatkowski has characterized Woodbury Commons as an "anomaly" and the experience of this shopping center would not be comparable to a more conventional "big box" retail shopping center such as the proposed Marketplace. He believes that the Marketplace would be more comparable to Woodbury Towne Center, a conventional retail center that would be similar to the Marketplace.

At Woodbury Towne center, most calls are for fire and burglary alarms, false calls, and parking lot accidents. According to the Police Chief, the number of calls from this center is nominal. This is attributable to the combination of internal security measures used by the

retailers in that center, the external security patrols, and the more limited number of customers visiting the Woodbury Towne Center compared with Woodbury Commons.

Woodbury Commons contains 220 high-end retail outlet stores selling extra, unsold and out of season items. In contrast, Marketplace would have approximately 35 stores. Because Woodbury Commons unloads designed brand labels at a significant discount, the Commons attracts 12 to 20 million visitors annually and is currently the number one tourist attraction in the region, with daily visitors from five states: Connecticut, New York, New Jersey, Massachusetts and Pennsylvania.

In comparison, the Marketplace is expected to have market rate stores with a market radius of 15 miles and would respond to the retail demands of consumers of the Town of Newburgh, Orange County, and portions of the mid-Hudson Valley region.

The Woodbury Police Chief noted that traffic is the most significant issue confronting the center, as all traffic exits to one road only: NYS Route 32. In comparison, the Marketplace would have three access points to distribute traffic onto the local road network, and provide additional points of emergency ingress and egress.

Police Chief Kwiatkowski advised that although the Commons is a unique retail development, there are still improvements that can be recommended that would assist in addressing security concerns at any shopping center comparable in size to Woodbury Commons. The Marketplace shopping center would benefit from: an evacuation plan, a variety of police patrols (bicycle, motorcycle, ATV) an increase in the "C" line (3 PM to 11 PM patrol), an on-site substation including a computer system, holding cell, booking area, live scan and desks.

Chief Kwiatkowski recommended that access be developed to assure efficient patrolling and fire access. Also, sufficient lighting should be provided, especially at access intersections, to improve visibility at night. Fencing should be considered as deterrence, especially between residential areas and the shopping center.

A letter and numerous calls have been made requesting information from the Town of Wallkill police department for an interview, however, the police department has not yet responded to any requests.

#### Potential Impacts

The Marketplace would require police services as do all retail projects in the town. Early in the review process during the initial formulation of the project, the applicant met with the Police Chief Kehoe to discuss the project. The applicant fully intends to work with the Newburgh Police Department to incorporate internal security into the security program of the Town.

The lifestyle center of the project would have between 20-30 tenants and is one-half the size of the Newburgh Mall. The large-format tenants are similar to other such uses in the town. The retail use would generate a varied number of calls per shift and will increase the demand for police services from the Town.

It is expected that as stores open at the Marketplace, the owner/tenant will meet with the Police Chief to review security measures and coordinate security with the police department. As the Town measures and evaluates the added demand on police services, it is possible that requests to the Town Board for increase police budget and manpower will be made over time. Because of the substantial increase in revenues that will accrue to the Town from property and sales taxes, the ability to respond to increases in security should not burden the general public.

#### Mitigation Measures

During initial operation of the shopping center, it is expected that the police department and the retailers would evaluate security requirements, establish internal and external security procedures and then assess the added demand that the new facilities would place on the Newburgh Police Department over a period of time. The Town Board, who is responsible for adopting the municipal budget, would assess with staff input, the costs attributable to the police department and respond accordingly.

The Town would receive more than \$400,000 annually in revenues to the General Fund which would offset the potential additional cost of police protection. As mentioned previously, the Marketplace is not expected to place significant demand on other local governmental departments.

In addition to property and sales tax revenues, the project sponsor proposes a number of security measures and design improvements that would limit demands placed on the local police force. The implementation of a number of security and safety measures are expected to deter crimes and limit traffic accidents.

The Marketplace is designed to minimize blind corners and unlit or hidden pedestrian areas. All public routes will be well lit. The lighting design demonstrates a commitment to illuminate properly any secluded areas and illuminate vehicular areas to reduce potential traffic accidents.

Another level of deterrence is a visible security camera network on a close circuit television system visible to the public. Public awareness of a surveillance system discourages crime, and if it occurs, provides evidence to use in court.

A private security staff, in a well marked car, monitoring the parking lots and pedestrian areas is another level of deterrence that can be used. During the opening years of the center it is expected that an above average security presence will be beneficial.

The most important level of the security package is deterring crime through enforcement. According to Police Chief Kehoe and Chief Kwiatkowski, criminals will test stores and shopping centers. It is important to establish immediately that crimes in the Marketplace will not be tolerated. With the assistance of the Newburgh police department, the private security force, the use of closed circuit televisions, and the proactive involvement of tenants, complaints will be handled and prosecuted to the fullest extent.

Shoplifting and other issues take place internal to the stores. Security will be addressed at both the tenant and central management level. Individual store tenants typically have their

own security devices, including burglar alarms, video surveillance, mystery shoppers (plain clothes security personnel), and internal training of staff are responsibilities of the tenants.

To further assist the individual tenants, central management will encourage all tenants to receive training through the existing Newburgh police department security training programs. Central management would also supplement the Town's program with any additional resources the central management's private security force and advisors would offer.

Central management would retain the services of a private security firm whose responsibility would be to advise the landlord on the appropriate security measures and to implement them. Private security patrol of the parking lots and maintenance of the security camera network would be their primary function. It is expected that the security force would assist persons in addressing minor incidents such as locked cars. The security patrols would also act as a deterrent to such activities as car break-ins and automotive theft.

It is the opinion of the project sponsor that the property and sale tax revenues that would be generated by the project, coupled with proposed security measures, would minimize and mitigate increased demands on police protection services.

### **3.7.4 Fire Protection and Ambulance Service**

#### Existing Conditions

##### *Fire Protection*

The project site is located in the Orange Lake Fire District and is served by the Winona Lake Engine Company 2, Inc. One tax parcel over which the proposed easterly drive would travel is located in the Goodwill Fire District.

The Winona Lake Engine Company is located at 160 South Plank Road (NYS Route 52) directly across NYS Route 52 from one of the three access points to the Marketplace. just north of the project site's frontage with NYS Route 52. The second engine company in the District is the Dan Leghorn Engine Company 1 located approximately three miles west of the Winona Lake Company on NYS Route 52.

According to the Winona Lake Engine Company website, the Company provides service to approximately 3,500 persons which include over 1,300 residences within an area of 10 square miles. Coverage extends south to Wal-Mart on NYS Route 300, north to the intersection of Route 300 and Gardnertown Road, west to Interstate I-87 (Thruway) and east to the intersection of Route 52 and I-84. According to the fire chief, nearly 60 percent of company's coverage area consists of commercial buildings. The company is all volunteer and has approximately 60 firefighters, including 5 officers.

The Company responds to approximately 420 calls per year. In 2005, the Company responded to 566 alarms. Approximately half of these calls are triggered by automatic alarms in commercial properties and are false alarms. The other half is generally responses to vehicular accidents. There are approximately three to seven structural fires per year, which is less than two percent of all calls.<sup>3</sup> According to the Fire Chief, the typical response time is 5-7 minutes.

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<sup>3</sup> Chief Timothy Hager, phone conversation, October 6, 2005.



The Company has two command vehicles, two engines, a heavy duty rescue truck, a utility truck and a ladder truck. The ULI's planning standard for fire vehicles is 0.2 fire vehicles per 1,000 population. The Company exceeds this standard with a ratio of 2 vehicles per 1,000 population, indicating the fire district is well-equipped. A new tower ladder was purchased by the District in 2005 for the existing and future demands of the larger commercial properties within the district. The company has no plans to acquire additional fire equipment. However, additional bays are required for the vehicles. The fire company is exploring the expansion of the existing firehouse to add a second floor.

Mutual aid is provided to the Winona Lake Company by the Dan Leghorn Engine Company 1 also serving the fire district. Additional mutual aid is provided by fire departments in nearby districts. It is standard practice for both Companies of the District to respond to any structural fires. Other Town departments give the required mutual aid for the vast majority of second and third alarm assignments.

#### *Ambulance*

The Town of Newburgh Volunteer Ambulance Corps (TONVAC) provides emergency medical services in the community, and would provide service to the proposed Marketplace development. The Ambulance Corps building is located approximately 1/2-mile south of the Winona Lake Engine Company building on NYS Route 52 equidistant from the two proposed access points to the Marketplace located on NYS Route 52.

The Corps have approximately 60 volunteers, including four officers. There are approximately 20 certified emergency medical technicians (EMTs). Paid crews of two EMT's are on duty during the week between the hours of 6 AM to 6 PM, while evening and weekend shifts are filled on a volunteer basis. The Corps provide services to the Town of Newburgh, covering approximately a 22-square mile radius. The Corps have three ambulances and respond to approximately 2,500-3,000 calls per year. There is currently no service overlap with other ambulance providers. The Corps is located on South Plank Road less than 1/2 mile from the project site. Response time would be 1-2 minutes.<sup>4</sup>

Mobile Life Support Services, Inc., a private commercial paramedic service located on Kingsley Place in the City of Newburgh, acts as backup service to TONVAC. During weekends and evenings, calls are routed to Mobile Life if TONVAC does not have adequate manpower to respond. The Mobile Life Support Services location in Newburgh is approximately 1.5 miles from the project site.

#### Potential Impacts

According to the Fire Chief, the project would place limited demand on the Orange Lake Fire District, and more specifically, the Winona Lake Fire Engine Company 2. The company is located at the intersection of the proposed northerly access road with Meadow Avenue/NYS Route 52, and in very close proximity to the center should response be required. Response time to the site is expected to be less than five to seven minutes.

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<sup>4</sup> Captain Margit Maher, phone conversation, August 29, 2005.

According to Chief Hager, there is sufficient fire fighting equipment and vehicles between the two companies in the Orange Lake Fire District to provide fire protection to serve the Marketplace.<sup>5</sup>

The project would not result in an increased demand to the Goodwill Fire District given the limited amount of land (0.2 acres) located in that district, and the proposed use of the parcel for a segment of the easterly drive.

Like other commercial developments in the Town, it is expected that the project would result in a limited increase in responses to traffic accidents.

It is expected that demand would also be placed on the Town of Newburgh Volunteer Ambulance Corps (TONVAC). The majority of calls that the Tonvac responds to at existing commercial developments results from vehicular accidents at access points. The agency responds occasionally to emergency medical situations within commercial facilities.

#### Mitigation Measures

The retail buildings would be required to meet applicable standards of the New York State Uniform Fire Prevention and Building Code, and would also adhere to applicable regulations of Chapter, 107, Fire Prevention, of the Code of the Town of Newburgh.

The buildings would be constructed of masonry and steel Type 1 and 2. As per the Town's regulations, all buildings would be sprinklered. Hydrant locations have been situated in proximity to each retail building for firefighting purposes and are shown in the site plan accompanying this DEIS. The Town Fire Inspector will review the DEIS and accompanying plans, and any comments will be addressed as part of this SEQRA process.

The access drives to the Marketplace will be accessible at all times. The management company will be responsible for keeping the access lanes clear of vehicles and snow for purposes of ensuring adequate emergency access during all times of the year.

Fire hydrants will be kept clear of snow and will be marked for easy location. The water mains and fire hydrants on the Marketplace property would be maintained and serviced regularly in accordance with standards set forth by the Newburgh Fire Inspector. As per Chapter 107, hydrants will be inspected semiannually and after use, and inspection will include operation at least once a year. Hydrants will be required to be kept in good condition, and the central management company will keep a record of inspection and repairs to be made available to the Fire Inspector upon request.

The proposed access roads are designed to accommodate fire engines and truck traffic. There are three points of access, providing alternate routes in the event of an emergency. Emergency access is provided around all retail buildings on the project site. Specifically, fire lanes will be provided in front of the buildings, and unobstructed access is provided around sides and rear portions of the buildings.

The Marketplace development would increase property tax revenues that would accrue to the Orange Lake Fire District. Specifically, the project is expected to generate \$88,357 annually, representing a nine percent (9%) increase in tax revenues to the district. This

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<sup>5</sup> Chief Timothy Hager, phone conversation, October 6, 2005.

additional revenue would provide capital for increased appropriations for additional equipment, if required in the future. According to Chief Pillsworth of the Winona Lake Engine Company, this increased revenue could not be used for expansion of the existing facility or acquisition of new facilities.

As TONVAC is not anticipated to be impacted, no mitigation measures are proposed.

### **3.7.5 Solid Waste**

#### Existing Conditions

The single-family dwellings that are located on the project site at present generate limited quantities of household solid waste. The Town currently provides refuse services to the residential uses that comprise the project site. Existing commercial properties contract with private companies for refuse disposal. The Town does not provide these services to commercial properties.

The Town regulates the location of dumpsters as per Chapter 95, Dumpsters and Garbage, of the Code of the Town of Newburgh.

#### Potential Impacts

According to industry standards, a shopping center generates approximately 2.5 pounds per 100 square feet of space.<sup>6</sup> Based on this standard, the project would generate 21,250 pounds of solid waste per day, or 10.6 tons of waste per day.

Solid waste would be collected by a private carter as is the case with other commercial properties in the Town of Newburgh. As commercial carters would handle the collection and disposal of solid waste generated by tenants of any proposed retail facility on the project site, specific disposal sites may vary depending on the arrangements made by the solid waste carter.

It is expected that the large-format tenants would contract separately to handle waste services, and the central management company would contract with a solid waste carrier to cart waste from the lifestyle center.

Solid waste generated on the site would be collected from individual collection points and stored in dumpsters or compactors located to the rear of the buildings. The DEIS shows the location of these facilities.

Recycling is mandatory in Orange County and the Town of Newburgh. The following items must be recycled in Orange County:

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<sup>6</sup> *National Solid Waste Management Association, 1990.*

Aluminum Foil	Milk cartons
Chipboard/Boxboard	Notebook & Construction Paper
Computer/Photocopy/Fax Copy Office Paper	Corrugated Cardboard
Soft Covered work books & Paperback books	Juice Boxes
Telephone Books	Junkmail
White Envelopes	Kraft Paper (brown grocery bags)
White Refrigerated/Frozen Food Containers	Magazines & Catalogs

### Mitigation Measures

All solid waste storage areas will be screened on four sides by a fence enclosing the dumpster or compactor area. A separate dumpster enclosure consisting of a six-foot high fence of opaque materials and self-locking gates will screen and secure the dumpster locations, or, alternatively, the dumpsters will be housed in the building or loading area within the rear service area depending upon the design of the individual tenant's building.

The storage areas will be located at the rear of the buildings, along a service drive. A buffer between the proposed development and existing residential uses along the northerly property line will be provided as described in Section 3.10, Visual Resources.

Large format retailers would be expected to retain a pest management service to maintain the individual store dumpster locations. The central management company would be responsible for retaining a pest management service to maintain dumpster areas associated with the lifestyle center. Maintenance typically includes such measures as spraying and baiting.

### **3.7.6 Water Service**

#### Existing Conditions

Based on information provided by the Town Engineer and contained in the Town of Newburgh 2005 Comprehensive Plan, the Town provides water supply service to approximately 5,600 to 5,800 customers from one water supply district. Most developed areas in Town are served by this municipal water system. The Town's Chadwick Lake Reservoir and the New York City-owned Delaware Aqueduct serve as the Town's two water supply sources. Combined, these sources can safely yield approximately 5.2 million gallons per day (MGD).

The main water supply line that provides water to Route 300 and a majority of areas in the Town west of the NYS Thruway and areas south of I-84 is a 16-inch water main flowing south from the Town Water Filtration Plant several miles north of the Marketplace site. This 16-inch line also branches off to the east along Route 52 near the intersection of Routes 52 and 300 and flows generally southeast along Route 52. Water pressure within the existing 16-inch main is expected to be adequate based on the results of a preliminary water supply analysis conducted by the Applicant's engineer. The analysis, based upon Insurance Services Office Hydrant Flow Data Summary dated July 9, 1996, furnished by the Town Engineer, anticipates a maximum domestic flow of 1100gpm at a static pressure of 35psi with an anticipated maximum fire supply of 1580gpm at 20psi can be delivered to the highest point on the site.

Current water demand in the Town of Newburgh is approximately 2.8 MGD with a peak demand of approximately 3.7 MGD. Generally, water allocation to municipalities served by New York City (NYC) water is based on per capital consumption of NYC users multiplied by the resident population within the water district. Since the standards for NYC users are presently higher than that needed in Newburgh, the Town is in a unique position that current demand levels for water are below that which is available. Using the current peak demand level of 3.7 MGD, this leaves approximately 1.5 MGD available for future use.

#### Potential Impacts

The estimate of water demand is based on the amount of wastewater that would be generated by the development using flow rates published by the NYSDEC, and taking into consideration that waste flow represents 90 percent of the water used, with the balance being consumed for landscaping or lost through evaporation. As noted in the following section, the operation of 850,000 square feet of commercial space is projected conservatively to require approximately 117,000 gallons of water per day.

According to the Town Engineer, there is adequate capacity available with the existing water source to meet the water demands of this project.<sup>7</sup>

All new water mains on site and appurtenances will be installed at no cost to the water district. All work will be done in accordance with the standards and specifications of the Town of Newburgh and the Orange County Department of Health. The proposed routing of water mains is shown in the detailed Utility Plan (SP - 2.1) accompanying this DEIS. To further improve water flow and supply to the Marketplace, the plan provides for looping the proposed water main extension for the Marketplace in a northerly direction to connect into an existing 12-inch water main on New York State Route 52 (South Plank Road) near its intersection with Powder Mill Road. This looped plan will have the added potential benefit of providing a redundant water supply to area residents and businesses in the event of any emergency. However, public dedication of the looped portion of the water main is required to comply with local health department standards.

Water pressure within the existing 16-inch main is expected to be adequate based on the results of a preliminary water supply analysis conducted by the Applicant's engineer. The analysis, based upon Insurance Services Office Hydrant Flow Data Summary dated July 9, 1996 furnished by the Town Engineer, anticipates a maximum domestic flow of 1100 gallons per minute (gpm) at a static pressure of 35 pounds per square inch (psi) with an anticipated maximum fire supply of 1,580 gpm at 20 psi can be delivered to the highest point on the site.

The Applicant is also investigating an alternative to loop the water main in the Fern Avenue area for possible future connection of these homes. A private easement may need to be acquired to provide water to these residences.

#### Mitigation Measures

As no impacts relating to water services are anticipated, no mitigation measures are proposed.

#### **3.7.7 Sewage Disposal**

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<sup>7</sup> Jim Osborne, phone conversation, October 7, 2005.

### Existing Conditions

Based on information provided in the Town's 2005 Comprehensive Plan Update, the Town provides sewer service to approximately 3,200 customers in 10 separate sewer districts. The project site is located within the Crossroads Sewer District. In the early 1980's, when the Crossroads Sewer District was formed, the Town entered into an intermunicipal agreement with the City of Newburgh to treat two (2) million gallons per day (mgd) of wastewater at the City of Newburgh Wastewater Treatment Facility.

In August 2000, disagreements between the Town and the City of Newburgh over sewage treatment fees and new capacity resulted in the Town placing a moratorium on all new sewer connections. The City and the Town have worked out their differences, a new intermunicipal agreement has been executed and a two million gallon per day addition to the City sewer plant is under construction. The sewer plant addition is expected to be completed and operational in late-spring early summer of 2006.

The Marketplace site is serviced by two major sewer trunk lines, a 10-inch line in Route 300 and an 21-inch gravity line that is located on the easterly side of the site behind the residential homes along Brookside Avenue. Both these sewer trunk lines merge farther south and discharge to the City of Newburgh sewer plant. According to the Town Engineer, both trunk lines have capacity to service the Marketplace. Based on the topography, it is anticipated that all Marketplace will connect into the Route 300 (Union Avenue) trunk line. Connection will require the installation of a primary and secondary pump station.

The proposed pump station will be fed by an on-site network of newly constructed gravity sewer lines to be located north of the access road in the vicinity of the proposed lifestyle center. All sanitary sewage generated by the Marketplace will flow through this pump station and be conveyed to the existing 10-inch main located in Union Avenue (telecommunication with Jim Osborn, 1/24/06). The proposed secondary pump station, located in the rear of Building B, is expected to receive flow from only two buildings, Building E and Building 2. Sewage entering this secondary pump station will be pumped to the newly installed on-site gravity sewer lines for conveyance to the primary pump station.

### Potential Impacts

Using NYS DEC flow rates published in the Design Standards for Wastewater Treatment Works of Intermediate Sized Sewage Facilities (1988), a shopping center is estimated to generate 0.1 gallons of wastewater per day per square foot of gross floor area. It is also expected that 50,000 square feet of space would be used by restaurants and other food establishments. These uses would demand approximately 35 gallons per day per seat. It is estimated that 50,000 square feet of restaurant space could support 720 seats. Thus, the shopping center is expected to generate 80,000 gallons per day, and the restaurants would generate 25,200 gallons per day, for a total demand of 105,200 gpd.

Upon expansion of the wastewater treatment plant, it will have sufficient capacity to process and treat the effluent generated by the Marketplace development. Thus, no impacts to the Town's wastewater system are anticipated. The routing of sewer lines is shown on the detailed Utility Plan (SP - 2.1) accompanying this DEIS.

With the two million gallon per day wastewater plant expansion, the Town Engineer has assured the developer that there will be sufficient capacity to service the Marketplace and its estimated flow.

Mitigation Measures

As no impacts relating to wastewater treatment services are anticipated, no mitigation measures are proposed.

### **3.8 Noise**

#### **3.8.1 Existing Conditions**

##### Introduction

Existing and future noise levels at and in the vicinity of the Marketplace project site were examined to assess the potential noise effects that would be introduced by the Marketplace development. Multiple noise sources associated with the project were considered. Noise would be generated by project-related cars and trucks as they circulate through the roadway network to access the site. Second, there is the potential for noise to be generated by new activities on the site itself; this would be mostly related to internal traffic circulation and truck loading and unloading activities, and noise from the rooftop HVAC equipment. Finally, there is the possibility of increased noise exposure at certain locations due to the clearing and grading of the site during project construction. The final concern also relates to how noise from existing highway and aircraft activity may change after the site is cleared and graded and the project has been constructed.

Construction of the Marketplace will require site clearing and grading . Accordingly, it is valuable to examine changes in lines-of-sight between highway noise sources and sensitive receptors. It is also valuable to examine whether or not existing vegetation on the site currently dampens any overhead aircraft noise at nearby locations, and how construction of the Marketplace would affect the dampening of noise levels.

##### Report Methodology and Summary of Findings

This report covers the following items:

- Potential impacts of site clearing on noise including highway noise and aircraft noise
- Potential impacts of additional project automobile and truck traffic
- Potential impacts associated with truck loading and unloading activities
- Potential impacts associated with trash compaction and refuse pickup activities
- Potential impacts of noise generated by traffic on new access drives
- Potential impacts associated with noise generated by heating, ventilation, and air conditioning (HVAC) systems
- Potential short term impacts associated with site clearing, grading, and project construction

"Sensitive" noise receptors in the vicinity of the project site include the following:

- Brookside Avenue residences
- Hilltop Avenue residences
- Wintergreen Avenue residences
- Charlile Circle residences
- Starrow Drive residences
- Algonquin Powder Mill Park, near the pond

A number of noise attenuation strategies would be incorporated into the project plan. These would include the careful placement of trash compaction equipment, the placement of sound attenuating walls to shield affected residences from a direct line-of-sight to HVAC systems, portions of the new eastern access drive off NY 52, and truck loading areas. The results of the



analyses presented below indicate that project construction, along with the sound attenuating strategies outlined above, would result in noise levels similar to those that currently exist. The greatest increase in noise would be a 2 dBA increase at one location. By comparison, a 3 dBA increase in noise is just barely perceptible. Therefore, the study concludes that there would not be significant adverse project impacts related to noise.

### Noise Characteristics

Noise can be defined as undesirable or "unwanted" sound. Even though noise is somewhat subjective, it affects the full range of human activities and must be considered in local and regional planning. Most of the sounds heard in the environment are not composed of a single frequency, but are a band of frequencies, each with a different intensity or level. Levels of noise are measured in units called decibels (dB). Since the human ear cannot perceive all pitches or frequencies equally well, these measures are adjusted or weighted to correspond to human hearing. This adjusted unit is known as the A-weighted decibel, or dBA.

Sound energy disperses over distance, so that a doubling of distance from a point-source of noise such as an air conditioner causes a 6 dB decrease in noise, and a doubling of distance from a line-source of noise such as the traffic stream on a highway causes a 3 dB decrease.

Since dBA describes a noise level at just one instant and since ambient noise levels are constantly varying, other ways of describing noise levels over extended periods are needed. The commonly used descriptors are the  $L_{eq}$ ,  $L_5$ ,  $L_{10}$ ,  $L_{33}$  and  $L_{50}$ .

$L_5$ ,  $L_{10}$ ,  $L_{33}$  and  $L_{50}$  are the levels of noise that are exceeded 5, 10, 33 and 50 percent of the time during the period of measurement.  $L_{10}$  is normally taken as the mean of the peak noise levels during the passage of vehicles on a roadway. The time equivalent noise level, or  $L_{eq}$ , is defined as the level of continuous sound containing the same amount of acoustical energy as the fluctuating sound over the same period.  $L_{eq}$  is the average noise reading over a period of time.

$L_{eq}$  is used in the prediction of future noise levels, by logarithmically adding the contributions from new noise sources to the existing levels, and in relating annoyances to increased noise levels.  $L_{eq}$  is being increasingly recognized as an adequate noise measure by national and international regulatory agencies. The  $L_{min}$  and  $L_{max}$  are the highest and lowest discreet readings over the course of the survey period.

A one-decibel change in noise is the smallest change detectable to the human ear under suitable laboratory conditions. However, under normal conditions, a change in noise level of two or three decibels is required for the average person to notice a difference. Tables 3.8-1 and 3.8-2 show community perception of noise change and response to increased levels.

Environmental noise is considered with regard to several factors, including *level* - which relates to perceived loudness of a noise - as well as character, duration, time of day and frequency of occurrence. The level of a noise is measured and expressed in decibels (dB). Commonly, a standardized A-weighting is applied to sound levels to correct for certain characteristics of human hearing. The A-weighted sound level (dBA) is useful for gauging and comparing the subjective loudness of sounds.

Table 3.8-1 Perception of Changes in Noise Levels	
Change (dBA)	Average Ability to Perceive Changes in Noise Levels Human Perception of Change
2-3	Barely perceptible
5	Readily Noticeable
10	A doubling or halving of the loudness of sound
20	A dramatic change
40	Difference between a faintly audible sound and a very loud sound
Source: Bolt Baranek and Neuman, Inc. Fundamentals and Abatement of Highway Traffic Noise, Report No. PB-222-703. Prepared for Federal Highway Administration, June 1973.	

Table 3.8-2 Community Response to Increases in Noise Levels		
<i>Estimated Community Response</i>		
Change (dBA)	Category	Description
0	None	No observed reaction
5	Little	Sporadic complaints
10	Medium	Widespread complaints
15	Strong	Threats of community action
20	Very strong	Vigorous community action
SOURCE: International Standard Organization, <i>Noise Assessment with Respect to Community Reactions</i> , 150/TC 43. (New York: United Nations, November 1969.)		

To understand the potential for noise impacts, it is helpful to understand what levels of noise are generated by different activities. Table 3.8-3, below, indicates noise levels associated with common activities.

For traffic noise, if a proposed project results in a doubling of traffic (expressed as PCEs, or passenger car equivalents) on the regional and local roads, then the increase in noise is approximately 3 dBA. A noise level increase of 3 dBA is a barely perceptible increase in noise. Accordingly, if a project does not result in a doubling of traffic on any area roadways, then a traffic noise impact is not likely, and no further analysis is warranted. However, if a proposed project results in a doubling of traffic at any location, then some level of noise modeling is generally required to determine expected increases in noise.

Table 3.8-3 Noise levels of Common Activities	
Activity	Noise Levels in dBA
Rock Concerts	110
Subway Platform	100
Sidewalk, Passing Truck	90
Sidewalk, Typical Highway	80
Typical Urban Area	60-70
Typical Suburban Area	50-60
Quiet Suburban Area at Night	40-50
Typical Rural Area at Night	30-40
Isolated Broadcast Studio	20
Audiometric Booth	10
Threshold of Hearing	0
Sources: Cowan, James, <i>Handbook of Environmental Acoustics</i> , 1994. Egan, David, <i>Architectural Acoustics</i> , 1998.	

For noise associated with on-site activities such as internal auto and truck circulation, it is important to quantify the expected levels of noise for each source, and to calculate the change in noise that can be expected at any sensitive nearby receptors including homes, schools, hospitals, and the like. Critical aspects of these calculations include source levels, distance to sensitive receptors, and any barriers that may be present, or may be constructed as part of the project, that would block the direct line-of-site between noise sources and receptor locations.

#### Noise Attenuating Wall Characteristics

Noise barriers are often built to protect sensitive noise receptors from new noise sources. Generally, by just blocking the line of sight between source and receptor, a 5 dBA decrease in noise can be achieved. For every meter that a barrier extends above the line of sight, an additional 1.5 dBA decrease can be achieved. Practically, a 10 dBA decrease is easily achievable, a 15 dBA decrease is difficult to achieve, and a 20 dBA decrease is very difficult to achieve.

For most noise barrier applications, any sound that is transmitted through the barrier can effectively be ignored since it will be very low compared to the diffracted noise – i.e., the noise that bends around the top of the barrier. Therefore, if a 10 dBA decrease is desired, any material that absorbs more than 10 dBA would be sufficient. Examples of transmission loss for various materials are presented below:

Material	Transmission Loss (dBA)
Concrete Block	34
Steel (22 ga)	20
Wood, Fir (0.5")	18
Plywood (0.5")	20
Plywood (1.0")	23

Source: Federal Highway Administration

When sound encounters a solid barrier, the sound is reduced, but not stopped, because some of the sound bends around and over the barrier. The smaller the barrier, the less of this

"diffraction" occurs. A thin barrier gives a single diffraction, while a thick barrier gives a double diffraction with more noise reduction.

Small, when referring to a barrier, can mean narrow across the ground, or short in the vertical direction. Therefore, a telephone booth is narrow so it provides no reduction, while a wide building would give a much better acoustic shadow. Likewise, a building is higher than a fence so it shields sound better.

Of course, this assumes the sound source is on the ground, and the person who is receiving sound is also on the ground, on the other side of the barrier. When either the source or the listener receiver is elevated so that a direct line of sight remains, the barrier no longer functions. Bass sounds such as engine noise are not reduced well by barriers.

Traffic is shielded by highway noise barriers because the barriers are:

- a. Solid; and
- b. They are tall and close to the source of the sound so the angle of diffraction over the barrier is steep.

#### Sound Reduction from Vegetation

Outdoor sound diminishes with distance traveled. Forests and vegetation, as well as ground cover, provide a small but measurable "excess attenuation". The reason it is called "excess" is because the long distances themselves cause most of the dissipation.

This excess attenuation is meager because even "dense" summer forests, though visually opaque, are not solid, nor are they tall enough and/or close enough to either the sound source or receiver so as to make a steep angle of diffraction over the "barrier".

The excess attenuation is considered only when long distances are traversed. Many forests are hundreds or thousands of feet deep. Even when deep, these forests inherently have reduced attenuation because the source and receiver are far apart, forming a shallow angle of diffraction over the forest.

In the same way that bass sounds are not reduced well by barriers, these sounds easily penetrate vegetation. For example, for low frequency noises in the 125 Hertz band, a forest provides an excess attenuation of .03 dB per meter, or .01 dB per foot. Thus 300 feet of forest gives only 3 dB sound reduction. Three decibels is the smallest change of sound the average person can hear, in other words, almost negligible.

#### Stewart International Airport

The site is located approximately one (1) mile from Stewart International Airport. The residences north of the project site are approximately 1.5 to 2 miles from the end of the airport runways. Based on the Final Noise Data Resource Book for Stewart Air National Guard Base (March 2005), the majority of the residences north of the project site are outside the noise contours for the airport, indicating that noise levels caused by flight operations are below 65 dBA. The residences along Brookside Avenue are within the 65 dBA contour lines. These residences are also the locations closest to highway noise generated by I-84.

### *Airport Noise*

In March of 2005, the New York Air National Guard released a Noise Data Resource Book for Stewart Air National Guard Base. A noise contour analysis for Stewart ANGB aircraft operations and the Stewart International Airport was conducted. The subject site and environs are within the area studied by the aforementioned report.

Figure 4-1 of the report shows Land Use compatibility surrounding Stewart International Airport and Stewart ANGB (reproduced herein as Figure 3.8-1). That mapping shows no land use compatibility conflict for any lands north of Interstate 84 and east of the New York Thruway from Stewart Airport operations. Noise levels from the airport do not exceed federal guidance for land use at any location north of I-84 and east of the Thruway.

There is little to no difference between airplane noise on various sites based on cover - that is whether the sites are treed or paved. This was confirmed in the field. On June 10, 2005, Tim Miller Associates took simultaneous noise measurements at the parking lots of CB Driscolls which is located on Route 300 generally north and west of the subject site. Simultaneously, noise measurements were taken inside the Marketplace site, within the forested area, approximately 100 feet into the property from the Hilltop Avenue cul-de-sac. Airplane noise was measured at both locations simultaneously and measurements indicated that there was no discernible difference in noise levels as a result of airplane fly overs.

Noise energy is conveyed by waves moving through air molecules. There is no noise conveyed in a vacuum. In order to reduce noise between a source and a receiver, there must be a full blockage of the line of sight or the movement of the energy wave through the air by a solid barrier. Deciduous trees generally, do very little to reduce noise. The Federal Highway Administration has stated that "In general, plantings by themselves do not provide much sound attenuation." (Physical Techniques to Reduce Noise Impacts", FHWA.gov). This is discussed further below.

Runways at Stewart Airport are aligned with the most common prevailing wind, as the practice of taking off and landing into a headwind increases lift and maximizes safety. Runway 27, whose magnetic heading is 270 degrees, or due west, is most commonly used. This is because the wind is primarily coming from the west or southwest and therefore constitutes the safest headwind. In aviation, the last digit is dropped, making 270 into "27".

Runway 9, which is the same strip of asphalt as 27, but is used in the opposite direction, east (90 degrees), would be used when the wind is coming from the east or northeast. Winds from that direction are the exception and often occur in a "Noreaster", in other words, during a storm. These conditions not only occur less frequently, but less air traffic is flown during unusual or stormy weather.

Planes on approach to Stewart Airport runway 27 constitute the majority of traffic that will affect the neighborhood to the north and east of the site. Although there are military flights (sorties) that go directly over the houses, they are not frequent.

Planes use more power during takeoff than during landing in order to climb away from the ground as quickly as possible. Some jets use significant power during landing, to facilitate an emergency climb if the landing must be aborted. However, the majority of General Aviation aircraft, or "GA" (civil, private and business) greatly reduce power during landing, in many



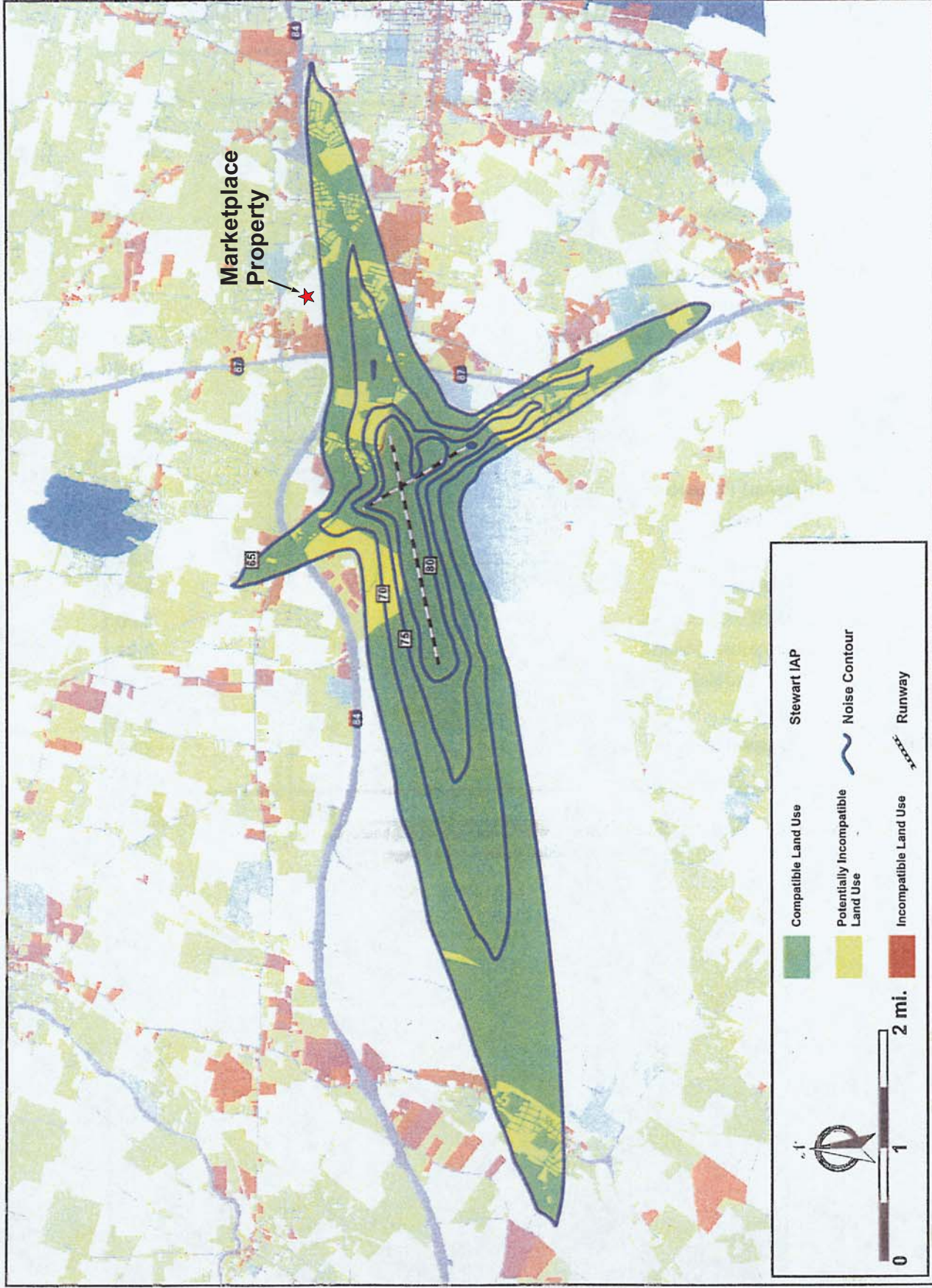


Figure 3.8-1: Land Use Compatibility Surrounding Stewart IAP and Stewart ANGB  
 The Marketplace at Newburgh  
 Town of Newburgh, Orange County, New York  
 Scale: Graphic

cases gliding without any significant power or noise during the last 100 feet of landing height.

GA creates much less noise than large military and commercial jet aircraft. At Stewart Airport, small GA constitutes the majority of flight operations 71,000 out of every 117,000 operations yearly. This data is from the Final Noise Data Resource Book for Stewart Air National Guard Base, March 2005.

Based on noise studies, the northeast residential area is generally located outside of the 65 dBA DNL contour line, and is considered an acceptable region for residential use.

#### *Aircraft Height vs. Noise*

Aircraft on approach to land (final approach or "final") at runway 27, the most common scenario, are well above 50 feet when passing 0.5 to 1.5 miles south of the northeast residential area. Since the glide slope, or vertical descending path to landing, is typically 3 degrees, the planes average approximately 750 feet high when passing the northeast residential area.

The last 50 feet of landing height is the most relevant to the noise issues in this location. Above 50 feet, most aircraft sound encounters no obstacles or barriers tall enough to reduce sound to the northeast residential area. Certainly at 750 feet, there are no effects from the terrain and forest.

Since aircraft were visible above the tree line on Hilltop Avenue, the other streets in the area see the aircraft at an even steeper angle. Therefore, all of the streets in the northeast residential area cannot rely on trees as a barrier, even if they were effective barriers.

#### Point Source vs. Line Source

A highway such as I-84, or the New York State Thruway, is not a point source of sound, but rather, a line source. This means that sound heard at a distance from the road would consist of noise from many locations: the nearest part of the road, as well as from farther parts of the road. As compared to a point source of sound, such as air conditioners, a line source such as I-84 radiates noise that does not get much quieter as you move farther away from it. A point source gets 6 decibels quieter for each doubling of distance, compared to 3 decibels per doubling for a line source.

#### Newburgh Noise Regulation

Chapter 125, Noise and Illumination Control, of the Town of Newburgh Code provides a performance standard for noise that applies to land uses in the Town. While there are no local regulations relative to temporary construction noise, upon completion and occupation of the proposed development, it will be subject to compliance with Town standards. The Newburgh Town Code indicates that except for noise emanating from the operation of motor vehicles on public highways and private roads (which are regulated by the NYS Motor Vehicle and Traffic Law), - the permissible intensity of noise for the foregoing between the hours from 8:00 a.m. to 10:00 p.m. and from 10:00 p.m. to 8:00 a.m., respectively, whether such noise is intermittent, impulsive, sporadic or continuous, is as follows. For uses in the RR, AR, R-1, R-2 and R-3 zoning districts:

- From 8:00 a.m. to 10:00 p.m.: sixty-five (65) decibels.
- From 10:00 p.m. to 8:00 a.m.: fifty-six (56) decibels.

For uses in the B, IB and I zoning districts:

- Between the hours of 8:00 AM and 10:00 PM, noise levels shall not exceed 80 decibels.
- Between the hours of 10:00 PM and 8:00 AM, noise levels shall not exceed 70 decibels.

The subject property is located within the IB zone.

The NYS Vehicle and Traffic Law Section 386) defines excessive or unusual motor vehicle noise as any sound of eighty-eight (88) decibels or more on the "A" scale as measured at a distance of fifty (50) feet from the center of the lane in which the vehicle is traveling.

It is noted that the Town Code has no provisions for occasional noise such as noise generated by warning devices (for example, truck and automobile horns), temporary construction activities, occasional landscaping activities (lawnmowers, leaf blowers, etc.), occasional delivery trucks (UPS, Federal Express), or overhead aircraft. Because the Town Code does not allow provisions for occasional noise to exceed the average noise levels, a strict interpretation of this code would indicate that the  $L_{max}$  level cannot exceed the thresholds outlined above (65 dB(A) daytime and 56 dB(A) overnight). Given this interpretation, there are a number of locations that are in violation of the Town Code standards. For example, the Stewart Airport 65 dB(A) contour covers a number of the residential properties along the northern boundary of the site. Stewart Airport is active around the clock, and so the noise generated by aircraft at the 65 dB(A) contour is in violation of the 56 dB(A) town standard for overnight periods.

As shown in the table 3.8-4 below, a number of locations along Brookside and Hilltop Avenues experience noise during the overnight period that exceeds the overnight Town Code standard. Clearly, landscaping activities and occasional truck deliveries would also likely exceed the town standards.

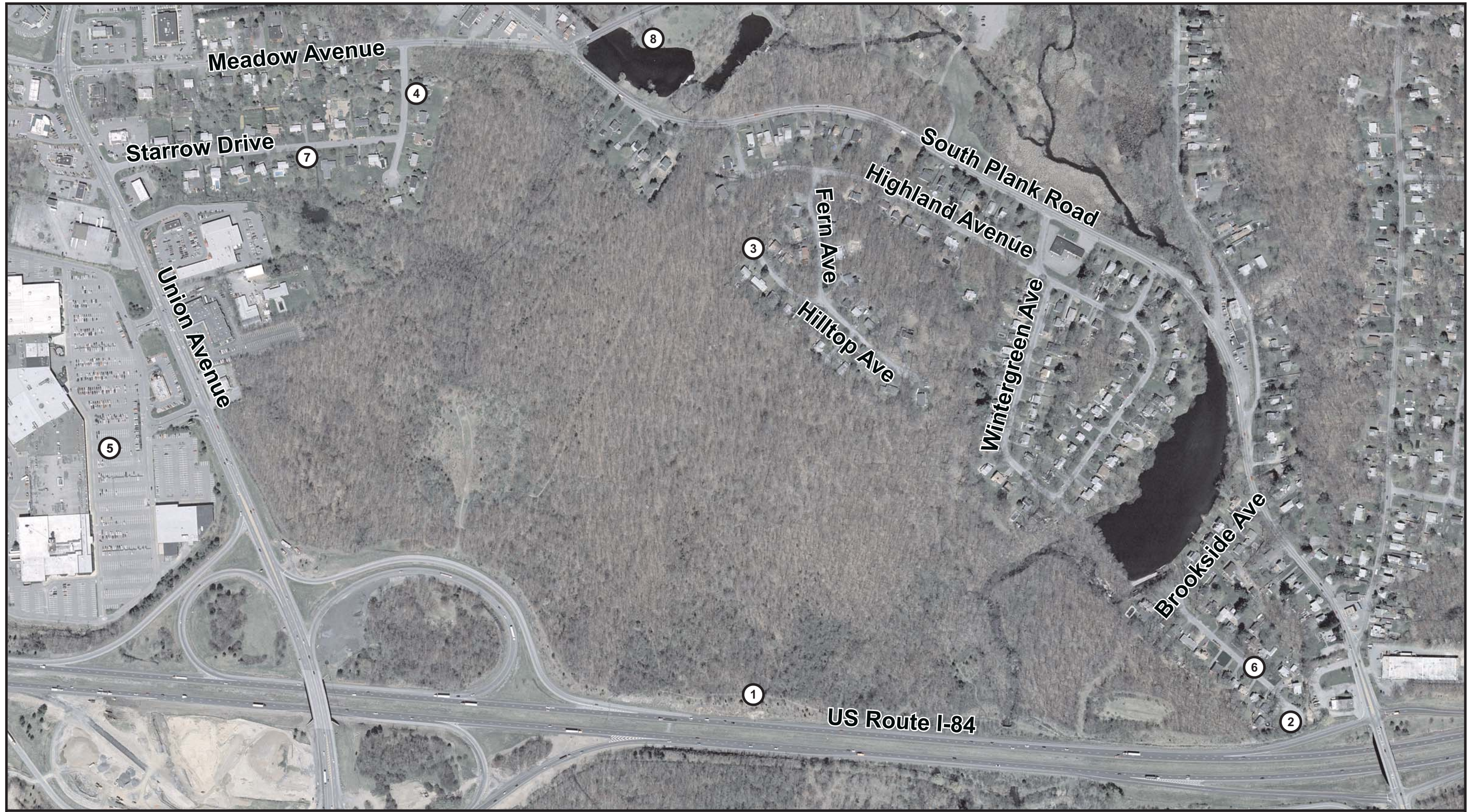
#### Ambient Noise Analyses

The project site is located adjacent to Interstate 84 and NYS Routes 300 and 52. The site is also near Interstate 87 (New York State Thruway) and Stewart International Airport. NYS Route 300 is a busy commercial arterial road. Auto and truck traffic volumes on the two interstate highways are considerable. The areas along the southern and western borders of the site are characterized by traffic noise from the interstates and Route 300, as well as occasional overhead aircraft noise.

There are several single-family residences located along NYS Route 52 and adjacent to the intersecting streets that border on the northern section of the project site. These areas are generally further from Interstates 87 and 84 (over 2,000 feet away), and are more suburban in nature than the commercial areas along NYS Route 300 to the west of the site. Noise levels in these areas are dominated by local traffic circulation, bird and insect sounds, and outdoor residential activities and other noise sources typical of a suburban environment.

Noise monitoring locations were chosen in consultation with Creighton Manning Engineering, LLP, consultants to the Town of Newburgh Planning Board. Field survey locations were chosen to coincide with areas that may be most affected by the proposed project. The noise monitoring locations are shown in Figure 3.8-2.





Ⓝ Noise Sample Location

Figure 3.8-2: Noise Monitoring Location Plan  
 The Marketplace at Newburgh  
 Town of Newburgh, Orange County, New York  
 Base: NYS GIS Clearinghouse, 2004 Aerial Photo  
 Approx. Scale: 1 inch = 450 feet



Ambient noise levels were monitored by Lemonides Heineman Associates (refer to Appendix H). Existing noise levels were collected at eight (8) locations in the site vicinity. The noise monitoring locations were chosen after consultation with the Town Planning Board engineer, taking into account the areas that are most likely to be impacted by the proposed project. As shown in Figure 3.8-2, the following locations were monitored:

- Site 1: 100 feet north of I-84, centrally located along Route 84 frontage;
- Site 2: Brookside Avenue cul-de-sac;
- Site 3: North end of Hilltop Avenue;
- Site 4: Charlile Circle, between Starrow Drive and Meadow Avenue;
- Site 5: Newburgh Commons parking area;
- Site 6: Brookside Avenue, 400 feet north of I-84;
- Site 7: Starrow Drive;
- Site 8: Algonquin Powder Mill Park, near the pond.

The proposed project has the potential to affect noise levels throughout the day. In order to accurately predict the effects of the project, two separate noise analysis periods were chosen to represent noise levels throughout the day. Noise data was collected for the first analysis period when background noise levels are highest, and therefore the cumulative noise levels after completion of the project could be expected to be at a maximum. The second analysis period was chosen to measure background noise when it is low, and therefore the net effects of the proposed project (i.e., the noise increment over the no build condition) could be expected to be greatest – this would also correspond to the period when the Town Code noise performance standards are most stringent.

The weekday PM peak hour between 4:00 and 6:00 was chosen to represent the first analysis period. The second analysis period, a weekday overnight period occurs between the hours of 9:00 PM and 12:00 Midnight.

The peak period noise monitoring survey was conducted on Thursday July 21, 2005, and Thursday September 8, 2005 between the hours of 4:00 and 6:00 PM. The recorded noise measurements are listed in Table 3.8-4a. The overnight readings were taken on Tuesday February 7, 2006 between the hours of 9:00 PM and 12:00 Midnight. These recorded noise readings are also shown in Table 3.8-4b.

<b>Table 3.8-4a</b> <b>Existing Ambient Sounds Levels (dBA) - Peak Period (4 - 6 pm)</b>						
<b>Location</b>	<b>L<sub>eq</sub></b>	<b>L<sub>max</sub></b>	<b>L<sub>min</sub></b>	<b>L<sub>5</sub></b>	<b>L<sub>10</sub></b>	<b>L<sub>50</sub></b>
Site 1: I-84	66.5	76.6	55.2	72.8	71.0	62.5
Site 2: Brookside #1	56.2	62.2	49.7	61.	59.9	54.1
Site 3: Hilltop Ave	48.9	63.5	36.9	58.1	56.1	40.1
Site 4: Charlile Circle	52.0	55.3	.51.7	53.5	53.4	52.0
Site 5: Newburgh Mall	64.2	66.8.	61.3	64.8	64.4	64.1
Site 6: Brookside #2	52.9	64.8	45.6	59.6	56.4	47.8
Site 7: Starrow Drive	52.2	62.4	51.9	54.0	53.7	52.2
Site 8: Town Park	66.5	67.0	61.0	66.8	66.6	66.5
Source: Lemonides Heineman Associates, 2005.						

<b>Table 3.8-4b</b> <b>Existing Ambient Sounds Levels (dBA) - Overnight Period (9 pm - 12 midnight)</b>						
<b>Location</b>	<b>L<sub>eq</sub></b>	<b>L<sub>max</sub></b>	<b>L<sub>min</sub></b>	<b>L<sub>5</sub></b>	<b>L<sub>10</sub></b>	<b>L<sub>50</sub></b>
Site 1: I-84	63.1	75.4	54.2	71.4	69.3	60.5
Site 2: Brookside #1	52.2	59.2	47.2	58.6	57.5	52.0
Site 3: Hilltop Ave	44.5	59.2	38.9	55.1	53.1	41.2
Site 4: Charlile Circle	45.2	52.3	39.4	49.5	48.5	47.0
Site 5: Newburgh Mall	58.2	62.0	51.3	58.6	57.9	56.5
Site 6: Brookside #2	49.9	61.9	42.0	56.0	53.8	44.5
Site 7: Starrow Drive	49.3	58.3	47.9	51.0	50.4	50.2
Site 8: Town Park	55.5	57.0	51.0	56.7	55.3	55.1
Source: Lemonides Heineman Associates, 2006.						

The recorded noise levels fell within the acceptable limits for all zoning districts for the daytime period. Although the average noise levels are within the Town Standard levels during the overnight period, a number of locations along Brookside and Hilltop Avenues exceed the Town Code limits for sporadic or occasional noise ( $L_{max}$ ) during this period.

As indicated in Table 3.8-4, existing noise levels are highest at Location 1, which is within the project site 100 feet from I-84. Noise at this location is affected by the traffic along I-84, and the maximum reading of 76.6 and 79.4 dB(A) was caused by tractor-trailer traffic. The area within the existing Newburgh Mall parking area had a daytime  $L_{eq}$  of 64.2 dB(A) and an overnight of 58.2 dB(A).

The daytime  $L_5$  level, or the level that is exceeded 5 percent of the time, is 64.8 dBA. These readings indicate that the noise level at this location is relatively stable, without large peaks. The ambient noise in the Newburgh Mall parking lot was mainly due to internal circulation of automobiles and also the noise from nearby NYS Route 300 traffic.

Noise levels in Algonquin Park are mainly associated with traffic on Powder Mill Road, and also waterfowl that are present in and around the pond.

Noise levels on Brookside Avenue are mainly associated with traffic noise from nearby I-84. Except for a thin tree line at the end of the cul-de-sac separating Brookside Avenue from I-84, nothing else blocks the line of sight to I-84 from the two Brookside Avenue locations. However, Brookside Avenue is at a slightly higher elevation than the highway at this location, and some of the tire noise may be reflected back and away from Brookside Avenue.

On Brookside Avenue, at a location 200 feet from I-84, the  $L_{eq}$  levels were 56.2 dBA (daytime). At a location 400 feet from I-84, levels were 52.9 dBA. These values compare to the  $L_{eq}$  of 66.5 at Location 1, just 100 feet from I-84. Based on these measurements, the highway noise levels drop off as the distance increases from the highway at a rate of approximately 3.3 dBA when doubling the distance from 200 feet to 400 feet. This corresponds to what would be expected. As discussed above, a doubling of distance away from a line source such as a highway generally results in a reduction of approximately 3 dBA.

Noise levels in the residential areas north of the site are lower than along Brookside Avenue and Algonquin Park. The  $L_{eq}$  levels along Starrow Drive and Charlike Circle are 52.0 and 52.2 dBA, respectively (daytime). The only noise sources observed during the readings were the passing of a small number of automobiles, and cricket noise. Noise levels at the Hilltop Avenue location are the lowest of those measured, with an  $L_{eq}$  of 48.9 dBA (daytime) and 44.5 dB(A) (overnight). Although there were occasional automobiles that drove by at this location, there was no observed cricket noise during the period that the readings were taken. Each of the readings in the residential areas north of the project site are within the Town of Newburgh Code limits of 65 dBA for daytime periods. However, as noted above, there are occasional violations of the overnight threshold because the Town Code does not have explicit provisions for occasional or sporadic noise that may exceed the average noise levels.

### **3.8.2 Potential Impacts**

#### Future No Build Noise Conditions

In the future and assuming that the proposed project is not constructed (2008 No Build conditions), there would be growth in background traffic on the interstate highways and on NYS Route 52 and NYS Route 300. The information presented in the traffic study indicates that background traffic is expected to grow by approximately 1.5 percent per year. In addition, traffic from several projects proposed in the Town of Newburgh was added to this background growth rate.

As discussed above, traffic would have to double on nearby roads in order for there to be a significant increase in traffic noise levels. Absent the proposed project, the site would remain in its current state, so there would be no change in sound levels due to any grading, clearing or construction on the site.

#### Future Build Conditions

As per the Final Scope, the noise analyses considered changes in ambient noise levels that would result from vehicular and truck traffic accessing the project site. This analysis also reviewed the potential change in the noise environment as a result of airport fly overs and the

removal of vegetation from the subject site. An analysis has also been prepared concerning rooftop heating, ventilation and air conditioning (HVAC) units, and trash compaction activities.

### *Traffic Noise*

Traffic noise is a relatively constant noise source and is primarily determined by the volume of traffic, the types of vehicles, and the speed at which these vehicles are traveling. Since it is a relatively constant and not a sporadic noise, the best noise descriptor is the average noise level, or Leq.

To evaluate the potential for traffic noise impacts on the existing roadways, a comparison of traffic volumes was conducted looking at the increase in traffic between the No Build and the Build conditions. The project traffic would be most concentrated along NYS Route 300 and NYS Route 52. The volume comparison analysis for the critical intersections of concern is presented in Appendix H of this DEIS. The proposed project would not result in a doubling of traffic at the critical locations identified. Without at least a doubling of traffic, no adverse project noise impacts relating to increases in traffic on the existing roadway network are anticipated.

The traffic volume comparisons are made at the traffic study locations, which are located along NY 52, NY 300, and the major intersections along these roadways. The proposed project would not add any new traffic to the residential roads including Hilltop, Brookside, and Wintergreen Avenues. Therefore, there would be no increase in noise due to new traffic on the existing roadways at any of the sensitive receptor locations identified.

### *New Access Drives*

An additional level of analysis is needed to quantify the noise levels that are expected due to the operation of the new site access drives; since there is no traffic at these locations under existing conditions, it is not possible to project future noise levels based on a change in traffic volumes.

There would be three new access drives constructed to serve the project site; one would be constructed along NYS Route 300, one would be on Route 52 at Powder Mill Road, and one would be on NYS Route 52 at 5<sup>th</sup> Avenue. There are no sensitive noise receptors adjacent to the new site drives on NYS Route 300 and new traffic on these site drives would only affect noise levels on the project site itself.

The new site drives on NYS Route 52 would carry auto and truck volumes through new sections of access drives that do not currently exist. In particular, the improved intersection at the NYS Route 52/Powder Mill Road would bring vehicular traffic into and out of the site passing to the east of Starrow Drive. The new site drive on NYS Route 52 at 5<sup>th</sup> Avenue would bring project cars and trucks close to the end of the cul-de-sac at Brookside Avenue.

In order to determine the effects of the northern and eastern access drives that intersect with NYS Route 52, a number of factors were considered which would have an effect on determining future noise levels - the number of cars and trucks, the speed at which these vehicles will be traveling, the distance to the nearest sensitive receptors, and any physical barriers between the new roads and the sensitive receptors.

As shown in the traffic study, the worst-case period for traffic is the Saturday peak hour, when 379 new vehicles would be accessing the site to and from the new Meadow Avenue drive, and 796 new vehicles would be accessing the site to and from the new 5<sup>th</sup> Avenue drive. Therefore the worst case location is the 5<sup>th</sup> Avenue (eastern) site drive. Any potential noise effects would be concentrated at the residences along Brookside Avenue represented by Location 6. It is noted that the other location along Brookside (Location 2) would become part of the project site and so there would be no sensitive noise receptors there.

The new access drive at 5<sup>th</sup> Avenue would be built over several existing residential lots that are part of the proposed project. That access road would be adjacent to several residential lots that would remain after project completion. As shown in the traffic study, this new road would carry approximately 800 vehicles per hour during the Saturday peak hour.

The number of delivery trucks would depend on the type of stores that would occupy the various buildings. The buildings along the northern portion of the site (i.e., those whose delivery vehicles would use the 5<sup>th</sup> Avenue access drive) would contain approximately 200,000 square feet of retail floor area. Trucks would primarily service the site in the weekday AM and mid-day periods, and as such would not overlap with the peak project hours which are the weekday PM and the Saturday periods. Because the type of retail uses which would occupy this space is not known at this time, an estimation of truck traffic was made based on general retail activity. According to Urban Goods Movement (Philip Habib, 1972), in the midday, the project would generate approximately 0.039 peak hour trucks per 1,000 square feet, or about 8 total truck trips per hour (4 in and 4 out) for this 200,000 square foot portion of the project. According to the FHWA's Highway Traffic Noise Report (which may be found at <http://www.fhwa.dot.gov/environment/htnoise.htm>), the noise generation of one truck is equivalent to that of 28 cars. Therefore, 8 trucks would be equivalent in noise levels to 224 cars. Because this is lower than the project's peak traffic volume during shopping hours, the peak shopping hour (Saturday – 800 vph on the 5<sup>th</sup> Avenue access drive) constitutes the project's worst case condition with regard to vehicle movements on the new access drives.

Based on the information presented above, the new site drive at 5<sup>th</sup> Avenue would carry similar traffic noise equivalents during its peak hour (Saturday) as NYS Route 52 currently carries during the PM peak hour (the section of NYS Route 52 between Powder Mill Road and 5<sup>th</sup> Avenue carries approximately 1,000 vph during the PM peak). In order to determine future noise levels near the new site drive, a noise reading was taken on the west side of NYS Route 52 between Powder Mill Road and 5<sup>th</sup> Avenue, at a location 50 feet from the edge of roadway for the southbound lane during the PM peak. The  $L_{eq}$  value at this location was 64.8 dBA.

Vehicular speed is related to noise (generally, the higher the speed, the higher the noise). At speeds as low as 18 MPH, it has been determined that a halving of speed results in more than a 10 dB(A) reduction in noise. Based on observations, the typical speed along this section of road was approximately 50 miles per hour (MPH). The applicant intends to post speed limit signs on the access roads restricting speeds to 25 mph. Therefore, the actual speeds along the new access drive in this location would be approximately half of the observed speed on NYS Route 52.

Based on the information presented above, it can be stated that the access drive noise level at points 50 feet from the new eastern access drive would be approximately 54.8 dB(A) during daytime periods. In the overnight periods, new traffic on the access drive would be significantly lower, and would approach zero after all the stores are closed.

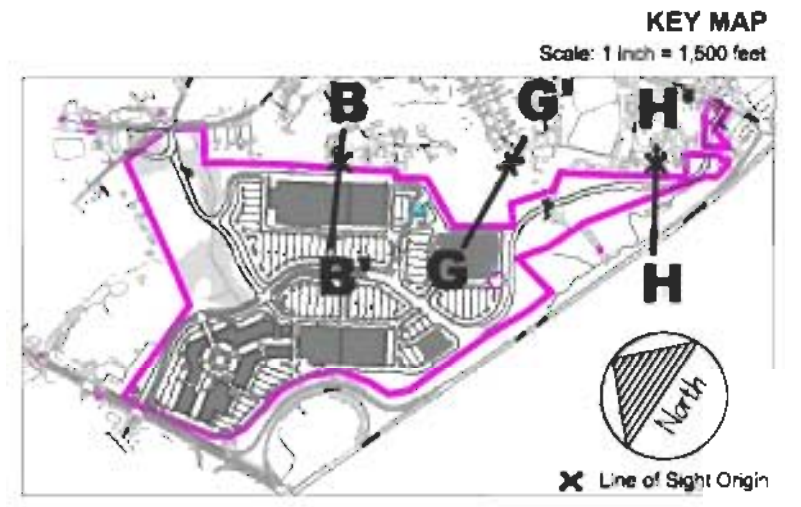
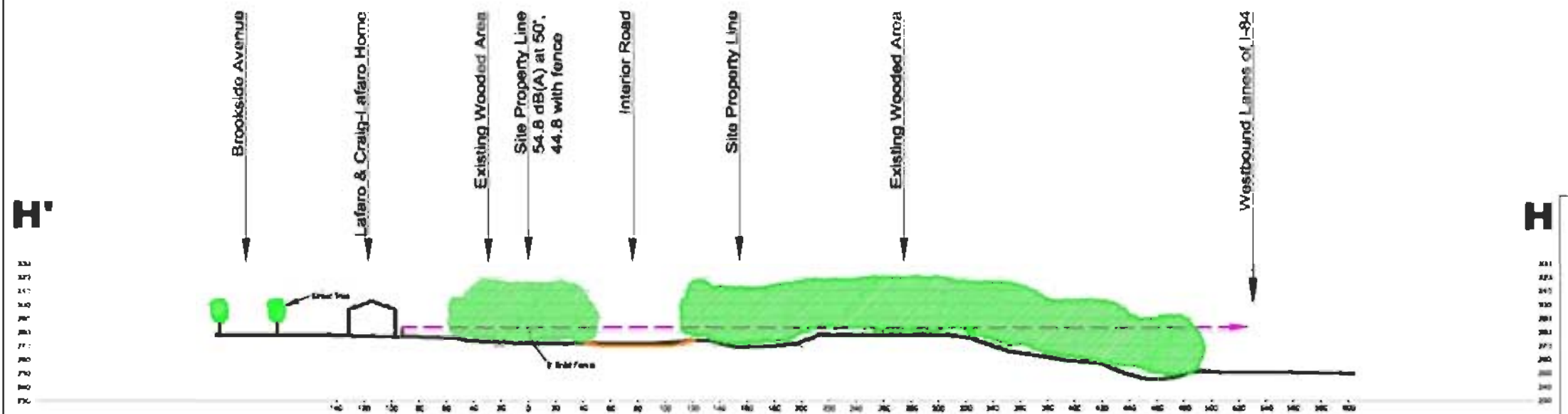
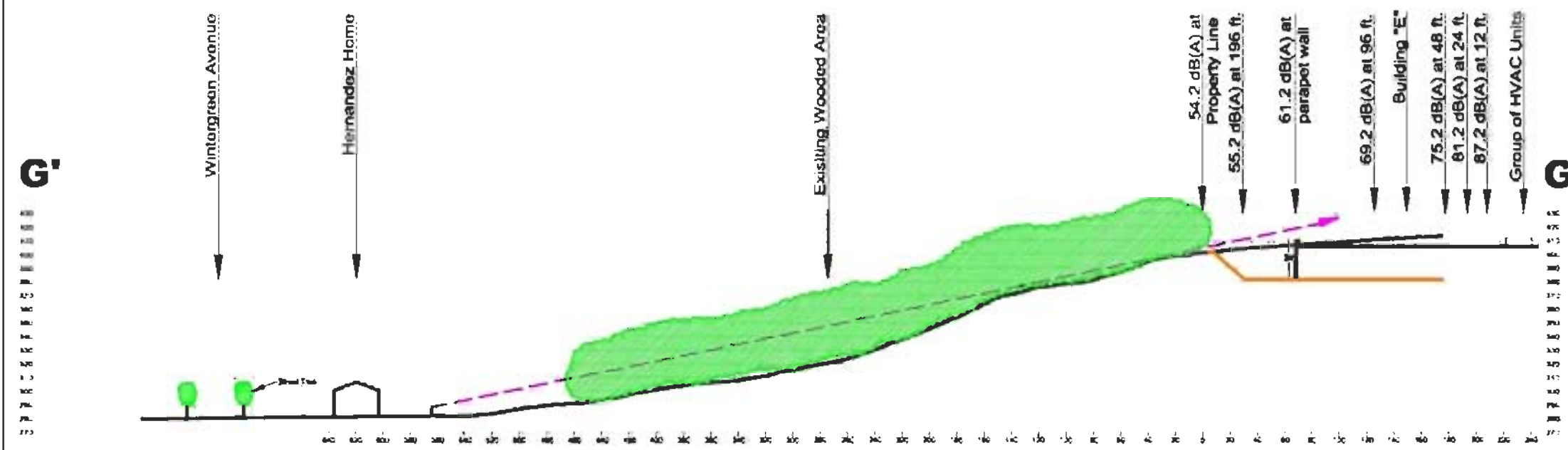
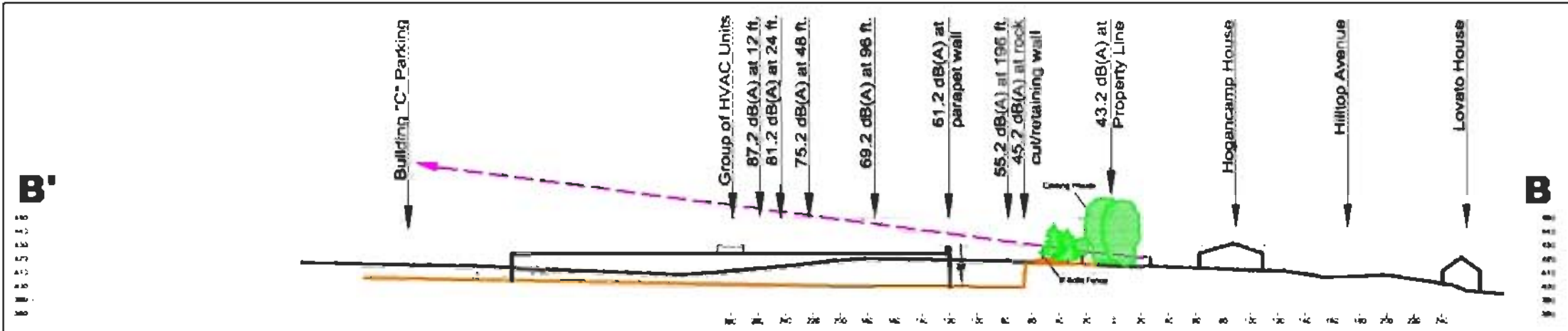


Figure 3.8-3: Cross Sections showing dBA from Source to Property Line

# The Marketplace

Town of Newburgh, Orange County, New York

Base Map Source: Divney, Tung, Schwalbe, LLP, 11/23/05

Prepared by:  
Tim Miller Associates, Inc.  
03/17/06 Scale as shown

A noise attenuating fence would be placed along the section of the eastern access drive to shield the Brookside residences from a direct line of sight. Such a noise fence would reduce the new access drive noise by 10 dBA. Therefore the noise from traffic on the access drive, at the residences along Brookside, is projected to be 44.8 dBA or less (Sight Line H on Figure 3.8-3). These projected values compare to the existing average measurements at this location on Brookside Avenue of 52.9 and 52.2 dB(A). Accordingly, the projected noise levels at the new access drive on Brookside Avenue would be negligible, and within the Town noise standards.

Because the Brookside residences represent the worst-case location for the eastern access drive, it can be concluded that there would be no significant noise impacts at the residences along Wintergreen Avenue, or along the other nearby roadways (Sight Line G on Figure 3.8-3).

At the western access drive that passes more than 400 feet from the residences along Starrow Drive and Charlike Circle, projected traffic volumes are 379 vph in the peak Saturday hour. This is less than half the volume along NY 52, and so there would be at least a 3 dBA decrease in noise compared to the NY 52 reading of 64.8 dBA, which results in 61.8 dBA. Accounting for the halving in vehicle speed brings this value down to 51.8 dBA. Since the distance to the nearest receptor is 400 feet, this results in three doublings of distance from the 50 foot reading location, or a 9 dBA reduction. This brings the overall traffic noise level down to 42.8 dBA.

*Truck Traffic and Loading*

Truck traffic to the site will vary from day to day and week to week depending upon the season and the variation in shopping demand that occurs at the development. Truck deliveries would cause sporadic noise only during certain hours of the day. They will not create a constant noise source. Therefore, the best noise descriptor for the truck circulation activities would be the L<sub>max</sub>. Truck traffic would primarily affect the residences along the northern portion of the site along Hilltop Avenue represented by Location 3.

Truck activity at the proposed development will cause noise levels similar to noise measurements indicated in Table 3.8-5.

Table 3.8-5 Results of Manual Sound Level Measurements at Retail Site in Westchester County	
Event and Measurement Condition	Maximum Sound Pressure Level (dBA)*
1. Large delivery trucks measured at approx. 200 feet away; 4 events.	64-68
2. Small vendor delivery truck measured at approx. 200 feet away; 7 events.	56-62
3. Waste collecting vehicle measured at approx. 200 feet away; 1 event.	69
* The numbers listed in this table represent the range of maximum sound pressure levels (dBA) recorded in the events measured. For example, 64-68 means that 68 dBA was the highest measurement of the four measurements taken and 64 dBA was the lowest of the four measurements. Source: Tim Miller Associates, Inc., 2005.	



The above measurements taken at an existing retail development in Westchester County are in the range of peak sound levels from truck operations that could be anticipated from the loading area of the proposed Marketplace development.

The proposed truck circulation areas would be shielded from most of the existing residences by the cut that will be created for project construction. For residences that are not shielded from the truck circulation areas, a sound-attenuating wall would be constructed to block the line of sight between the truck areas and the residences. By blocking the line of sight between the residences and the truck activities with either the sheer rock wall, or a noise attenuation wall, the actual noise levels at the residences would be reduced by at least 10 dB(A). Therefore, the maximum noise levels occurring at the residences on Hilltop Avenue would be 59 dB(A). Since the existing maximum noise levels at this location are 63.9 and 59.2 dB(A) for daytime and overnight periods, respectively, there would be no adverse noise impact associated with the proposed project at these locations.

#### Noise Impact On Hilltop Avenue Residents

This section evaluates the potential impact this development may have on the Hilltop Avenue residents' quiet enjoyment of their property. Two project-related noise sources are of concern for these locations: rooftop HVAC equipment, and on-site truck movements. The HVAC equipment would be a source of essentially constant noise, while truck movements occur sporadically, and are a source of intermittent noise.

Using the same sight line diagram that was used for visual impact, Sight Line B was chosen to determine if there would be any noticeable difference in noise levels above the existing conditions.

#### *Impacts of HVAC*

The HVAC analysis described below assesses the effects the project's HVAC equipment would have on ambient noise. It shows that the humming of the HVAC units as perceived from the back yards of the homes on Hilltop Avenue would be below the existing ambient noise at that location. Because of noise-buffering measures incorporated into the project, specifically the building's parapet wall and the sound-barrier fence to be installed as a project component, as well as the project's distance from these homes, Hilltop Avenue residents would experience no significant adverse noise impacts from HVAC equipment.

An additional study was done to determine the potential noise generated by HVAC units at specific locations on Hilltop Avenue. Sight line B on the diagram of the sight line viewshed was chosen as the closest location to the units, therefore having the greatest potential for impact on ambient noise. Other homeowners would experience less of an impact.

The matrix below shows how the sound decreases from the point of generation to the back yards of the homes. Approximately half of this decrease is due to the distance from the noise generator to the receptor location, and the other half is due to the noise-attenuating features incorporated into the project. What the matrix below shows is that the noise from the HVAC drops to 43.2 decibels by the time the sound reaches the property line. The existing ambient background noise, at the existing residences, is 44.5 during the nighttime and 49 during the day. Since the noise generated by the HVAC, as perceived at the backyards, is lower than the existing ambient noise, it would not be noticeable. This is graphically represented by Sight Line B on Figure 3.8-3.

<b>Table 3.8-6 HVAC Noise Dissipation Over Distance Marketplace at Newburgh</b>											
Single HVAC Unit at 12' away	Four add'l Units	24' away	48' away	96' away	Bldg wall	192' away	Retaining wall and fence	Prop. Line 270' away	300' from source	384' away	Inside house
	(+)5.5	-6	-6	-6	-8	-6	-10		-3	-6	-20
81.7	87.2	81.2	75.2	69.2	61.2	55.2	45.2	43.2	42.2	36.2	22.2

Sight line B is the worst-case condition. HVAC-generated noise at Sight line C would be somewhat lower due to its greater distance from the adjacent residences, and Sight lines A and D even less so.

#### Impacts of Truck Traffic on Hilltop Avenue Residents

The analysis below studying the impact of trucks loading and unloading shows that intermittent noise from truck movements is also within the range of the existing intermittent noise. Intermittent noise from truck movements could be as loud as 53.5 decibels from the trucks' back-up alarms, while existing intermittent noise ( $L_{max}$ ) is 59.2 decibels during the overnight period and 63.5 during daytime. This means that although the backing up and unloading of trucks could be heard above the ambient noise, it would be below the levels of intermittent noise that already occurs from existing sources.

To assess the potential for noise impacts from on-site truck movements, two conditions were considered: a large diesel truck moving at roughly 10 MPH, and the alarm for a backing truck. Taking account of noise reduction due to noise barriers and the distance between the project and the receptor location, conditions were studied for sight line B on the visual impacts diagram, which is the worst-case location. Because of the sharp topography and other factors, sites A and D will experience no audible impact from either of these sources. Sight line C would receive less project-generated noise than position B.

<b>Table 3.8-7 Truck Noise Dissipation Over Distance in dBA Marketplace at Newburgh</b>								
	Starting Point	Retaining Wall effect	Fence effect	Vegetation effect	100' distance effect	Noise at prop. line (115')	Noise at porch 200'	Noise Inside House
		-20	-5	0.5	-3		-3	-20
Truck moving at 10 mph	65	45	40	40.5	37.5	37.5	34.5	14.5
		-20	-5	0.5	-6		-6	-20
Intermittent beeper	90	70	65	65.5	59.5	58.5	53.5	33.5

The Existing Conditions Matrix below shows ambient and intermittent noise levels that currently exist on Hilltop Avenue. When compared to the With-Project Matrix above it shows that intermittent sounds from truck movement and the back-up alarm are well below the existing intermittent noise levels. The sound generated from a full size truck will not be heard over the existing nighttime ambient noise. The beeper of a truck backing up is approximately 5 decibels

above the daytime ambient noise (when the majority of truck noise is generated), but 10 decibels below the existing intermittent noise level.

<b>Table 3.8-8 Existing Intermittent and Ambient Noise - Hilltop Avenue Marketplace at Newburgh</b>		
	Existing Intermittent Noise	Existing Ambient Noise
Night time	59.2	44.5
Day Time	63.5	48.9

It is noted that although an explicit analysis has not been presented for trash compacting operations, the noise at the source of these operations would not likely exceed the 90 dBA described above for truck back-up alarms. Therefore, the same conclusions apply; additional noise from trash compaction activities would not exceed 58.5 dBA at the property line or 53.5 dBA at the porch locations at the Hillside residences. Furthermore, as can be deduced from the information presented in Table 3.8-5, it is very unlikely that the occasional truck alarm noise would occur at the same time as the trash compaction activities. Therefore, these two sources are not added together.

#### *Vegetation and Buffering*

Vegetation does not serve as an effective sound barrier and its effects on the perception of quiet are largely psychological. There are other sound attenuation factors that are much more significant and more effective mitigation measures. However the proposed Marketplace development preserves existing vegetation along the site's perimeter and will install additional plantings. Existing vegetation along the northern property boundary will remain intact during construction to provide an immediate buffer to neighboring residential dwellings. Details of the landscape buffer are described in Section 3.10, Visual Resources. The proposed buffer exceed the Town of Newburgh zoning requirements. Additionally, a fence to be placed along this natural vegetative strip will have a significantly greater impact on the noise attenuation. Therefore, there would be no net increase in noise due to the clearing of existing vegetation.

Landscaped islands are proposed throughout the parking areas of the development. These islands will be of sufficient size to adequately support the root systems of trees and other vegetation.

#### Total Noise

The total noise associated with the proposed project is the logarithmic sum of each of the discreet noise sources outlined above. Two separate sets of calculations are presented. The first addresses the average noise levels. The second addresses sporadic or intermittent noise. These calculations are presented below.

<b>Table 3.8-9 Average Noise Levels (Leq) Marketplace at Newburgh</b>								
	Existing Leq	Site Clearing I-84 Noise	Project Traffic Existing Roadways	Project Traffic New Roadways	HVAC Noise	Total Noise	Difference	Impact
<b>Daytime</b>								
Site 3: Hilltop Ave	48.9	0.0	0.0	0.0	42.2	49.9	1.0	No
Site 4: Charlile Circle	52.0	0.0	0.0	0.0	0.0	52.0	0.0	No
Site 6: Brookside #2	52.9	0.0	0.0	44.8	0.0	53.9	1.0	No
Site 7: Starrow Drive	52.2	0.0	0.0	42.8	0.0	53.2	1.0	No
Site 8: Town Park	66.5	0.0	0.0	0.0	0.0	66.5	0.0	No
Site 9: Wintergreen Dr.	51.3	0.0	0.0	42.8	0.0	52.3	1.0	No
<b>Nighttime</b>								
Site 3: Hilltop Ave	44.5	0.0	0.0	0.0	42.2	46.5	2.0	No
Site 4: Charlile Circle	45.2	0.0	0.0	0.0	0.0	45.2	0.0	No
Site 6: Brookside #2	49.9	0.0	0.0	44.8	0.0	50.9	1.0	No
Site 7: Starrow Drive	49.3	0.0	0.0	42.8	0.0	50.3	1.0	No
Site 8: Town Park	55.5	0.0	0.0	0.0	0.0	55.5	0.0	No
Site 9: Wintergreen Dr.	48.2	0.0	0.0	42.8	0.0	49.2	1.0	No

<b>Table 3.8-10 Maximum Noise Levels (Lmax) Marketplace at Newburgh</b>						
	Existing Lmax	Truck Loading Noise	Trash Compaction Noise	Total Noise	Difference	Impact
<b>Daytime</b>						
Site 3: Hilltop Ave	63.5	53.5	53.5	63.5	0.0	No
Site 4: Charlile Circle	55.3	0	0	55.3	0.0	No
Site 6: Brookside #2	64.8	0	0	64.8	0.0	No
Site 7: Starrow Drive	62.4	0	0	62.4	0.0	No
Site 8: Town Park	67.0	0	0	67.0	0.0	No
Site 9: Wintergreen Dr.	56.8	0	0	56.8	0.0	No
<b>Nighttime</b>						
Site 3: Hilltop Ave	59.2	53.5	53.5	59.2	0.0	No
Site 4: Charlile Circle	52.3	0	0	52.3	0.0	No
Site 6: Brookside #2	61.9	0	0	61.9	0.0	No
Site 7: Starrow Drive	58.3	0	0	58.3	0.0	No
Site 8: Town Park	57	0	0	57.0	0.0	No
Site 9: Wintergreen Dr.	52.8	0	0	52.8	0.0	No

Compliance with Noise Standards

Based on the above analysis, the increase in vehicular and truck traffic generated by the project is projected to have no adverse affect on existing noise conditions. With regard to the Town of Newburgh noise standards, future noise levels after construction of the proposed Marketplace development will still be lower than the noise threshold for the IB zoning district of 70 dBA during the night and 80 dBA during the day as per the Town's regulations.

Additionally, the worst case scenario of a noise level of 54 dBA is lower than the FWHA acceptable limit of 66 dBA for exterior residential areas.

Construction Noise

Ambient daytime noise levels will increase in the immediate vicinity of the site during project construction. Construction activities and operation of construction equipment have been the subject of numerous noise studies completed for various projects in the region. The following table shows representative maximum sound levels for diesel powered equipment and other activities at a range of receptor distances.

<b>Table 3.8-11 Construction Noise Levels (dBA)</b>				
<b>Equipment/Activity</b>	<b>Maximum Sound Level</b>			
	<b>50 feet</b>	<b>200 feet</b>	<b>500 feet</b>	<b>1000 feet</b>
Backhoe	82-84	70-72	62-64	56-58
Blasting	93-94	81-82	73-74	67-68
Concrete Pump	74-84	62-72	54-64	48-58
Generator	71-87	59-75	51-67	45-61
Loader	86-90	74-78	66-70	60-64
Rock Drill	83-99	71-87	63-79	57-73
Trucks	81-87	69-75	61-67	55-61
Rock Processing	81-89	69-77	63-71	57-65

Source: Tim Miller Associates, Inc., 2005.

To the average person, a noise level increase of 2 to 3 dBA is barely perceptible, an increase of 5 dBA is noticeable, and an increase of 20 dBA is perceived as a dramatic change. Annoyance frequently results from increases of 10 dBA or more, depending on the frequency and duration of the noise events.

The level of impacts of these noise sources depends on the type and number of pieces of construction equipment being operated, as well as the distance from the construction site. The noisiest period of construction will occur as site grading is conducted, and when concrete and building materials are transported to the site.

It is anticipated that existing residences located just north of the proposed Marketplace development will experience temporary elevated noise levels at occasional periods during the construction of the proposed project. Most of this noise will occur in the initial phases of construction when the site is being brought to grade with bulldozers, excavators and trucks. This will occur with some intensity for a period of 24 months.

Rock Processing

It is expected that a single rock crusher will be used on an intermittent basis to process the rock associated with the blasting activities. The crusher will be used for the preparation of roadway subgrade material and for the processing of rock to acceptable size for the use of fill for areas

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on the site. According to the NYSDEC publication, *Assessing and Mitigating Noise Impacts* (2000), rock crushers have noise levels of 89 dB(A) at 100 feet and 69 dB(A) at 1,000 feet. At a recent project built by the applicant in Westchester County, the rock crusher used had a maximum noise level of less than 85 dB(A). Some rock crushers are not as loud as other crushers. This publication is based on an average noise level. If the rock crusher is located in the southwestern portion of the property boundary, it would be approximately 1,200 feet from the homes on Hilltop off the northeastern boundary of the site, approximately 1,400 feet from the homes off the northern boundary of the site, and approximately 1,800 feet from the homes off the southeastern boundary of the site. Rock processing machines have become very quiet with recent advances, and at 69 dB(A) at the property line are not expected to have a long term impact to surrounding areas.

#### Neighboring Houses Acting As Noise Barriers

Barriers nearby a house will affect perceived noise. Most often, the houses in the northeast residential area act as barriers to each other, because they fulfill the required criteria:

- a. They are solid, not vegetation, and
- b. They are tall, and are close to the neighboring houses, so that they block the line of sight.

Therefore, some of these houses presently act to reduce noise, although the forest areas will not.

#### New Retail Center Buildings Acting as Noise Barriers

In the same way, the new buildings of the retail center will act as barriers, but only for noise produced below the level of the buildings. In this case, the noise from I-84 is directly south of the new retail center.

The new buildings are solid, and their bulk and height are closer to the neighboring houses than the average of the trees. The retail buildings are also close to I-84. This proximity to both the source (I-84) and receiver increases their effectiveness.

For aircraft runup noise at Stewart Airport, the new buildings will act as a barriers superior to the removed trees. An aircraft on runup is a point source, whereas traffic is a line source. Therefore, proximity to I-84 is more significant because it is a line source as well as being closer to the northeast residential area.

#### Sound Reduction From Weather

Compared to the effects of traffic patterns and aircraft type, the effects of temperature inversion and wind speed and direction will not significantly affect the comparison between trees and retail center baffling of noise.

#### Conclusions

1. Loss of forest area is perceived by local residents as potentially increasing aircraft or other noises in the developed condition.

2. The forest does not shield residential areas from airborne noises, because the planes on most typical flight paths are too high up to be blocked by vegetation.
3. The retail center buildings will provide more effective noise barriers than the forest for low-elevation noises that are close, such as I-84, for midrange as well as low frequencies, particularly for those residences adjacent to the project site
4. Runup noise from Stewart Airport runways is too far away to be shielded effectively or to be of as great a concern, compared to airborne noises.
5. The construction of the retail center will provide a modest degree of noise attenuation from I-84 noise to the northeast residential area. Aircraft runup noise will also be slightly reduced. There will be no significant change in noise level for airborne operations

### **3.8.3 Mitigation Measures**

Noise barriers, in the form of solid wood fences eight to ten feet high, parapet walls on the tops of the buildings and additional landscaping in the buffer areas are being proposed.

Evergreen plantings are proposed at the top of the stone cut behind Buildings C and D and will consist of hard pine toward the shopping center, planted in a double staggered row, with lower trees and shrubs on the wooded side to soften the view from residences. An eight foot high, solid board fence will be placed along the top of the rock cut.

Existing vegetation to be preserved along the property line that is shared with residences on Charlile Circle would be supplemented with evergreen plantings as shown on the landscaping plan and described in Section 3.10 of the DEIS.

It is expected that additional plantings and a sound barrier fence in a strategic location will be provided between the easterly drive and the newly constructed Brookside Avenue cul-de-sac which would help in visual mitigation.

Neighboring residential properties would be subjected to short-term increases in noise during construction of the proposed Marketplace development. As per the Town's clearing and grading law, site preparation activities will be conducted only between the hours of 7:30 AM and 6:00 PM when within 1,500 feet of any residence. No site preparation activity will be conducted on Sundays or public holidays without express consent with the permit. Any rock processing will occur a minimum of 1,000 feet from adjacent residences, which meets DEC guidelines and the Town noise ordinance as described above.

All construction vehicles and equipment will be well maintained and operated in an efficient manner. In particular, the mufflers on all construction equipment will be fully functional and well maintained by the construction contractors.

Based on the analysis above, the Build Condition is not anticipated to result in any long-term significant adverse noise impacts and no additional mitigation measures are proposed. However, measures have been incorporated into the proposed development and include building design and siting as well as the proposed landscape buffering.

### **3.9 Air Quality**

#### **3.9.1 Existing Conditions**

Air quality is a relative measure of the amount of noxious substances, natural and manmade, that occur in the air. Certain airborne gases and particles can cause or contribute to the deterioration and/or destruction of biological life as well as damage to property and other physical components of the environment. Air pollutants can be defined as solid particles, liquefied particles, and vapor or gases, which are discharged into, or form in, the outdoor atmosphere. Air quality in any particular location is influenced by contaminants discharged into the atmosphere and by regional and local climatic and weather conditions. Atmospheric conditions such as sunlight, rainfall and humidity, air turbulence, temperature differences, and wind speed and direction can disperse, intensify or chemically change or alter the composition of air contaminants.

#### **Background Air Quality**

The Federal Clean Air Act (1990) and its amendments require each state to develop a State Implementation Plan (SIP) in order to provide a regulatory framework to implement the requirements of the Act. The SIPs describe how each state will attain and maintain air quality standards. The New York SIP adopted ambient air quality standards (AAQS) from a list of seven pollutants identified by the US Environmental Protection Agency (USEPA). Attainment of the AAQS is required under the Act, and each state has a designated time period to bring non-conforming areas into compliance. The AAQS establish levels to protect the health (primary standard) and welfare (secondary standard) of the general public with an adequate margin of safety. These standards are designed to protect the most vulnerable segments of the population, e.g., children, which are susceptible to air quality-related health problems. Locations of sensitive source-receptors considered in assessing air quality include but are not limited to schools, hospitals and convalescent homes. Potential receptors within one half mile of the project site include: residential properties. No other sensitive receptors (such as nursing homes or health care facilities) were noted in the vicinity of the project site. There are no known stationary air pollution sources located in the vicinity of the project site.

New York State is divided into nine (9) Air Quality Control Regions (AQCR), in order to evaluate air quality by geographic region. The Town of Newburgh is located in the southern portion of the Region 3 AQCR, which includes the following counties: Rockland, Orange, Putnam, Westchester, Sullivan, Dutchess and Ulster. The Federal criteria pollutants currently monitored within Region 3 include: sulfur dioxide (SO<sub>2</sub>), ozone (O<sub>3</sub>), total suspended particulates, inhalable particulates (PM<sub>10</sub>), and lead. Particulate standards include only those particles with nominal diameters less than 10 microns which are inhalable. The remaining criteria pollutants - carbon monoxide (CO) and nitrogen dioxide (NO<sub>2</sub>) - are not monitored in the Region 3 AQCR, but are monitored in Region 2 AQCR, which includes the five boroughs of New York City. The sources of these contaminants, their effect on human health and their final deposition vary considerably.

Sources of air pollutants are summarized in Table 3.9-1, below.



<b>Table 3.9-1 Principal Sources of Air Pollutants</b>	
<b>Pollutant</b>	<b>Principal Sources</b>
Carbon Monoxide (CO)	Motor Vehicles (90%) Other Combustion Sources (10%)
Oxidants (primarily Ozone)	Produced by the Action of Sunlight on HC and NO <sub>x</sub> Compounds in the Atmosphere
Nitrogen Oxides (NO <sub>x</sub> )	Stationary Source Combustion (50%) Mobile Sources (50%)
Hydrocarbons (HC)	Motor Vehicles (60%) Industrial Process and Evaporative Losses from Storage Facilities (40%)
Particulates (part)	Many Sources (Stationary and Mobile) Including Crushing and Grinding Operations and Natural Resources
Sulfur Dioxide (SO <sub>2</sub> )	Electric Power Generation (40%) Space Heating (30%) Other Combustion of Fuels in Industrial Processes (30%)
Sources: DGEIS for IBM - Proposed Re-zoning, IBM Properties, Town of Fishkill, October 3, 1983, prepared by Ronald A. Freeman Associates, P.C. Consulting Engineers NYSDEC Region 3, NYS Air Quality Report, Ambient Air Monitoring System Annual Report 1992-DAR-93-1 Note: The percentage figures represent approximate contributions for the sources identified in middle-latitude areas. For more specific information, refer to the annual reports of the Council on Environmental Quality.	

Table 3.9-2 presents a summary of 2004 data for monitoring stations located closest to the project site, in the Region 3 AQCR. This data provide information on existing air quality. Use of the regional data to represent the project site provide a reasonable evaluation of local air quality, since the NYSDEC monitoring locations are located to characterize regional ambient air quality. Based upon 2004 data, all criteria contaminants have achieved acceptable levels within Orange County. Orange County is located within an 8-hour moderate nonattainment area for ozone and for carbon monoxide.

The NYS DEC , NYS DOT, and the US EPA are among the primary agencies responsible for programs and policies to reduce emissions which lead to ozone formation in New York State. Stringent limits on gasoline volatility, hydrocarbon vapor control during refueling, tailpipe emission standards, inspection and maintenance programs, warning systems when emission controls malfunction and other programs have contributed to the overall downward trend of ozone in metropolitan New York since the early 1980's. Ozone compliance is being addressed at the state and regional level.

The trend in air quality has shown no significant change, but has been approximately the same over the last few years for most pollutants, with the exception of SO<sub>2</sub>. The SO<sub>2</sub> annual average concentrations measured at the Mt. Ninham monitor have increased by approximately 15 percent each year from 1995-1997. From 1998-2001 the level of SO<sub>2</sub>

annual average concentrations remained between 2.5 ppb and 2.3 ppb. In 2002, the average concentration dropped down to 2.2 parts per billion (ppb), the lowest it has been since 1995. Nevertheless, the annual average remains well below the air quality standard.

<b>Table 3.9-2 Regional Air Quality Data Summary</b>				
<b>Monitoring Location</b>	<b>Pollutant</b>	<b>Concentration</b>	<b>Air Quality Standard</b>	<b>Within Standard?</b>
Valley Central	Ozone (O <sub>3</sub> )	0.078 ppm <sup>(2)</sup>	.08 ppm <sup>(2)</sup>	Yes
Mt. Ninham	Sulfur Dioxide (SO <sub>2</sub> )	2.2 ppb <sup>(1)</sup>	30 ppb <sup>(1)</sup>	Yes
Belleayre	Inhalable Particulates (PM <sub>10</sub> )	11 g/m <sup>3</sup> <sup>(1)</sup>	50 g/m <sup>3</sup> <sup>(1)</sup>	Yes
Newburgh	Inhalable Particulates (PM <sub>2.5</sub> )	11.8 g/m <sup>3</sup> <sup>(1)</sup>	15 g/m <sup>3</sup> <sup>(1)</sup>	Yes
Wallkill	Lead (Pb)	0.03 g/m <sup>3</sup> <sup>(3)</sup>	-----	Yes
Loudonville	Carbon Monoxide (CO)	1.8 ppm	9.0 ppm	Yes
Mt. Ninham	PM Sulfate, Nitrate	3.3 g/m <sup>3</sup> <sup>(1)</sup>	-----	Yes
NOTES: (1) Annual Arithmetic Mean in parts per billion (ppb). (2) 4th Highest Daily Maximum 8-Hour Average in parts per million (ppm). (3) Maximum Quarterly Average in grams per cubic meter (g/m <sup>3</sup> ).				

The primary pollutants associated with vehicular exhaust emissions are nitrogen dioxide (NO<sub>2</sub>), hydrocarbons (HC), and carbon monoxide (CO). Since short term exposure to elevated CO concentrations can have acute health impacts, state and Federal AAQS have been developed for ambient CO concentrations requisite to protect the health and welfare of the general public with an adequate margin of safety. There are no short term health standards (currently enforced) for NO<sub>2</sub> and HC, since the primary concern with these pollutants is their role in the photochemical reactions that lead to the formation of secondary pollutants known as ozone and smog which are known lung and eye irritants. Since ozone and smog formation is a slow process, these pollutants are only reviewed on a regional (mesoscale) and not a local (microscale) basis.

The NYSDOT Environmental Procedures Manual (EPM) provides guidelines to assess the need for mesoscale analyses for ozone and for microscale analyses for carbon monoxide (CO) and for particulate matter (PM).

In general, projects that could have a significant impact on emissions on a regional basis should have a mesoscale analysis performed. Examples of these types of projects include:

- High Occupancy Vehicle (HOV) lanes vs. general use lanes,
- New or significant modifications to interchanges on access-controlled facilities,
- Large-scale signal coordination projects,
- Projects having alternatives (including the no-build) with significantly different (>10%) vehicle miles traveled (VMT),
- widening to provide additional travel lanes more than a mile in length

If the project does not meet any of the above criteria, then a quantitative mesoscale air quality analysis is not required.

The proposed project is a retail development. As such, it will likely draw trips from existing shopping trips at other retail centers. Although the proposed project would add to traffic in

the immediate vicinity of the site, it will not result in a significant increase in vehicle miles traveled on a regional basis. Ozone is a regional constituent that is affected largely by changes in the transportation system that are much larger than those associated with the proposed project. Ozone concentrations in the project area will not be meaningfully affected by the proposed project and no further analysis for ozone is warranted.

The EPM guidelines to assess the need for a microscale analysis for CO include an intersection level of service screen, a capture criteria screen, and a minimum volume screen. Most of the traffic study locations exceed the level of service screen since most of the intersections operate at LOS D or worse. Many of the traffic study locations also exceed the capture criteria screen because as shown in the traffic study, many of these intersections will experience a greater than 10 percent increase in traffic due to the proposed project. The minimum volume screen is based on the CO emission factors (EFs) for the free flow and queue links that are discussed more fully below. The free flow and queue EFs for the existing (2004) scenario are 11.12 grams/mile and 126.15 grams/hour, respectively. The corresponding factors for the 2008 analysis year are 6.74 grams/mile and 76.80 grams/hour, respectively.

Applying these factors to Table 3C in Chapter 1.1 of the EPM indicates that a single intersection approach must carry more than 2,679 vehicles per hour (vph) in 2004, or more than 4,000 vph in 2008 in order to require further analysis; all intersections in which the highest volume approach falls below these levels screens out. As shown in the traffic section, there are no 2004 intersections or 2008 intersections that have approaches exceeding these levels. Therefore, all the intersections in the traffic study screen for CO, and as per the EPM guidelines, further microscale analyses are not warranted.

Although the project meets the screening requirements for CO, due to the scale of the proposed project and the existence of residences along the northern boundary of the site, three worst case intersections were evaluated for (microscale) CO air quality levels, using the (NYSDOT) air quality evaluation methodology. These three intersections were chosen for analysis based on existing traffic volumes, future traffic volumes, levels of service and location of sensitive receptors. These intersections represent the worst-case intersections and would be most likely to have potential to be impacted by the proposed project. The three worst-case intersections are:

- NYS Route 300 at the proposed Marketplace access: chosen due to high volumes of traffic and potential emission impacts of new parking areas.
- NYS Route 300 and NYS Route 52 intersection: chosen due to longer delays.
- NYS Route 5 at the proposed Marketplace 5th Avenue access: chosen due to proximity to residential dwellings.

Carbon monoxide modeling was conducted for both PM and Saturday peak hour traffic periods and the eight-hour concentrations are show in Table 3.9-3. To derive the 8-hour concentrations, the 1-hour concentration is multiplied by 0.7. The NAAQS 1-hour standard is 35 ppm. The 8 hour standard is 9.0 ppm.

<b>Table 3.9-3 CO Modeling Results, 8-hour Average, Existing Conditions</b>		
	<b>PM Peak Hour</b>	<b>Saturday Peak Hour</b>
<b><i>NYS Route 300 at Proposed Access</i></b>		
Max. Predicted Concentration (ppm)	1.8	1.3
Background Concentration (ppm)	2.2	2.2
Receptor w/ Max. Concentrations	15	14
Total Predicted Concentrations (ppm)	4.1	3.5
NAAQS	9	9
<b><i>NYS Route 300 at NYS Route 52</i></b>		
Max. Predicted Concentration (ppm)	1.3	1.7
Background Concentration (ppm)	2.2	2.2
Receptor w/ Max. Concentrations	13	13
Total Predicted Concentrations (ppm)	3.5	3.9
NAAQS	9	9
<b><i>NYS Route 52 at 5th Avenue Access</i></b>		
Max Predicted Concentration (ppm)	1.2	1.1
Background Concentration (ppm)	2.2	2.2
Receptor w/ Max. Concentrations	12	12
Total Predicted Concentrations (ppm)	3.4	3.3
NAAQS	9	9
Source: Air Quality Report, Lemonides Heineman, Inc., 2006.		

All of the measured CO concentrations are well within the NAAQS thresholds, as shown on the table above. As previously stated, New York State adopted the National Ambient Air Quality Standards. The worst-case concentration occurs at NYS Route 300 at the proposed site access where the eight-hour CO concentration is 4.0 ppm compared to the NAAQS standard of 9.0 ppm. The worst-case 1-hour level was 5.7 ppm and well within the 1-hour standard of 35 ppm. The refined analysis indicates that the areas surrounding these three (3) intersections meet air quality standards. Including the background levels at these sites, the levels are less than half of the 8-hour air quality standard and one-sixth of the 1-hour standard. Since the selected intersections represent a worst-case scenario, existing CO levels in the vicinity of the project site at other area intersections would be at or below the levels predicted by the analysis performed for these intersections. The detailed air quality analysis of the existing conditions is presented in Appendix I.

The EPM also provides guidance for conducting a particulate matter analysis. Air quality dispersion modeling for mobile sources of particulate matter (PM10 and PM2.5) was performed for receptors located at the NYS Route 300/proposed Marketplace access and the NYS Route 300/NYS Route 52 intersections.

Vehicular emission rates of particulate were obtained from the EPA's MOBILE6.2 model. The emission factors were input to the EPA CAL3QHCR dispersion model in order to predicted downwind concentrations of PM10 and PM2.5 at downwind receptors.

The MOBILE6.2 particulate emission factors for PM10 and PM2.5 were obtained from the New York State DOT Environmental Analysis Bureau, July 2004. The EPA's CAL3QHCR dispersion model was employed to estimate the particulate concentrations at receptors (mid-sidewalk location) near each intersection. The traffic information required for the model runs was obtained from a traffic study.

The results of the dispersion modeling for each of the modeled locations indicate that the predicted concentrations are well below the NAAQS for both PM10 and PM2.5. The results for both modeled intersections are summarized in Tables 1 through 8. A conversion factor of 0.4 was applied to convert hourly averages to 24-hour concentrations and a factor of 0.1 was applied for the annual concentrations.

<b>TABLE 1 CAL3QHC MODELING RESULTS 24-HOUR PM<sub>10</sub></b>					
Rte 300 at Site Drive	Maximum Predicted Conc. (ug/m <sup>3</sup> )	Background Conc. (ug/m <sup>3</sup> )	Receptor With Max. Conc.	Total Pred. Conc. (ug/m <sup>3</sup> )	NAAQS (Ambient Standard) (ug/m <sup>3</sup> )
PM Existing	2.8	44.2	12	47.0	150

<b>TABLE 2 CAL3QHC MODELING RESULTS ANNUAL PM<sub>10</sub></b>					
Rte 300 at Site Drive	Maximum Predicted Conc. (ug/m <sup>3</sup> )	Background Conc. (ug/m <sup>3</sup> )	Receptor With Max. Conc.	Total Pred. Conc. (ug/m <sup>3</sup> )	NAAQS (Ambient Standard) (ug/m <sup>3</sup> )
PM Existing	0.70	13.9	12	14.60	50

<b>TABLE 3 CAL3QHC MODELING RESULTS 24-HOUR PM<sub>2.5</sub></b>					
Rte 300 at Site Drive	Maximum Predicted Conc. (ug/m <sup>3</sup> )	Background Conc. (ug/m <sup>3</sup> )	Receptor With Max. Conc.	Total Pred. Conc. (ug/m <sup>3</sup> )	NAAQS (Ambient Standard) (ug/m <sup>3</sup> )
PM Existing	1.2	44.2	12	45.4	65

<b>TABLE 4 CAL3QHC MODELING RESULTS ANNUAL PM<sub>2.5</sub></b>					
Rte 300 at Site Drive	Maximum Predicted Conc. (ug/m <sup>3</sup> )	Background Conc. (ug/m <sup>3</sup> )	Receptor With Max. Conc.	Total Pred. Conc. (ug/m <sup>3</sup> )	NAAQS (Ambient Standard) (ug/m <sup>3</sup> )
PM Existing	0.30	13.9	12	14.20	15

Note: Ambient background measured concentrations obtained from the NYSDEC, 2004.

<b>TABLE 5 CAL3QHC MODELING RESULTS 24-HOUR PM<sub>10</sub></b>					
<b>Rte 300 at Route 52</b>	<b>Maximum Predicted Conc. (ug/m<sup>3</sup>)</b>	<b>Background Conc. (ug/m<sup>3</sup>)</b>	<b>Receptor With Max. Conc.</b>	<b>Total Pred. Conc. (ug/m<sup>3</sup>)</b>	<b>NAAQS (Ambient Standard) (ug/m<sup>3</sup>)</b>
PM Existing	2.4	44.2	13	46.6	150

<b>TABLE 6 CAL3QHC MODELING RESULTS ANNUAL PM<sub>10</sub></b>					
<b>Rte 300 at Route 52</b>	<b>Maximum Predicted Conc. (ug/m<sup>3</sup>)</b>	<b>Background Conc. (ug/m<sup>3</sup>)</b>	<b>Receptor With Max. Conc.</b>	<b>Total Pred. Conc. (ug/m<sup>3</sup>)</b>	<b>NAAQS (Ambient Standard) (ug/m<sup>3</sup>)</b>
PM Existing	0.60	13.9	13	14.50	50

<b>TABLE 7 CAL3QHC MODELING RESULTS 24-HOUR PM<sub>2.5</sub></b>					
<b>Rte 300 at Route 52</b>	<b>Maximum Predicted Conc. (ug/m<sup>3</sup>)</b>	<b>Background Conc. (ug/m<sup>3</sup>)</b>	<b>Receptor With Max. Conc.</b>	<b>Total Pred. Conc. (ug/m<sup>3</sup>)</b>	<b>NAAQS (Ambient Standard) (ug/m<sup>3</sup>)</b>
PM Existing	1.2	44.2	13	45.4	65

<b>TABLE 8 CAL3QHC MODELING RESULTS ANNUAL PM<sub>2.5</sub></b>					
<b>Rte 300 at Route 52</b>	<b>Maximum Predicted Conc. (ug/m<sup>3</sup>)</b>	<b>Background Conc. (ug/m<sup>3</sup>)</b>	<b>Receptor With Max. Conc.</b>	<b>Total Pred. Conc. (ug/m<sup>3</sup>)</b>	<b>NAAQS (Ambient Standard) (ug/m<sup>3</sup>)</b>
PM Existing	0.30	13.9	13	14.20	15

### 3.9.2 Potential Impacts

#### Future "No Build" Condition

A traffic air quality impact analysis for the year 2008 without the project (No Build), as described in Chapter 3.6, Traffic, was prepared at the same intersections as the existing analysis to determine expected CO concentrations at and around the site for mobile sources (there are no stationary sources in the vicinity of the project site). The analyses indicate that CO levels, for the "No Build" condition, will be within established air quality standards for both the 8-hour and 1-hour periods. Table 3.9-4 presents the results of the CO modeling.

<b>Table 3.9-4 CO Modeling Results, 8-hour Average, No Build Condition</b>		
	<b>PM Peak Hour</b>	<b>Saturday Peak Hour</b>
<b><i>NYS Route 300 at Proposed Access</i></b>		
Max. Predicted Concentration (ppm)	1.3	1.3
Background Concentration (ppm)	2.2	2.2
Receptor w/ Max. Concentrations	12	12
Total Predicted Concentrations (ppm)	3.5	3.5
NAAQS	9	9
<b><i>NYS Route 300 at NYS Route 52</i></b>		
Max Predicted Concentration (ppm)	1.4	1.1
Background Concentration (ppm)	2.2	2.2
Receptor w/ Max Concentrations	13	13
Total Predicted Concentrations (ppm)	3.3	3.2
NAAQS	9	9
<b><i>NYS Route 52 at 5th Avenue Access</i></b>		
Max. Predicted Concentration (ppm)	1.1	1
Background Concentration (ppm)	2.2	2.2
Receptor w/ Max. Concentrations	12	12
Total Predicted Concentrations (ppm)	3.3	3.2
NAAQS	9	9
Source: Air Quality Report, Lemonides Heineman, Inc., 2006		

As shown above, the growth in No Build traffic does not affect ambient CO levels. In fact, CO levels are lower than in the existing conditions at some locations due to the lower emission rates associated with the 2008 analysis year. The No Build CO concentrations are still well below the NAAQS thresholds. The worst-case concentration occurs at NYS Route 300 at the site access during the Saturday peak period, where the modeled eight-hour CO concentration is 3.5 ppm compared to the NAAQS standard of 9.0 ppm. The worst case 1-hour concentration is 4.9 ppm which is also well within the NAAQS standard of 35 ppm.

A similar analysis was performed for particulate matter. These results are shown in Tables 1 through 8. The growth in no build traffic does not have an appreciable effect on the levels reported for existing conditions.

<b>TABLE 1</b> <b>CAL3QHC MODELING RESULTS</b> <b>24-HOUR PM<sub>10</sub></b>					
<b>Rte 300 at Site Drive</b>	<b>Maximum Predicted Conc. (ug/m<sup>3</sup>)</b>	<b>Background Conc. (ug/m<sup>3</sup>)</b>	<b>Receptor With Max. Conc.</b>	<b>Total Pred. Conc. (ug/m<sup>3</sup>)</b>	<b>NAAQS (Ambient Standard) (ug/m<sup>3</sup>)</b>
No Build	2.8	44.2	12	47.0	150

<b>TABLE 2</b> <b>CAL3QHC MODELING RESULTS</b> <b>ANNUAL PM<sub>10</sub></b>					
<b>Rte 300 at Site Drive</b>	<b>Maximum Predicted Conc. (ug/m<sup>3</sup>)</b>	<b>Background Conc. (ug/m<sup>3</sup>)</b>	<b>Receptor With Max. Conc.</b>	<b>Total Pred. Conc. (ug/m<sup>3</sup>)</b>	<b>NAAQS (Ambient Standard) (ug/m<sup>3</sup>)</b>
No Build	0.70	13.9	12	14.60	50

<b>TABLE 3</b> <b>CAL3QHC MODELING RESULTS</b> <b>24-HOUR PM<sub>2.5</sub></b>					
<b>Rte 300 at Site Drive</b>	<b>Maximum Predicted Conc. (ug/m<sup>3</sup>)</b>	<b>Background Conc. (ug/m<sup>3</sup>)</b>	<b>Receptor With Max. Conc.</b>	<b>Total Pred. Conc. (ug/m<sup>3</sup>)</b>	<b>NAAQS (Ambient Standard) (ug/m<sup>3</sup>)</b>
No Build	1.2	44.2	12	45.4	65

<b>TABLE 4</b> <b>CAL3QHC MODELING RESULTS</b> <b>ANNUAL PM<sub>2.5</sub></b>					
<b>Rte 300 at Site Drive</b>	<b>Maximum Predicted Conc. (ug/m<sup>3</sup>)</b>	<b>Background Conc. (ug/m<sup>3</sup>)</b>	<b>Receptor With Max. Conc.</b>	<b>Total Pred. Conc. (ug/m<sup>3</sup>)</b>	<b>NAAQS (Ambient Standard) (ug/m<sup>3</sup>)</b>
No Build	0.30	13.9	12	14.20	15

Note: Ambient background measured concentrations obtained from the NYSDEC, 2004.

<b>TABLE 5</b> <b>CAL3QHC MODELING RESULTS</b> <b>24-HOUR PM<sub>10</sub></b>					
<b>Rte 300 at Route 52</b>	<b>Maximum Predicted Conc. (ug/m<sup>3</sup>)</b>	<b>Background Conc. (ug/m<sup>3</sup>)</b>	<b>Receptor With Max. Conc.</b>	<b>Total Pred. Conc. (ug/m<sup>3</sup>)</b>	<b>NAAQS (Ambient Standard) (ug/m<sup>3</sup>)</b>
No Build	2.4	44.2	13	46.6	150



<b>TABLE 6 CAL3QHC MODELING RESULTS ANNUAL PM<sub>10</sub></b>					
<b>Rte 300 at Route 52</b>	<b>Maximum Predicted Conc. (ug/m<sup>3</sup>)</b>	<b>Background Conc. (ug/m<sup>3</sup>)</b>	<b>Receptor With Max. Conc.</b>	<b>Total Pred. Conc. (ug/m<sup>3</sup>)</b>	<b>NAAQS (Ambient Standard) (ug/m<sup>3</sup>)</b>
No Build	0.60	13.9	13	14.50	50

<b>TABLE 7 CAL3QHC MODELING RESULTS 24-HOUR PM<sub>2.5</sub></b>					
<b>Rte 300 at Route 52</b>	<b>Maximum Predicted Conc. (ug/m<sup>3</sup>)</b>	<b>Background Conc. (ug/m<sup>3</sup>)</b>	<b>Receptor With Max. Conc.</b>	<b>Total Pred. Conc. (ug/m<sup>3</sup>)</b>	<b>NAAQS (Ambient Standard) (ug/m<sup>3</sup>)</b>
No Build	1.2	44.2	13	45.4	65

<b>TABLE 8 CAL3QHC MODELING RESULTS ANNUAL PM<sub>2.5</sub></b>					
<b>Rte 300 at Route 52</b>	<b>Maximum Predicted Conc. (ug/m<sup>3</sup>)</b>	<b>Background Conc. (ug/m<sup>3</sup>)</b>	<b>Receptor With Max. Conc.</b>	<b>Total Pred. Conc. (ug/m<sup>3</sup>)</b>	<b>NAAQS (Ambient Standard) (ug/m<sup>3</sup>)</b>
No Build	0.30	13.9	13	14.20	15

Note: Ambient background measured concentrations obtained from the NYSDEC, 2004.

Future “Build” Condition

Air quality impacts associated with the proposed project were assessed to determine whether the project would have an adverse effect on the surrounding environs. Air quality impacts from construction activities were assessed along with a determination of impacts from project induced traffic along the primary access routes to and from the project site.

*Traffic Related Impacts*

Air quality impacts from projected vehicular traffic associated with the project have been analyzed for the 2008 build year. The air quality analysis used traffic volumes and capacity indices calculated in the traffic study prepared for the project. Table 3.9-5 summarizes the Build condition CO results.

The table below indicates that the growth in traffic due to the proposed project would not significantly affect ambient CO air quality levels. The Build CO concentrations are still well below the NAAQS thresholds. The worst-case concentration occurs at Route 300 at the proposed site access, where the modeled eight-hour CO concentration is 4.0 ppm and the one-hour concentration is 5.6 ppm. In the Build condition, with the construction of the proposed Marketplace development, the CO concentrations at each of the three worst-case intersections are still within the NAAQS thresholds. Thus, it is expected that other area intersections would also operate within NAAQS requirements.

<b>Table 3.9-5 CO Modeling Results, 8-hour Average, Build Condition</b>		
	<b>PM Peak Hour</b>	<b>Saturday Peak Hour</b>
<b><i>NYS Route 300 at Proposed Access</i></b>		
Max. Predicted Concentration (ppm)	1.8	1.8
Background Concentration (ppm)	2.2	2.2
Receptor w/ Max. Concentrations	13	13
Total Predicted Concentrations (ppm)	4.1	4
NAAQS	9	9
<b><i>NYS Route 300 at NYS Route 52</i></b>		
Max. Predicted Concentration (ppm)	1.5	1.4
Background Concentration (ppm)	2.2	2.2
Receptor w/ Max Concentrations	13	13
Total Predicted Concentrations (ppm)	3.8	3.6
NAAQS	9	9
<b><i>NYS Route 52 at 5th Avenue Access</i></b>		
Max Predicted Concentration (ppm)	1.2	1.3
Background Concentration (ppm)	2.2	2.2
Receptor w/ Max Concentrations	12	12
Total Predicted Concentrations (ppm)	3.4	3.5
NAAQS	9	9
Source: Air Quality Report, Lemonides Heineman, Inc., 2006.		

The project will be served by open parking areas. An analysis for emissions generated from the parking area for the worst-case Saturday peak hour was also conducted. The 8-hour average concentrations were determined by using the Saturday peak traffic volumes for eight consecutive hours, which is a conservative modeling. The analysis determined the parking areas would contribute up to 1.4 ppm of CO.

Combining the worst case 8-hour intersection value, which was 4.0 ppm, and the parking area value of 1.4 ppm totals 5.4 ppm. This conservative, worst-case value is still within the NAAQS eight-hour allowable standard of 9.0 ppm.

The additional traffic associated with the proposed development is not expected to result in any increase in particulate matter. The summary tables for the build condition are presented below:

<b>TABLE 1 CAL3QHC MODELING RESULTS 24-HOUR PM<sub>10</sub></b>					
Rte 300 at Site Drive	Maximum Predicted Conc. ( $\mu\text{g}/\text{m}^3$ )	Background Conc. ( $\mu\text{g}/\text{m}^3$ )	Receptor With Max. Conc.	Total Pred. Conc. ( $\mu\text{g}/\text{m}^3$ )	NAAQS (Ambient Standard) ( $\mu\text{g}/\text{m}^3$ )
Build	2.8	44.2	12	47.0	150

<b>TABLE 2 CAL3QHC MODELING RESULTS ANNUAL PM<sub>10</sub></b>					
Rte 300 at Site Drive	Maximum Predicted Conc. ( $\mu\text{g}/\text{m}^3$ )	Background Conc. ( $\mu\text{g}/\text{m}^3$ )	Receptor With Max. Conc.	Total Pred. Conc. ( $\mu\text{g}/\text{m}^3$ )	NAAQS (Ambient Standard) ( $\mu\text{g}/\text{m}^3$ )
Build	0.70	13.9	12	14.60	50

<b>TABLE 3 CAL3QHC MODELING RESULTS 24-HOUR PM<sub>2.5</sub></b>					
Rte 300 at Site Drive	Maximum Predicted Conc. ( $\mu\text{g}/\text{m}^3$ )	Background Conc. ( $\mu\text{g}/\text{m}^3$ )	Receptor With Max. Conc.	Total Pred. Conc. ( $\mu\text{g}/\text{m}^3$ )	NAAQS (Ambient Standard) ( $\mu\text{g}/\text{m}^3$ )
Build	1.2	44.2	12	45.4	65

<b>TABLE 4 CAL3QHC MODELING RESULTS ANNUAL PM<sub>2.5</sub></b>					
Rte 300 at Site Drive	Maximum Predicted Conc. ( $\mu\text{g}/\text{m}^3$ )	Background Conc. ( $\mu\text{g}/\text{m}^3$ )	Receptor With Max. Conc.	Total Pred. Conc. ( $\mu\text{g}/\text{m}^3$ )	NAAQS (Ambient Standard) ( $\mu\text{g}/\text{m}^3$ )
Build	0.30	13.9	12	14.20	15

Note: Ambient background measured concentrations obtained from the NYSDEC, 2004.

<b>TABLE 5 CAL3QHC MODELING RESULTS 24-HOUR PM<sub>10</sub></b>					
<b>Rte 300 at Route 52</b>	<b>Maximum Predicted Conc. (ug/m<sup>3</sup>)</b>	<b>Background Conc. (ug/m<sup>3</sup>)</b>	<b>Receptor With Max. Conc.</b>	<b>Total Pred. Conc. (ug/m<sup>3</sup>)</b>	<b>NAAQS (Ambient Standard) (ug/m<sup>3</sup>)</b>
Build	2.4	44.2	13	46.6	150

<b>TABLE 6 CAL3QHC MODELING RESULTS ANNUAL PM<sub>10</sub></b>					
<b>Rte 300 at Route 52</b>	<b>Maximum Predicted Conc. (ug/m<sup>3</sup>)</b>	<b>Background Conc. (ug/m<sup>3</sup>)</b>	<b>Receptor With Max. Conc.</b>	<b>Total Pred. Conc. (ug/m<sup>3</sup>)</b>	<b>NAAQS (Ambient Standard) (ug/m<sup>3</sup>)</b>
Build	0.60	13.9	13	14.50	50

<b>TABLE 7 CAL3QHC MODELING RESULTS 24-HOUR PM<sub>2.5</sub></b>					
<b>Rte 300 at Route 52</b>	<b>Maximum Predicted Conc. (ug/m<sup>3</sup>)</b>	<b>Background Conc. (ug/m<sup>3</sup>)</b>	<b>Receptor With Max. Conc.</b>	<b>Total Pred. Conc. (ug/m<sup>3</sup>)</b>	<b>NAAQS (Ambient Standard) (ug/m<sup>3</sup>)</b>
Build	1.2	44.2	13	45.4	65

<b>TABLE 8 CAL3QHC MODELING RESULTS ANNUAL PM<sub>2.5</sub></b>					
<b>Rte 300 at Route 52</b>	<b>Maximum Predicted Conc. (ug/m<sup>3</sup>)</b>	<b>Background Conc. (ug/m<sup>3</sup>)</b>	<b>Receptor With Max. Conc.</b>	<b>Total Pred. Conc. (ug/m<sup>3</sup>)</b>	<b>NAAQS (Ambient Standard) (ug/m<sup>3</sup>)</b>
Build	0.30	13.9	13	14.20	15

Note: Ambient background measured concentrations obtained from the NYSDEC, 2004.

Vegetative plantings are planned for the parking lots at the proposed Marketplace development, which may improve local air quality in these areas. Structural soils, which use a combination of angular stones and soil material, achieve required compaction for installation of concrete or asphalt and are recommended for use in small planting areas where root compaction or growth is an issue. For Marketplace, the proposed areas for plantings, particularly those where trees will be planted, are large islands that will be large enough to support such vegetation without the use of structural soils. These large islands will provide sufficient area for tree root growth.

Vegetated roofs, commonly called "Green Roofs", are another method that has been experimented with on a few buildings throughout the country. They have been used for increasing the amount of on-site vegetation by planting trees and other vegetation on the rooftops of buildings typically found in dense urban areas. Although some improvement to air

quality may result from green roofs, the costs of construction versus the limited benefit currently make this option cost prohibitive. In addition to the cost of construction of the roof itself, green roofs create a substantial load to the supporting building and require extensive maintenance to deal with the problems created by putting organic structures on top of a membrane which attempts to be waterproof.<sup>1</sup>

The operation of the facilities proposed for the project will result in minor increases in the overall atmospheric air pollutant burden. Heating and air conditioning systems may 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. The net difference in total air pollution burden is considered to be minimal for this proposed new construction project. The relative air pollution burden added by the construction and operation of the project is insignificant when compared to the current and expected conditions in 2008.

Based on the above analysis, there is no anticipated impacted to air quality as a result of mobile sources and parking lot emissions.

#### *Construction Related Impacts*

Construction activities may have a short-term impact on local air quality through generation of fugitive or airborne dust. Fugitive dust is generated during ground clearing and excavation activities, and generally when soils are exposed during dry periods. Throughout the construction period, passage of delivery trucks and other vehicles over temporary dirt roads and other exposed soil surfaces would also generate fugitive dust. Residences, on Hilltop Avenue, closest to the proposed areas of grading and would have the greatest potential to be impacted by dust.

Construction-related air emissions will result from the use of diesel fuel as a source of energy for construction vehicles and equipment. Diesel engines that are maintained are more fuel efficient than gasoline engines, however, they are a source of some air pollutants. Pollutants from these engines come from the combustion process in the form of exhaust. The major pollutants resulting from diesel fuel include the following:

- Hydrocarbons - Unburned or partially burned fuel molecules consist of hydrocarbons that can react in the atmosphere to form ground-level ozone, a major component of smog that can cause a range of respiratory health problems.
- Carbon monoxide - Emissions from diesel engines contain very low levels of carbon monoxide in comparison to gasoline engines. Carbon monoxide is a colorless, odorless gas that combines with the blood and limits its ability to transport oxygen. Carbon monoxide is the result of incomplete combustion of fuel.
- Nitrogen oxides - Because diesel engines consume fuel and air, and create heat, nitrogen from the air can be transformed into nitrogen oxides. This reddish brown gas can irritate the lungs and eyes. Nitrogen oxides react with hydrocarbons in the atmosphere to form ground-level ozone. Nitrogen oxides also contribute to acid rain.
- Particulate matter - Smoke from diesel engines contains microscopic airborne carbon particles that result from fuel combustion. The smoke from properly maintained diesel

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<sup>1</sup> City of Chicago, Department of Environment website.

engines should not be visible. Exhaust fumes that are thick and black occur when diesel engines are poorly maintained or maintained improperly. Particulate matter can damage the respiratory system and contribute to the odor associated with diesel exhaust.

Construction related impacts would vary based on the proximity of the activities to the adjacent properties and the type and amount of construction equipment used for each project phase. However, to address potential air quality impacts from construction related activities, mitigative measures have been proposed for specific construction activities to minimize the overall impact on the air quality. If mitigative measures are applied properly, adverse air quality impacts would be minimized.

### **3.9.3 Mitigation Measures**

The air quality analysis of the proposed project focused on carbon monoxide (CO) and particulate matter (PM) impacts from traffic generated by the project, which are the critical impacts from an air quality perspective. The analyses show that the existing conditions for the year 2008 along with the “No Build” and “Build” conditions for the year 2008 are not expected to cause a violation of the current NAAQS standards. Therefore, no mitigation measures are warranted.

The traffic analysis was performed at selected intersections and contained a variety of mitigation measures consisting of intersection roadway configuration modifications and signalizations changes. The air quality analysis included these proposed changes, and therefore, the project as designed will contain adequate safeguards keeping truck idling times limited to 5 minutes or less to maintain air quality standards. During construction, standard mitigation measures such as dust control and others should be adequate to maintain air quality levels within applicable standards.

As mentioned previously, “green” roofs are being pursued in several cities as part of the US EPA’s Heat Island Reduction Initiative. The objectives of the program are to reduce heat and related air quality issues. According to the US EPA, these cities are experiencing serious air quality problems. As the Marketplace is not anticipated to have a measurable impact on air quality, the green roof program is not considered a necessary mitigation by the Applicant. The applicant is, however, proposing the planting of a large number of trees on the property. More than 500 trees will be planted within landscaped islands in the parking areas and along access roads. It is expected that as these shade trees grow to maturity, shading of the asphalt parking lots will be a long term benefit, as well as carbon uptake during photosynthesis. A total of more than 1,000 trees will be planted on the site, in addition to a large number of shrubs and low maintenance grass areas.

#### Dust Control Measures During Construction Activities

Construction activities on the project site would have a potential impact on the local air quality through generation of fugitive or airborne dust. Fugitive dust is generated during ground clearing and excavation activities. Throughout the construction period, passage of trucks and other vehicles over temporary dirt roads and other exposed soil surfaces also generates fugitive dust.

With proper site maintenance and careful attention to construction activities, impacts from fugitive dust can be maintained below the state or Federal AAQS at off-site properties.

Although exhaust emissions from construction equipment is not as significant as fugitive dust generation, particulates from diesel exhaust emission should also be controlled through proper tuning of the vehicles engine and maintenance of the air pollution controls. This would minimize additional contribution to site generated particulate emissions during construction.

Fugitive dust may be generated by grading and excavation, and the truck traffic on temporary dirt roads. Standard construction dust control methods would be employed to ensure that construction generated dust does not impact off-site residents. These methods include:

- Minimizing the area of grading at any one time and stabilizing exposed areas with mulch and seed as soon as practicable;
- Minimizing vehicle movement over areas of exposed soil, and covering all trucks transporting soil; and
- Unpaved areas subject to traffic would be sprayed with water to reduce dust generation.

The potential for emissions from construction vehicle exhaust can be reduced by the proper maintenance of engines and air pollution controls. No additional mitigation measures are proposed.



### **3.10 Visual Quality**

#### **3.10.1 Existing Conditions**

##### Introduction

The visual assessment that is presented below has been conducted in accordance with the NYSDEC guidelines relating to visual impact assessments.

“View shed” is defined as the geographic area from which a “facility” or project may be seen. A significant aesthetic resource is a designated place visited by the public for the purpose of enjoying its beauty. A resource may be designated by a locality, a state agency, or a federal agency.

A visual assessment is an analytical technique that determines the view shed of a particular project, identifies aesthetic resources within the view shed, determines the potential impact of the project on the aesthetic resources, and identifies strategies to avoid, eliminate or reduce adverse impacts. The visual assessment may incorporate line-of-sight profiles or photographs to demonstrate potential visibility of a facility from a sensitive viewpoint.

Variables associated with the actual visual experience include but are not limited: atmospheric perspective (diminishing clarity and contrast of view due to atmospheric interference), and size perspective (reduction of apparent size of objects as distance increases). It is noted that mere visibility of a facility/development, even startling visibility, does not automatically mean it has an adverse visual or aesthetic impact. Aesthetic impact occurs when there is a demonstrated detrimental effect on the public enjoyment of an aesthetic resource. Visual impact occurs when mitigation measures, or the mitigating effects of perspective, do not adequately reduce the visibility of a facility from an aesthetic resource to an insignificant level.

##### Site Views from Area Roads

The site would be potentially visible from a number of public viewing places, mostly roads. The project site fronts on, and would be visible from, the following roads: Interstate Route 84 (I-84), NYS Route 300, South Plank Road/Meadow Avenue and NYS Route 52 and Powder Mill Road. Specifically, the roads in the project vicinity have not been designated by local, state or federal agencies as scenic byways or roads which afford scenic views. However, it is noted that approximately 7 acres of land within the I-84 right-of-way abutting the project site maintains a scenic easement.

The Orange Mill Historic District is across the road from the project site at the northeast corner of the NYS Route 52/Powder Mill Road intersection. This district is part of the County-operated Algonquin Park.

Windshield and field surveys of views of the project site from area roads were conducted to ascertain existing visual conditions in order to compare existing views with views of the site after development is complete.

Figures 3.10-1, 3.10-2, 3.10-3 and 3.10-4 show photographs of the project site from area roads.



View Towards Project Site from Route 84 looking Northwest



View Towards the Project Site from Route 84 East

Figure 3.10-1: Existing Views of Project Site: I-84  
The Marketplace at Newburgh  
Town of Newburgh, Orange County, New York  
Source: Tim Miller Associates, Inc., 10/25/05





View Towards Project Site from Route 300



View Towards the Project Site from Route 300 - Route 84 Ramp

**Figure 3.10-2: Existing Views of Project Site: NYS Route 300  
The Marketplace at Newburgh  
Town of Newburgh, Orange County, New York  
Source: Tim Miller Associates, Inc., 10/25/05**



View of the Project Site from Route 52 Overpass



View of the Project Site from Route 52 Overpass

Figure 3.10-3: Existing Views of Project Site: NYS Route 52 Overpass  
The Marketplace at Newburgh  
Town of Newburgh, Orange County, New York  
Source: Tim Miller Associates, Inc., 10/25/05





View of the project site from the intersection of Innis Avenue and Route 52



View of the Project Site from the intersection of Powder Mill Road and Route 52

Figure 3.10-4: Existing Views of Project Site: Powder Mill Area  
The Marketplace at Newburgh  
Town of Newburgh, Orange County, New York  
Source: Tim Miller Associates, Inc., 10/25/05

### *Interstate 84*

Interstate 84 is a state-maintained highway which is part of the federal network of highways. This highway travels in an east-west direction within the project vicinity and adjoins the project site along the site's southerly property boundary. The views of the site from I-84 (see Figure 3.10-1) are currently of a wooded, undeveloped property. The property is topographically higher than I-84, culminating in a low hill at the rear center of the property with an elevation of 442.7 feet above mean sea level (msl) which is 1,400 feet north of I-84 and not readily visible from the highway when viewed from the I-84 frontage.

I-84 varies in elevation along the site's frontage. The highway rises from an elevation of approximately 257 feet msl just west of the NYS Route 52 overpass at Exit 7 to an elevation of approximately 369 feet msl near its off-ramp to NYS Route 300 at Exit 8. There is a vertical difference in elevation that varies from approximately 73 feet to 186 feet as measured from I-84 to the highest elevation on the project site. Direct views into the site from I-84 are obscured due to an embankment that rises 50 feet in height above the existing grade of I-84, approximately 100 feet east of the overhead exit sign for the Route 300 westbound ramp.

The landscape that is observed from I-84 between the NYS Route 300 and NYS Route 52 interchanges is a mix of commercial, residential, and wooded properties. Views from the highway are common for suburban areas and are not aesthetically significant.

### *NYS Route 300 (Union Avenue)*

NYS Route 300 is a public road which travels in a north-south direction in the vicinity of the project site. The site appears wooded and undeveloped as viewed from NYS Route 300. Road grades on NYS Route 300 vary from approximately 370 to 375 feet msl at the southerly driveway to the Newburgh Mall. The site is fairly level east of NYS Route 300 for a distance of approximately 1,000 feet before increasing in elevation towards the interior of the site. Figure 3.10-2 presents views from this road. Views from this public road are typical of commercial corridors and are not aesthetically significant. Due to the flatness of the site in the vicinity of NYS Route 300, views are of the first rows of trees along the property edge and the interior knoll is not readily visible.

### *NYS Route 52 at I-84*

The project site extends to NYS Route 52 and a proposed easterly drive would intersect with same in the vicinity of 5th Avenue. In this location, views are of older commercial establishments, including a gas station, and residences along NYS Route 52 and Brookside Avenue. As seen in Figure 3.10-3, views depict the front rows of trees, and the knoll located on the project site is not visible due to distance, aspect, and intervening vegetation.

Where the project site meets NYS Route 52, the project site elevation is approximately 272 feet msl. The project site, in the vicinity of Brookside Avenue and then continuing onto the vacant portion of the property, is at a comparable elevation and is relatively flat. Existing views of the project site from NYS Route 52 are suburban in character. Figure 3.10-3 illustrates views from of the site from the interchange area.

*Meadow Avenue/South Plank Road/Powder Mill Road Intersection Area*

Where the site adjoins Meadow Avenue and South Plank Road, the elevation is approximately 320 feet msl. This is approximately 123 feet below the knoll on the site. On-site wetlands are located along the project site's border along Meadow Avenue and NYS Route 52. Due to the presence of on-site vegetation located in the foreground, the knoll and higher elevations of the site are not visible from this vantage point. Figure 3.10-4 illustrates views from this location. It is not anticipated that buildings in the Marketplace would be visible from this vantage point.

The visual character of this intersection could be considered transitional, as the western approaches to the intersection, i.e., Meadow Avenue and NYS Route 52, are commercial in nature. A gas station, pizzeria, and firehouse are located immediately along these approaches. Traveling east along NYS Route 52, the county park system begins on the northerly side of the road, and residences are located on the south side.

*Brookside Avenue*

The project will cross Brookside Avenue and meet NYS Route 52 at the east end of the property. Brookside Avenue is flanked on either side by single family homes. Partial views of the project site located behind homes on the south side of Brookside Avenue are of a vacant wooded property that is inclining gradually. The views from this location are not aesthetically significant as defined by NYSDEC guidelines. The overall visual character in this location is residential. It is not anticipated that any of the Marketplace buildings will be visible from this location.

Views of the site from Adjacent Residential Properties

Figures 3.10-5 and 3.10-6 show photographs of adjacent residential properties at key locations. As the project proposes the development of several buildings that would be in close proximity to the property line shared by residences that front on Hilltop Avenue and South Plank Road (to a lesser extent), line of sight profiles were prepared to assess existing and future views of the site from homes along these two roads.

As defined in NYSDEC's Bulletin "Assessing and Mitigating Visual Impacts", a line of sight profile is defined as a "*graphic depiction of the depression and elevations one would encounter walking a straight path between two selected locations. A straight line depicting the path of light received by the eye of an imaginary viewer standing on the path and looking towards a predetermined spot along that path constitutes the line of sight. The locations along the path where the viewer stands and looks are the control points of the line of sight profile.*"

Presently, the homes on Hilltop Avenue are elevated above the project site. These homes have views from their rear yards of the wooded perimeter of the site. The rear facades of several residences on Hilltop Avenue are approximately 30-50 feet away from the property boundary.

Homes on South Plank Road are topographically lower in elevation than the adjoining project site. One of the dwellings is approximately 20 feet from the shared property line as





Older Residence on the North Side of Hilltop Avenue



View of the Project Site from South Plank Road

Figure 3.10-5: Existing Views of Project Site: Residential Area 1  
The Marketplace at Newburgh  
Town of Newburgh, Orange County, New York  
Source: Tim Miller Associates, Inc., 10/25/05





Older Residence on the North Side of Hilltop Avenue



View of New Street looking down towards the Project Site

**Figure 3.10-6: Existing Views of Project Site: Residential Area 2**  
The Marketplace at Newburgh  
Town of Newburgh, Orange County, New York  
Source: Tim Miller Associates, Inc., 10/25/05

measured along the side lot line. Views of the project site from this location are of a wooded hillside.

Brookside Avenue connects NYS Route 52/South Plank Road and ends in a cul-de-sac that presently maintains views of traffic traveling on I-84. Homes on either side of Brookside Avenue are predominantly older, Cape Cod and bungalow-style single family residences. Photographs of the site were taken from this street to analyze the existing views (see Figure 3.10-7).

The project site also shares a property line with single-family dwellings that front on Charlile Circle. The visual character of the neighborhood is residential and suburban. The project site is visible from Charlile Circle - views are of the front line of trees along the property boundary. As the site is relatively flat for approximately 500 feet into the site, the knoll on the site is not visible from this road.

Views from Wintergreen Avenue are not of the project site, but of two vacant properties located between the residences on Wintergreen and the project site. One of these properties is privately owned, and the other property is owned by the Town of Newburgh.

It is noted that several site visits with neighbors on Hilltop Avenue and separate field trips were conducted in the spring and early summer of 2005. Existing site conditions were observed during these visits. Due to the tight spaces for taking photographs and the height of the tree canopy in the woods, it was not possible to photograph panoramic views from the rear of the properties illustrating the ground plane and the tree canopy without significantly distorting the view with a device such as a fish eye lens. Views through the under story of the woods extended approximately 100 feet or more into the woods.

### **3.10.2 Potential Impacts**

The proposed project would convert approximately 107.7 acres of vacant wooded property to retail use. Grading activities to prepare the site would result in topographic alterations that may alter views of the site. Construction of retail buildings and parking areas may likewise alter views. Portions of the property may appear more open with the removal of the tree canopy as viewed from the surrounding roads and residential areas that adjoin the site. This section is intended to describe these potential changes.

#### Altered Views from Area Roads

Construction of the Marketplace would remove existing woodland from the site, result in topographic changes due to grading activities, and introduce a commercial shopping center with ancillary parking and internal drives changing the existing visual character of the project site.

The project would introduce views into the site from NYS Route 300. Specifically, the lifestyle center and boulevard entry would be visible from NYS Route 300. This change in view would not have an impact on NYS Route 300, as this road is already commercialized in the project vicinity. The visual character of the shopping center would be compatible with its surroundings. Stone walls are proposed along the main drive and along Route 300. The dimensional attributes of the proposed stone walls, as shown on the attached landscape plans, are based on walls at the historic Boscobel Restoration in Garrison, Putnam County.





Single Family Homes on Brookside Avenue with the Project site in the background



A view of Brookside Avenue ending in a cul de sac towards I-84

**Figure 3.10-7: Existing Views of Project Site: Brookside Avenue**  
The Marketplace at Newburgh  
Town of Newburgh, Orange County, New York  
Source: Tim Miller Associates, Inc., 10/25/05

Views of the project site from I-84 would be altered as the lifestyle center would become visible from the Exit 7 westbound off-bound ramp from I-84 onto NYS Route 300. The rear facade of buildings A and B would become partially visible as the project site's existing grade will be elevated, and the building's first floor levels will be at an elevation higher than the existing grade of the off-ramps. However, existing vegetation located within the I-84 right-of-way and the significant grade change between the building and regraded site elevation and the elevations along I-84 would remain and would partially screen views of the site during on-leaf conditions and to a lesser extent, due to topography, year round. During off-leaf conditions, the buildings would be partially obscured by the tree trunks, limbs and woody vegetation. Although views from I-84 would be altered, the views are not significantly different than views of the Newburgh Mall and the NYS Route 300 corridor visible from I-84 in this vicinity.

The view from NYS Route 52 would be altered, as a new approach to the Powder Mill/Meadow Avenue/NYS Route 52 intersection would be added. However, due to the presence of regulated wetlands that would be preserved and enhanced at the site's entrance, the entry would maintain much of its existing natural appearance. Moreover, the closest proposed structure in the Marketplace is more than 700 feet from this proposed intersection and much of the existing heavily wooded area in this 700-foot area is shown to remain in its present state. As a result, the Marketplace structures will not be visible from this newly proposed access/ intersection.

As the intersection is transitional in character, i.e., land uses at the intersection are residential and commercial, the new approach would not significantly alter the visual character of this location. According to the traffic engineering consultant for the project, it is anticipated that a segment of the Meadow Avenue approach near the intersection will be removed and replanted. Thus, a four-legged intersection would be maintained visually.

The introduction of a new intersection on NYS Route 52 at 5th Avenue would not significantly impact this location, as the visual character at this location, extending to I-84, is commercial in nature. Again, the nearest Marketplace buildings would be more than 2,000 feet from this proposed access point. Changes in views as observed along Brookside Avenue are addressed below.

In summary, views of the Marketplace buildings from NYS Route 52, NYS Route 300, and I-84 are not anticipated to result in a significant impact.

#### Altered Views from Residential Areas

The site's topography will be altered on the northeast side of the site near the homes on Hilltop Avenue and, to a lesser extent, behind the five homes on Route 52 to the north of Hilltop Avenue. The post construction condition will lower the existing elevations of the project site near most of the residences on Hilltop Avenue and raise the topography behind the five homes on NYS Route 52.

Line of sight profiles were developed to demonstrate changes in views from six locations. The profiles reveal the topographic changes that will occur on the project site and identify the natural vegetation that would remain. Figures 3.10-8a and 3.10-8b depict these profiles. As

can be seen from this plan, a homeowner standing in his or her back yard will be fully screened from view of the proposed buildings.

The South Plank Road homes are at lower elevations in relation to the proposed regraded site. Section A-A' (Figure 3.8-10a) illustrates the remaining wooded area and the proposed embankment. Due to intervening vegetation and the embankment, the sight line from the rear yard of this residence demonstrates that views of the buildings would be blocked, even without the remaining wooded buffer. Therefore it is not anticipated that there will be views during either summer or winter months from this vantage point.

The post-development condition will effectively reduce the apparent height of the new buildings resulting in very limited views as illustrated in the cross sections. The home at section D-D' will be completely blocked from views due to intervening topography, even without the significant remaining wooded buffer of approximately 100 feet in depth. The homes at sections B-B' and C-C' will have limited upper rear wall views, primarily at the parapet height. These views will be constrained in part by the intervening topography and remaining woods, and in part by the proposed eight-foot high solid fence and landscape screening. During the summer months, the largely deciduous woods will provide additional screening to obscure much of the already limited view of the new buildings.

Sections E-E' and F-F' (Figure 3.10-8b) show views from Route 300 and Route 84. Section E-E' is a section from a view on Route 300, looking in toward proposed Building 3 of the lifestyle center. Building 3 will be visible from Route 300, with proposed stone walls and tree and shrub plantings intervening. This treatment is an attractive treatment for new retail development on a busy road, and in fact will be more attractive and a "softer" transition to retail space than most of the existing development on Route 300. Section F-F' is a view from Route 84 just east of the site, in the line of sight of vehicles traveling westward on Route 84. This section shows that intervening topography and existing vegetation to be preserved will prevent views of Building E and the associated parking lots.

As illustrated in the line of sight profiles presented in these figures, the potential lines of sight are intercepted at the tree line, and would pass over the top of proposed commercial buildings on the Marketplace site. In winter months, it is possible that glimpses of roof tops of the new buildings may be seen from the area to the immediate north. Given the distance of the potential viewer from the project site, this view would appear as a small portion of the broader view of the nearby and distant landscape. Thus, the view from the nearest public roads to the north will not change significantly due to the wooded buffer that is proposed to remain on the project site and the distance from the viewer, as well as intervening foreground trees.

Potential views of the project site observed from points on Brookside Avenue were also evaluated. As all the proposed structures at the marketplace are more than 2000 feet from the homes on Brookside and given the area along the access road will remain wooded in the post development condition, the Brookside residences will not have direct visibility to the Marketplace buildings. A more than 100 foot elevation change will add to this lack of visibility.

Therefore, the easterly access drive would travel 50 feet beyond the rear property line of homes situated on Brookside Avenue and would ultimately cross the present end of Brookside Avenue and intersect with NYS Route 52. It is expected that the cul-de-sac would

be shortened, and would not connect to the new access drive. Construction of the drive in the vicinity of Brookside Avenue does not entail significant grading, and the road would be constructed at the approximate same grade as the existing topography. Thus, the road would not be made visible by elevating it in relation to the heights of the adjoining residences. As the road does not require significant grading, existing vegetation will be retained between the road and the rear property lines of these residences and would not be visible during on-leaf conditions. During off-leaf conditions, there may be partial views of the vehicles traveling along the drive. If DEIS Alternative 1 is selected, the access road will be relocated farther south near I-84 and all the visual, noise, and light potential impacts will be reduced.

Given the profile of the buildings on the site in relation to the site topography, trees to remain, and distance between Brookside Avenue and the proposed buildings, it is not anticipated that the development area would be visible from Brookside Avenue.

The homes on Charlile Circle are buffered from the proposed development by on-site regulated wooded wetlands that would be preserved and existing vegetation that would be retained at the project site's shared property line with these residences. Based on a review of the intervening tree cover, topography and the distance from the viewer, changes on the project site would not be expected to be visible. It is unlikely that the new buildings would be seen from these homes during winter months due to the proposed reduction in the site's uppermost elevations which reduce the potential visibility of the proposed buildings. It is possible the storm water basins along the northerly drive would be visible from several homes. This would be mitigated by proposed landscape plantings.

Existing vacant, heavily wooded properties located between the project site and Wintergreen Avenue would continue to screen views of the project site from residences located there.

Given the location of buildings, proposed topography, distant to adjoining residences, and the positioning of the sun in relation to the site, the buildings will not have a shading effect on nearby homes.

The Orange Mill Historic District would not be impacted visually by the Marketplace as new views would be limited to the view of the access drive that would intersect with three existing roads in the same location. A portion of Meadow Avenue would be relocated to connect into the new access drive, and a segment of the road at the intersection would be closed, removed and replanted. No new buildings would be visible from the historic district. Natural vegetation will be preserved along the perimeter of the property, thus preserving distant views of trees. Buildings would not extend above the tree line that would remain.

#### Night Lighting

The lighting plan for the shopping center will be designed to provide overall nighttime illumination on all primary roadways and parking areas. Lighting intensity would be kept at levels adequate for public safety and security. The overall lighting plan will include street lights of a standard design selected for the project and located on the site to create an optimal lighting pattern while minimizing glare. Night lighting is planned for roads, parking areas and walkways on the site, and to illuminate buildings and signs. Proposed pole mounted lights are shown on the drawings (See Lighting Plan Sheet 1 of 2) accompanying the DEIS.

It is expected that night lighting will produce levels of illumination that would not create a nuisance to nearby residences or an objectionable nighttime “glow” over the project site. The lighting of the primary roadways of the shopping center will be laid out as an integral design for all-night illumination. All lighting will be “down” lighting with the exception of some sign lighting, which may be installed in the ground and cast upwards. Lighting, in select locations near residential areas, will include appropriate shields, if needed, to limit stray light, and will be designed such that energy is not wasted by illuminating nonessential surfaces. At the residential property lines, the foot candle level will be zero (0).

Road, parking lot and sidewalk lights will be pole-mounted down lighting used to illustrate the travel ways and walking surfaces. All lights will be directed to site surfaces as necessary to provide safe conditions for shoppers and employees during evening hours of operation. Pole-mounted lights have been located along roads and in parking areas.

Building mounted lighting will be used to illuminate entries. Lights will be cast down to provide adequate illumination of entrances and minimize spillover.

In addition to adhering to the Town of Newburgh’s zoning regulations, and any conditions imposed as part of site plan approval, the Marketplace at Newburgh would also form an Architectural & Signage Review Committee that would enforce and ensure compliance of the lighting standards. No construction or sign installation would be allowed to proceed without the committee’s approval.

#### Marketplace Architectural Theme

The architecture will be commercial in nature with various building classifications from “main street” style to “large format” retailers. Building design would be articulated to have the effect of reducing visually the bulk of the proposed buildings. The project would incorporate an eclectic variety of buildings and facades with an overall design compatibility. The initial architectural designs would be consistent with modern high end and open-air retail facilities with a theme best described as “new urbanist”.

The lifestyle center (refer to Figure 3.10-9) would consist of freestanding stores clustered around open air plazas with sidewalks, street-side cafes and limited “on-street” parking, representing itself as a vibrant “main” street. This center would have high-quality architecture that would focus on certain retail sectors and blend mixed-uses typical of a traditional main street. It would be a pedestrian-friendly center where visitors can gather in attractive outdoor spaces. Figure 3.10-10 indicates the relative location of the view presented in Figure 3.10-9. This figure also provides more clarity regarding the integration of buildings, parking and open air pedestrian areas.

Compatibility between the different building types would be achieved through techniques such as repetition of roof lines, the use of similar proportions in building mass and outdoor spaces, similar relationships to the street, similar window and door patterns and the use of building materials and color shades and textures that tie all components together and compliment the surrounding buildings. Figures 3.10-11 thru 3.10-13 show representative photographs of a retail center in the northeast that has a similar theme and architectural elements to those proposed for the Marketplace.



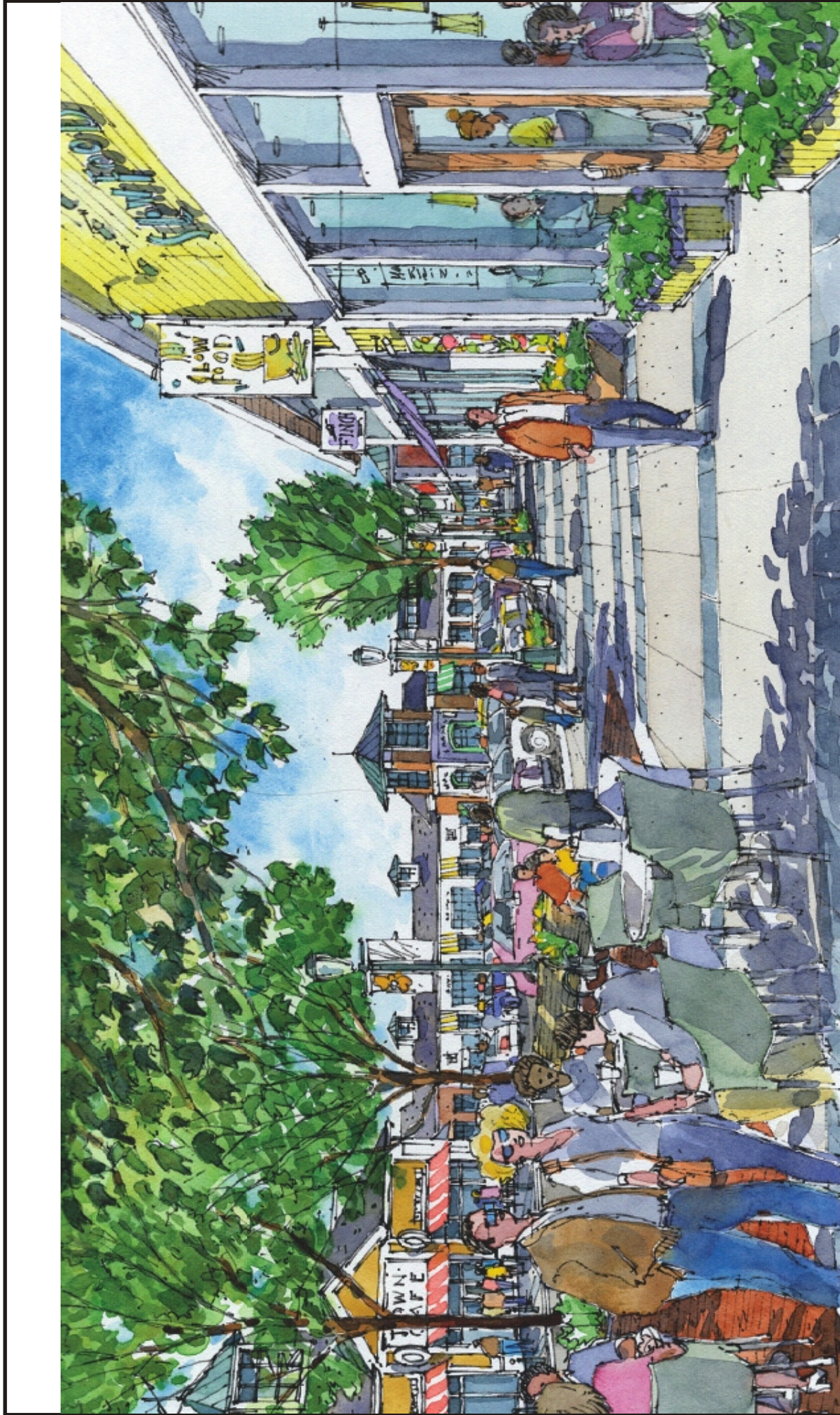


Figure 3.10-9: View of the proposed Life Style Center  
The Marketplace at Newburgh  
Town of Newburgh, Orange County, NY  
Date: 10/25/05





Figure 3.10-10: Rendered Site Plan Showing  
Location of Figure 3.10-9  
The Marketplace at Newburgh  
Town of Newburgh, Orange County, New York



The picture below represents examples of what buildings would like designed to the criteria described in the EIS. Uses of multiple materials in the appropriate scale allows for large format retailers to relate to smaller stores. Larger blocks such as split face, are used to scale down a building, while using the same color tone as the brick water tables form nearby buildings. Brick accents also can be used in the larger format buildings that also tie the buildings together. Notice the use of EIF molded accents to give character and establish a presence



Figure 3.10-11: Architectural Theme 1  
The Marketplace at Newburgh  
Town of Newburgh, Orange County, New York

The picture below represents examples of what buildings would like designed to the criteria described in the EIS. Uses of multiple materials in the appropriate scale allows for large format retailers to relate to smaller stores. Larger blocks such as split face, are used to scale down a building, while using the same color tone as the brick water tables form nearby buildings. Brick accents also can be used in the larger format buildings that also tie the buildings together. Notice the use of EIF molded accents to give character and establish a presence



Figure 3.10-12: Architectural Theme 2  
The Marketplace at Newburgh  
Town of Newburgh, Orange County, New York



The picture below represents examples of what buildings would like designed to the criteria described in the EIS. Uses of multiple materials in the appropriate scale allows for large format retailers to relate to smaller stores. Larger blocks such as split face, are used to scale down a building, while using the same color tone as the brick water tables form nearby buildings. Brick accents also can be used in the larger format buildings that also tie the buildings together. Notice the use of EIF molded accents to give character and establish a presence



Figure 3.10-13: Architectural Theme 3  
The Marketplace at Newburgh  
Town of Newburgh, Orange County, New York

The project will use a wide range of materials that are suitable to the project. The materials used for the project would be stucco-like finishes (EIFS) such as STO and Drivot, to break up large expansive surfaces. Larger buildings would use larger masonry products such as split face block, shot face block and jumbo bricks to reduce visually the scale of the larger buildings. Painted blocks would be used in low traffic areas with colors consistent with the front facade. Patterns would be painted or materially integrated into the walls to break the monotony of large facade surfaces.

The smaller buildings would use smaller masonry products integrated with stucco like finishes. Larger masonry units such as block, stone and precast concrete would be used to tie the smaller stores into the large storefront counterparts. As an element to break the masonry style, wooden trim and facades would be used. Abutting buildings would integrate some of the materials of adjacent structures. For example, accent bricks used on the columns of building "A", would be used as the base brick for building "C".

A warm palette of colors would be used in Marketplace's design . The colors and lights of retailer signage would play an integral part of the overall design. Buildings would be in multiple types and colors of bricks and blocks. Bright colors would be used on awnings, roof parapets, door casings, window trim, and architecture features sparingly.

Site dumpsters would be screened from public view. In most cases where dumpsters are to be placed behind buildings which are not visible to the public, the dumpsters would be secured by a chain link fence and screened with plastic insert slats or similar opaque material. In highly visible areas, wooden or masonry structures would be used to screen dumpster areas.

### Signage

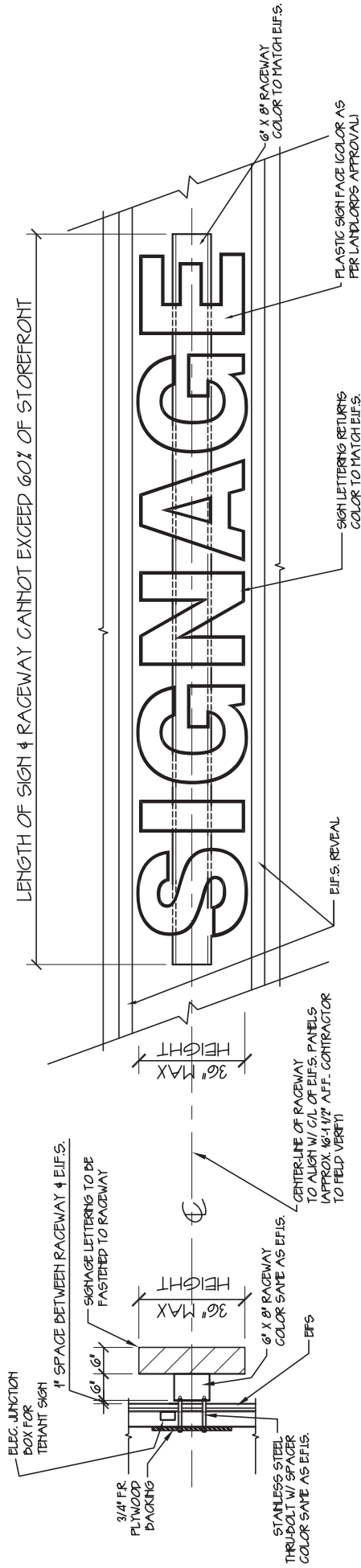
The primary shopping center identification signs will be located at the Marketplace's entrances on NYS Route 300, Route 52 and 5th Avenue. These signs would list the name of the shopping center and the major retailers. Other directional signs and directories will be placed internally along parking lot entrances and on individual buildings. Figures 3.10-14 through 3.10-16 show conceptual sign criteria and examples.

The Town of Newburgh zoning ordinance limits the number and size of signs for use on commercial properties based on the amount of road frontage of a property. In the case of the Marketplace, up to 3,304 square feet of signage is permissible based on the 6,609 linear feet of frontage. The current conceptual plans for signage, both internal and at the property boundaries, total approximately 3,110 square feet as shown below on Table 3.10-1.

<b>Table 3.10-1 Proposed Signage and Zoning Compliance Marketplace at Newburgh</b>			
<b>Sign type</b>	<b>Number</b>	<b>Average Size</b>	<b>Total SF</b>
Shopping Center Identification Sign	4	130	520
Directory Sign	2	30	60
Directional Sign	7	15	105
Large Building Signs	5	200	1,000
Medium Building Signs	3	100	300
Small Building Signs	25	45	1,125
		Total	3,110 sf
		Allowable under Zoning	3,304 sf

**SIGN BOX**

1. ALL MOUNTINGS, BRACKETS, TRANSFORMERS, ETC. MUST BE CONCEALED. SWITCHES MUST BE RECESSED.
2. DESIGN DWGS MUST BE SUBMITTED TO LANDLORD FOR APPROVAL. SIGN SHALL NOT BE INSTALLED WITHOUT APPROVED SHOP DRAWINGS.
3. NO HAVE TAGS OF SIGN FABRICATORS ARE PERMITTED.



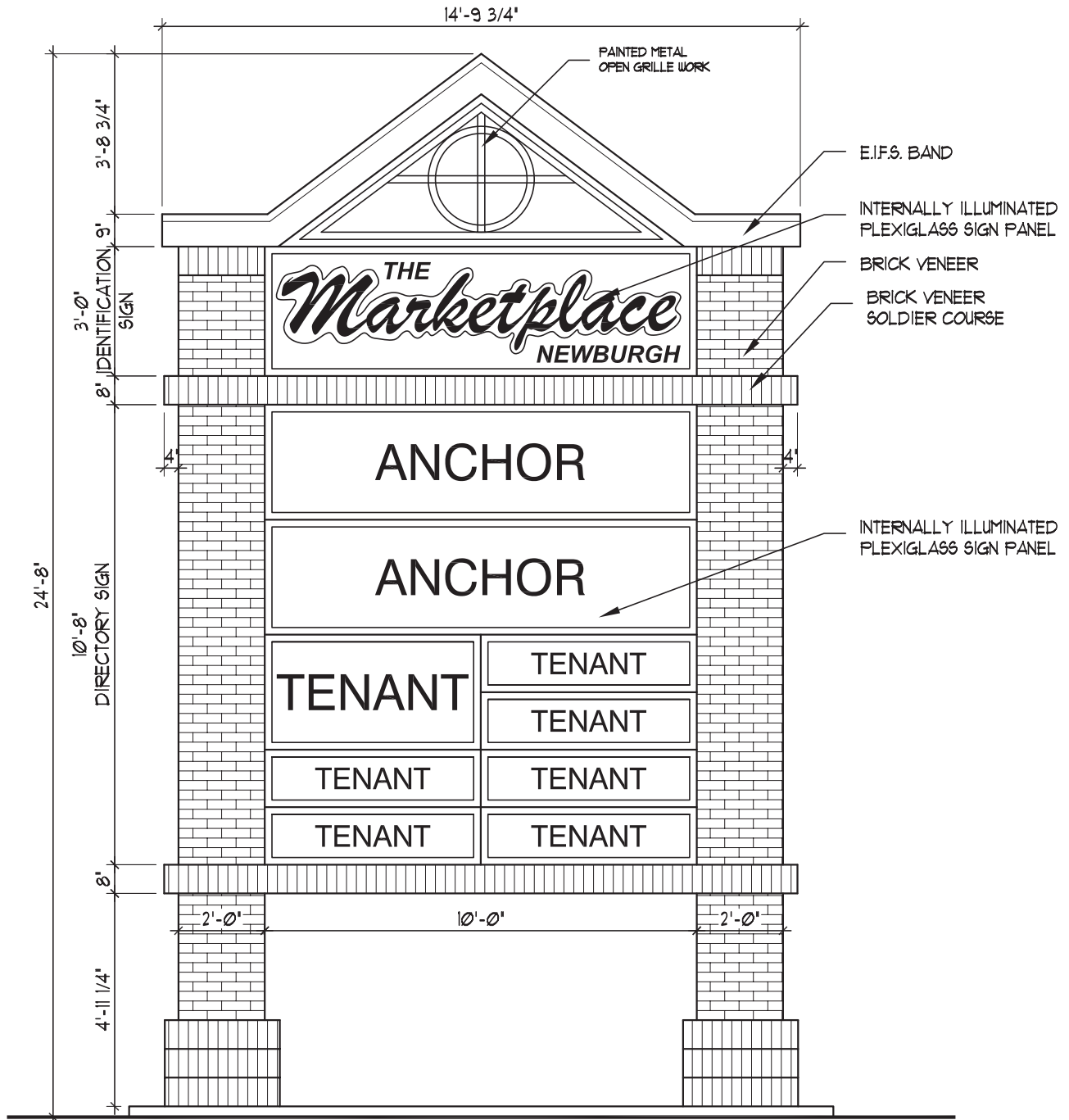
**SECTION THRU  
SIGNAGE RACEWAY**  
NTS

**SIGN ELEVATION**  
NTS

**SIGN CRITERIA - SATELLITE STORES**

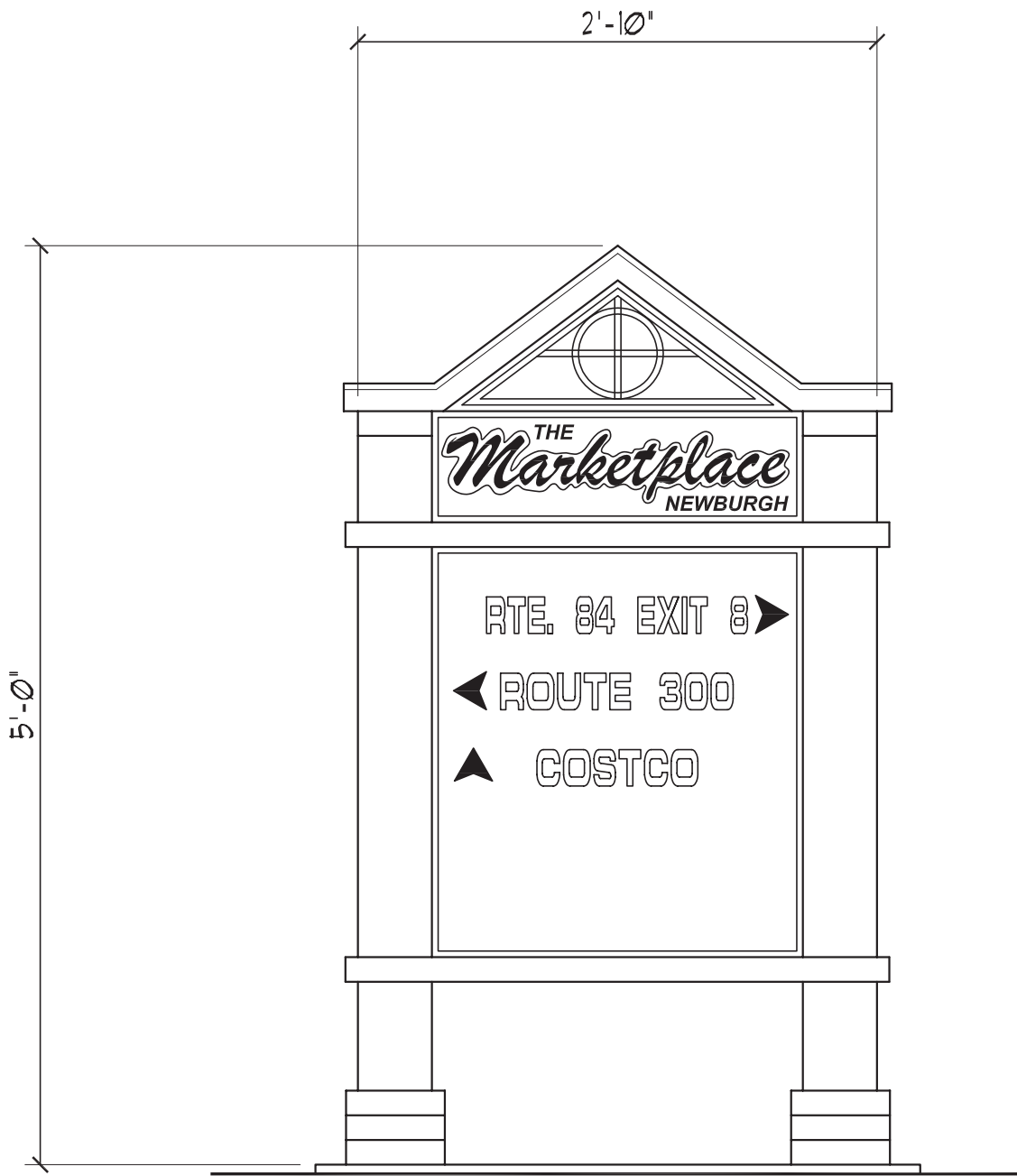
**MSA**  
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**Figure 3.10-14: Proposed Signage Criteria**  
The Marketplace at Newburgh  
Town of Newburgh, Orange County, New York



# PYLON SIGN

Figure 3.10-15: Conceptual Pylon Sign  
 The Marketplace at Newburgh  
 Town of Newburgh, Orange County, New York



# DIRECTIONAL SIGN

Figure 3.10-16: Conceptual Directional Sign  
 The Marketplace at Newburgh  
 Town of Newburgh, Orange County, New York



Colorful signage would be used when appropriate to add energy and life to the Marketplace. Illuminated single channel back lit signs would be used, however, other signs will be allowed by exception for appropriate uses. For example, a theme restaurant such as an Irish Pub may have an externally lit wood-carved sign. The stores that have more than one facade facing a road would be designed with a false storefront and would incorporate an additional, illuminated sign to break up the walls expanse. Brick patterns and various colors would be used to create this false facade which is intended to present a more welcoming facade to the public realm.

Other signs to be incorporated into the site's design would include directional signs for stores, and traffic control signs, e.g. stop signs, yield signs, etc. Proposed traffic control signs are shown on the site plan accompanying this DEIS

### **3.10.3 Mitigation Measures**

#### Landscaping

It is expected that the proposed landscape treatments within the developed areas, including installation of shade trees throughout the project to create a new canopy of tree cover, as well as careful selection of architectural treatment of the buildings (for example, building colors and varied rooflines), will minimize any potential adverse effect of the visual change. It is also noted that the views from area roads would be experienced briefly by people in moving vehicles rather than from stationary view points.

A landscaping plan is provided as a drawing in the site plan set that accompanies the DEIS. Landscape plantings will be utilized to compliment the landscape, to screen potentially objectionable views and to replace plants lost due to clearing the site for development. Outside tree, shrub and perennial plantings areas would be integrated with the building fronts, and other non-impervious surface would be maintained as lawn.

Presently, the site is densely wooded and is screened from most of the adjacent properties and roads with trees. The potential visibility from small portions of New Street Road and Hilltop Avenue in the site vicinity is possible through narrow vistas in the foreground trees. Given the density of the intervening tree cover at these locations, and the tree cover in the proposed plan, none of these vistas would provide a significant view where changes on the project site would be expected to be readily noticeable.

While the project will remove the existing tree cover, the developed portion of the project as proposed will remain obscured from view by the trees that are proposed to remain on the northern portions of the site and, therefore, will not dominate the rural/suburban view from homes adjacent to the site.

Plants used to compliment the new development will include street and parking lot trees and shrub plantings, building foundation plantings, and plantings around the bases of signs or other site features. Trees along streets and parking lots will be deciduous shade trees. These plantings will be supplemented with lower shrub bed and/or perennial bed plantings in portions of boulevard and parking lot islands. Foundation plantings will soften the transition of building masses to the ground plane and will consist of a mix of deciduous and evergreen trees, shrubs and perennials. Mow zones will be established along the perimeter of the

property, with mowing limited to four feet off the curb, with a conservation seed mix and shrubs interspersed beyond. A detail of the mow zone is provided with the landscaping plans.

Plants utilized to screen potentially objectionable views will include a mixture of deciduous and evergreen trees and shrubs, with a higher concentration of evergreen plant material than in other areas to provide a more effective year round effect. These plantings will be employed around the perimeter of the site to screen parking areas, refuse storage areas, the rear of buildings, and other potentially objectionable views from the public.

On the shared property line between the rear yards of homes on Hilltop Avenue and Buildings C and D, there will be particular emphasis on landscape treatment by providing a new vegetation edge along the limit of disturbance line, adding to the existing visible screen between residents and the shopping center. The vegetation edge will also contain a fence for additional screening, security and sound attenuation.

The evergreen plantings at the top of the stone cut behind Buildings C and D will consist of hard pine toward the shopping center, planted in a double staggered row, with lower trees and shrubs on the wooded side to soften the view from residences. An eight foot high, solid panel fence will be placed at the top of the rock cut and in the proposed 50 feet setback from the property line. Tree sizes along this berm have been increased from preliminary versions of the plan, and will now be planted at eight to nine feet in height so that a minimum goal of ten foot high trees after three years will be reached.

The 8-foot high solid fence will be placed to avoid existing trees and the variable top edge of rock cut. The placement and quantity of new plants in this location will depend on analysis of field conditions relative to the location of existing trees. The priority will be to save as many trees as possible and then planting areas where tree removal has created a need for supplementary plantings.

To the south and east of building D, where there are no buildings to be screened, the goal will be to diminish the visual disturbance by blending unobtrusive landscaping and fencing. The planting line will continue at the top of the slope with an eight foot high, visually unobtrusive security fence, which is a solid wooden fence. The shopping center side of the fence would be planted with evergreen materials, near the top of the bank, for maximum screening effect.

The adjoining residential properties to the north and west of Building C are located significantly lower in elevation than the site. The fill slope will be constructed of rip rap from shot rock removed to level the area behind buildings C and D. The top of the bank, alongside the driveway, will be planted with an evergreen hedge with street trees interspersed throughout its length with an eight foot high fence running the length of the residential area. The rip rap slope will then receive soil and be vegetated with crown vetch or other planting material suitable for slope conditions.

It is the intent of the landscape design to re-vegetate the developed site with as many trees, shrubs and perennial plantings as reasonably appropriate in a commercial development. For all the buffer areas and perimeter of the site that will remain undisturbed, special tree and site protection will be used to retain the existing vegetation and existing mature trees. These

plantings will be in the form of both complimentary and screening landscape treatments, as well as additional plantings where appropriate to augment the plantings described above.

### Lighting Plan

As shown in the Lighting Plan Sheet 1 of 2 and indicated in the discussion above, the lighting plan has been designed to minimize spillover lighting to the maximum extent practicable and to conform to the requirements of Chapter 125 of the Code of the Town of Newburgh.

Specifically:

- The area of brilliance, character, color, degree, density, intensity, location and type of illumination will be the minimum necessary to provide for the security of the property and the safety and welfare of the public.
- All sources of illumination, including sign lighting, will be shielded or directed in such a manner that avoids casting light onto adjoining residential properties
- Illumination will be steady in nature, not flashing, moving or changing in brilliance, color or intensity.
- The duration, period or time of illumination of the shopping center will be the minimum necessary to provide for the security of the property and the safety and welfare of the public. Lights will typically be extinguished, except those necessary for the security of the property and safety of persons, one (1) hour after the premises are closed to the public.

Pole mounted lighting will be used throughout the development to illuminate roads, parking lots and walkways. All pole mounted lighting will be directed down and will be shielded to control light pollution beyond the areas that are necessary to light as well as to prevent light spilling over property lines.

Lighting will be used for the hours of evening operation. They will come on at variable times over the course of the year responding to changes in evening hours of available daylight. At the time of year with longest daylight hours, around June 21st, natural daylight will be sufficient to light the site until as late as 8:30 PM. Lights will be turned as early as 5 PM at the time of year of shortest day light hours, around December 21st.

Lights primarily for the safety of visitors in parking and sidewalk areas, and for sign illumination, will generally be turned off after 10 PM. These lights may be on timers that will automatically turn them off. Other lights, which are necessary for security, may remain on all evening. These lights will generally be a lower level of lumens and will be located at entrances and strategically around the site roadways to allow effective evening surveillance.

## **4.0 ALTERNATIVES**

The regulations implementing the New York State Environmental Quality Review Act (SEQRA) with respect to alternatives require the following:

*“a description and evaluation of the range of reasonable alternatives to the action that are feasible, considering the objectives and capabilities of the project sponsor. The description and evaluation of each alternative should be at a level of detail sufficient to permit a comparative assessment of the alternatives discussed. The range of alternatives must include the no action alternative. The no action alternative discussion should evaluate the adverse or beneficial site changes that are likely to occur in the reasonably foreseeable future, in the absence of the proposed action.”*

In addition to the proposed site plan layout which is the subject of the DEIS, the following alternatives are examined in this section:

- No Action Alternative
- Access Road Realignment Alternative
- Buffer Alternative
- Alternate Lifestyle Center

No analysis of an alternative that would present other uses to the site, i.e., residential, industrial or some mixed use concept is provided. The applicant is not proposing to develop this site as anything other than for retail sales.

With the exception of the "No Action" alternative, the alternatives presented below represent similar physical impacts to the site. The major differences between these alternatives, as requested in the adopted scoping document, relate to site plan issues. These issues include site access and traffic, buffer treatments of the site perimeter, configuration of the lifestyle center and potential pedestrian access.

### **4.1 No Action Alternative**

In accordance with SEQRA regulations, the No Action Alternative must evaluate the adverse or beneficial site changes that are likely to occur in the reasonably foreseeable future in the absence of the proposed action. The No Action Alternative is the scenario that would occur if no development were to take place at the site. Under this alternative, the site would remain in its largely undeveloped state and no improvements would occur.

This alternative is not likely, considering the objectives of the applicant, the allowable uses permitted under local zoning, the relative scarcity of developable land that can be readily accessed by major roadways, and the continuing demand for commercial space as the region's housing market expands. The Marketplace site is prime real estate because it is fully served by well developed infrastructure, and because of its proximity to Interstate 84 and the New York State Thruway.

In order for the site to remain vacant, either a governmental agency or a conservation organization would need to purchase the property for permanent open space protection and compensate the property owner accordingly. Use of the site would not represent the best use of the Marketplace property given its proximity to the regional road system and availability of utilities.

Although inconsistent with the applicant's objectives, the No Action alternative would eliminate some of the impacts identified in this report, whether adverse or beneficial.

Should the proposed action not occur, none of the direct impacts of construction identified in this report would take place. Impacts of the No Action Alternative are compared to those of the proposed action by subject area below.

Soils and Topography: There would be no impact to soils and topography with this alternative compared to the proposed action. Under the No Action alternative, there would be no introduction of buildings and parking areas into the site. There would be no grading disturbances.

Wetlands: There would be no impacts to existing wetlands. The existing wetlands would remain in their present state.

Terrestrial and Aquatic Ecology: Under the No Action alternative, there would be no removal of on-site vegetation, primarily hardwood forest which is common in the region. The site vegetation would continue to provide areas of habitat and cover for wildlife.

Water Resources: There would be no change in the existing drainage patterns. Flooding problems presently experienced at the intersection of Meadow Avenue, Route 52, and Powder Mill would not be mitigated as proposed under the proposed action.

Zoning and Land Use: Land use at the project site would remain vacant (97 percent of the site) or residential (3 percent of the site). The Town would not benefit from additional retail uses to be located at the project site. Under the No action alternative, there would be no focal point created at the site as proposed by the introduction of the lifestyle center. Leaving the site vacant would not be consistent with County recommendations related to priority growth areas where more intense development is envisioned to offset preservation of the rural character in other locations of the County.

Traffic and Transportation: The No Action Alternative eliminates the additional traffic that would be introduced by the proposed Marketplace. The No Action alternative would not change the traffic patterns that presently occur in the site area. No new site access roads would be constructed. There would be no improvement to the Meadow Avenue/Powder Mill/Route 52 intersection which presently experiences poor levels of service during the PM peak hour period as well as flooding problems. The applicant would not provide a fair share contribution to improvements to the NYS Route 300 and NYS Route 52 intersection.

Community Services and Socioeconomics: There would be no demand placed on community service providers although the proposed plan is not anticipated to have a significant effect to same. No property or sales tax revenues would be generated by the No action alternative. The proposed plan is estimated to generate approximately \$2.64 million in annual real estate taxes and \$38 million in annual sales taxes to various taxing jurisdictions, including the State of New York, Orange County, the Town of Newburgh and the Newburgh Enlarged City School District. The Newburgh City School District would not receive an estimated \$1.9 million annually in school district tax revenues to offset costs to the district associated with the growing number of schoolage children in the district.

The No action alternative would not result in an increase to the Town's job base, including 1,600 employment positions created in a number of job categories such as sales, management, administration, accounting services, security and maintenance. The project would result in the creation of up to 1,000 person-years of construction employment.

Noise: Ambient noise levels would remain the same as present conditions. Under the proposed action, the project would not significantly impact ambient noise levels.

Air Quality: No air quality related impacts would result from the No Action Alternative. There would be no introduction of additional emissions as a result of traffic to the site although the proposed site plan would not result in any CO exceedances. There would be no temporary, short-term increase in dust as a result of construction on the Marketplace property.

Visual Resources: There would be no change to the visual environment under the No Action Alternative. The existing vegetation would remain in its natural state.

#### **4.2 Access Road Realignment Alternative**

This alternative presents a layout which would realign the easterly access drive onto New York State Department of Transportation property. All other aspects of the layout, including the proposed berm, landscape planting and solid wood fencing along the Hilltop property line, are the same as the proposed plan. This alternative is shown in Figure 4-1.

With this access alternative, the applicant also considered the provision of pedestrian access to the site. Consideration was given to providing pedestrian access to residents along Hilltop Avenue and Brookside Avenue, but due to concerns expressed by adjacent property owners and security concerns of potential tenants this alternative was abandoned. Pedestrian access from the east, via Route 52/Fifth Avenue/Exit 8, was considered to be too far away from the shopping facilities to be practical.

If directed by the Town of Newburgh, the applicant would consider providing pedestrian access to the site intersection with Route 300, thereby connecting existing and proposed bus stops and pedestrian connections with both the Marketplace and the Newburgh Mall. Figure 4-2 shows potential internal pedestrian circulation as well as connections to Route 52 at Meadow Avenue and Route 300 across from the Newburgh Mall.

Impacts of the Access Road Realignment Alternative are compared to those of the proposed action by subject area below.

Soils and Topography: This alternative would result in a minor increase in disturbance, approximately two (2) acres, compared with the proposed action, in order to construct the realigned road. Of that two acres, there would be an additional one (1) acre of disturbance to slopes 15 percent or greater with this alternative.

Wetlands: The Road Realignment Alternative would likely result in reduced impacts to Wetland "E" as the realigned road would cross Quassaic Creek in an area where the extent (i.e., width) of these on-site wetlands is more limited.

Terrestrial and Aquatic Ecology: The proposed Marketplace development and the Road Realignment Alternative would have similar impacts in regards to terrestrial and



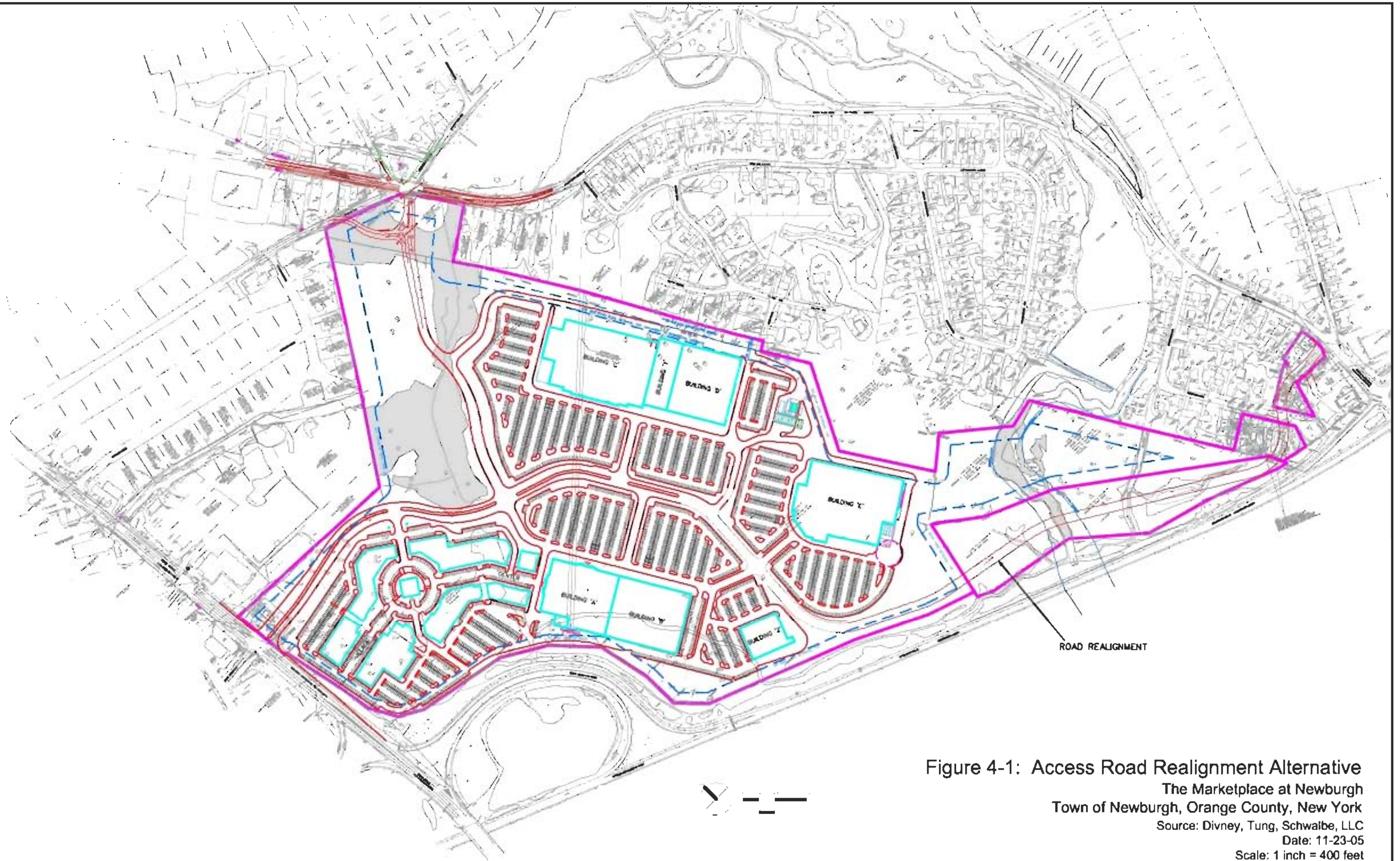


Figure 4-1: Access Road Realignment Alternative  
The Marketplace at Newburgh  
Town of Newburgh, Orange County, New York  
Source: Divney, Tung, Schwalbe, LLC  
Date: 11-23-05  
Scale: 1 inch = 400 feet



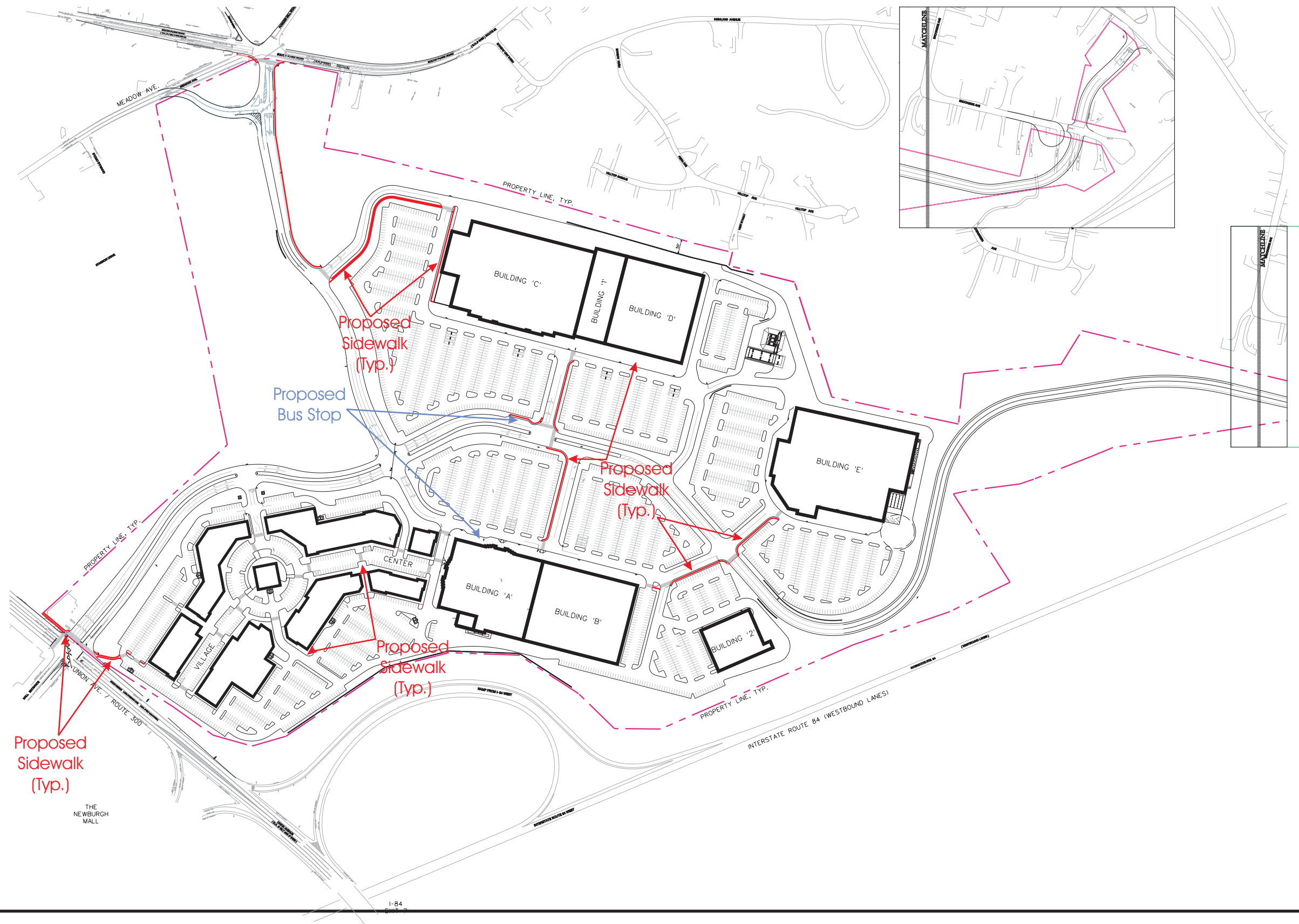


Figure 4-2: Pedestrian Circulation Plan  
 The Marketplace at Newburgh  
 Town of Newburgh, Orange County, New York



aquatic ecology. It is expected that the same span would be used to bridge the Quassaic Creek as the proposed action.

Water Resources: The additional two acres of overall disturbance would not result in any significant changes in stormwater runoff or stormwater quality. The 100-year flood plain is slightly wider in the location where the alternative drive would cross the Quassaic Creek. Thus, disturbances to the 100-year flood plain would be slightly greater compared to the proposed action although this is not considered a significant increase in disturbance.

Zoning and Land Use: Under this alternative, a larger natural buffer would be provided between the realigned road and homes on Wintergreen and Brookside Avenue representing a positive benefit.

Traffic and Transportation: Impacts to the roadway network and transportation improvements would be the same as the proposed action.

Community Services and Socioeconomics: This alternative would have the same effects on community service providers and would have the same positive economic impacts as the proposed action. Three access points would still be provided.

Noise: Due to the increased distance between the realigned access road and residential dwellings on Wintergreen and Brookside Avenues, there may be a slight decrease in projected noise levels for some dwellings in the vicinity of the access road when compared with the proposed action.

Air Quality: Since traffic levels would remain the same under this alternative compared with the proposed action, air quality effects would be the same. Similar to the proposed action, it is not anticipated there would be an exceedance of the CO standards.

Visual Resources: The Road Realignment Alternative would provide a greater natural vegetative buffer between the homes on Wintergreen Avenue and several homes on Brookside Avenue compared with the proposed action representing a positive visual benefit.

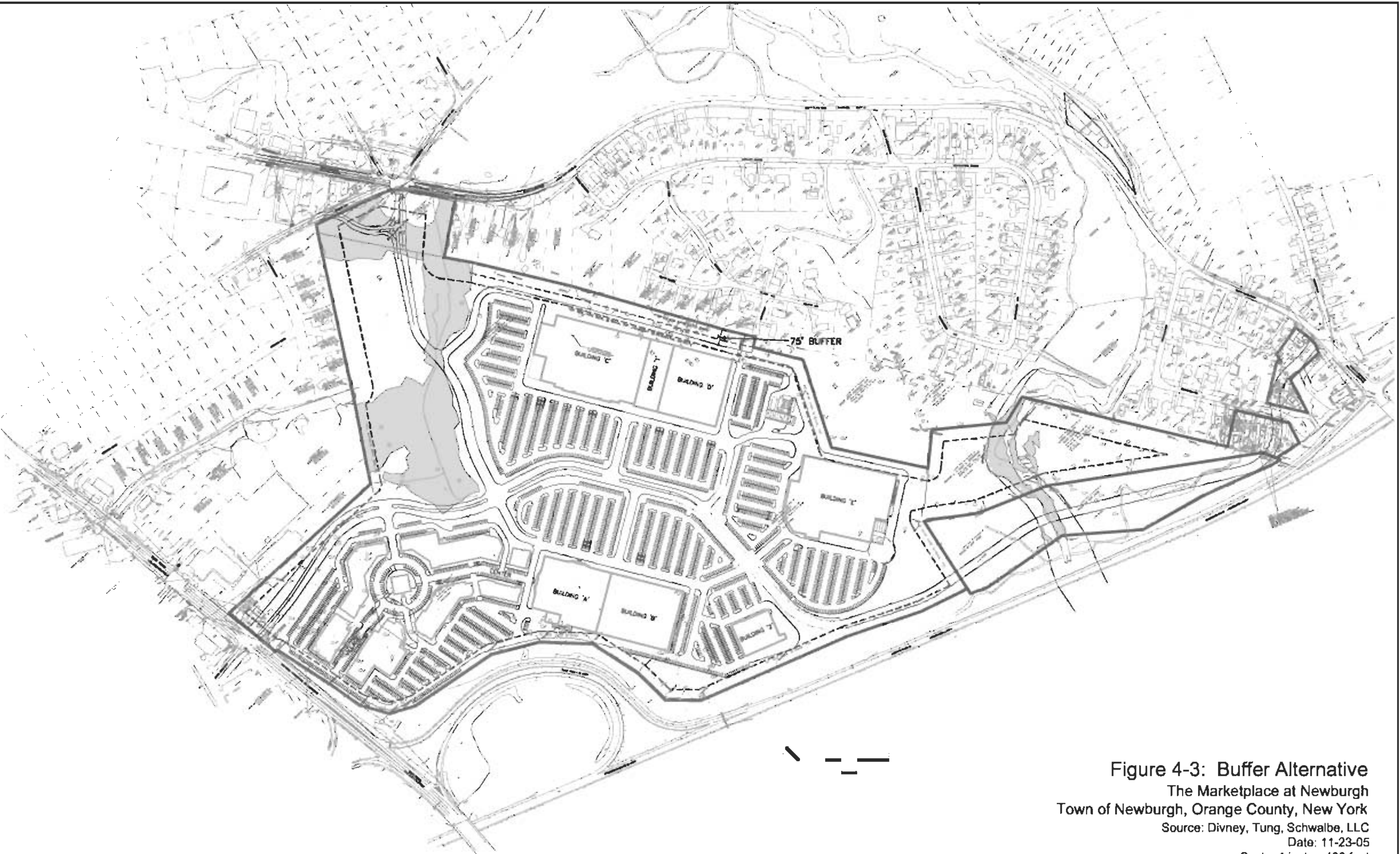
### **4.3 Buffer Alternative**

This alternative layout increases the building setback from 100 feet to 120 feet and includes a 50-foot nondisturbance area, increasing the vegetative buffer from 50 feet to 75 feet in the area abutting Hilltop Avenue. This layout is illustrated in Figure 4-3. This alternative also includes the realigned easterly access road noted in Section 4.2 above, therefore the discussion presented under Section 4.2 also applies to this alternative and is incorporated by reference.

The discussion below is related to the effects associated with the expanded buffer only.

The most significant benefit associated with this alternative would be the 50 percent increase in the minimum buffer width than that required by the Town's zoning regulations, which would represent a positive impact to adjoining residential uses.

The potential effects of the expanded Buffer Alternative are compared to those of the proposed action by subject area below.



**Figure 4-3: Buffer Alternative**  
The Marketplace at Newburgh  
Town of Newburgh, Orange County, New York  
Source: Divney, Tung, Schwalbe, LLC  
Date: 11-23-05  
Scale: 1 inch = 400 feet

Soils and Topography: The additional 25-foot wide buffer area would result in a slight decrease in clearing and grading disturbances along the northerly property line.

Wetlands: There is no change in the wetland impacts as a result of the expanded vegetative buffer.

Terrestrial and Aquatic Ecology: This alternative would result in the same amount of impervious area and site disturbance and would have similar impacts to plant and animal life as the proposed action. The additional 25-feet of vegetative buffer would have a limited positive impact on wildlife that may use this expanded strip for foraging.

Water Resources: The Buffer Alternative would result in no changes in demand for water resources as compared to the proposed project.

Zoning and Land Use: This alternative would provide a vegetative buffer that is more expansive than the proposed action, and which would exceed the minimum requirements of the zoning regulations. The expanded buffer would benefit the adjoining residences along Hilltop Avenue that share a boundary with the Marketplace property. This would, however, result in less available land for parking spaces, thus a diminution of useable square footage.

Traffic and Transportation: There would be no change to traffic and transportation under this alternative compared with the proposed action.

Community Services and Socioeconomics: Impacts to community services under this alternative would be similar to the proposed action.

Noise: This alternative may result in slightly greater noise attenuation than under the proposed action, although it may be barely perceptible when compared with the proposed action.

Air Quality: There would be similar impacts to air quality with the Buffer Alternative as compared to the proposed action, which would not result in an exceedance to carbon monoxide standards.

Visual Resources: This alternative would enhance the amount of natural, vegetative screening that would be located between neighboring residential dwellings located along Hilltop Avenue and the Marketplace development thus representing a positive visual effect.

#### **4.4 Alternate Lifestyle Center**

An alternative building orientation layout with a modified design for the lifestyle center has been prepared. In this alternative, the circular arrangement of parking located centrally in the lifestyle center has been removed as shown in Figure 4-4 and a longer main street is created with improved view corridors and more efficient parking areas. Thus, the orientation of the surrounding buildings has been slightly modified as a result.

This alternative shows the realigned drive that would traverse NYS DOT land near I-84 for the access road to Route 52, as discussed above in Section 4.2 and incorporates the expanded buffer described in Section 4.3 Thus, the differences in impacts associated with these alternatives, when compared with the proposed action and described in Sections 4.2

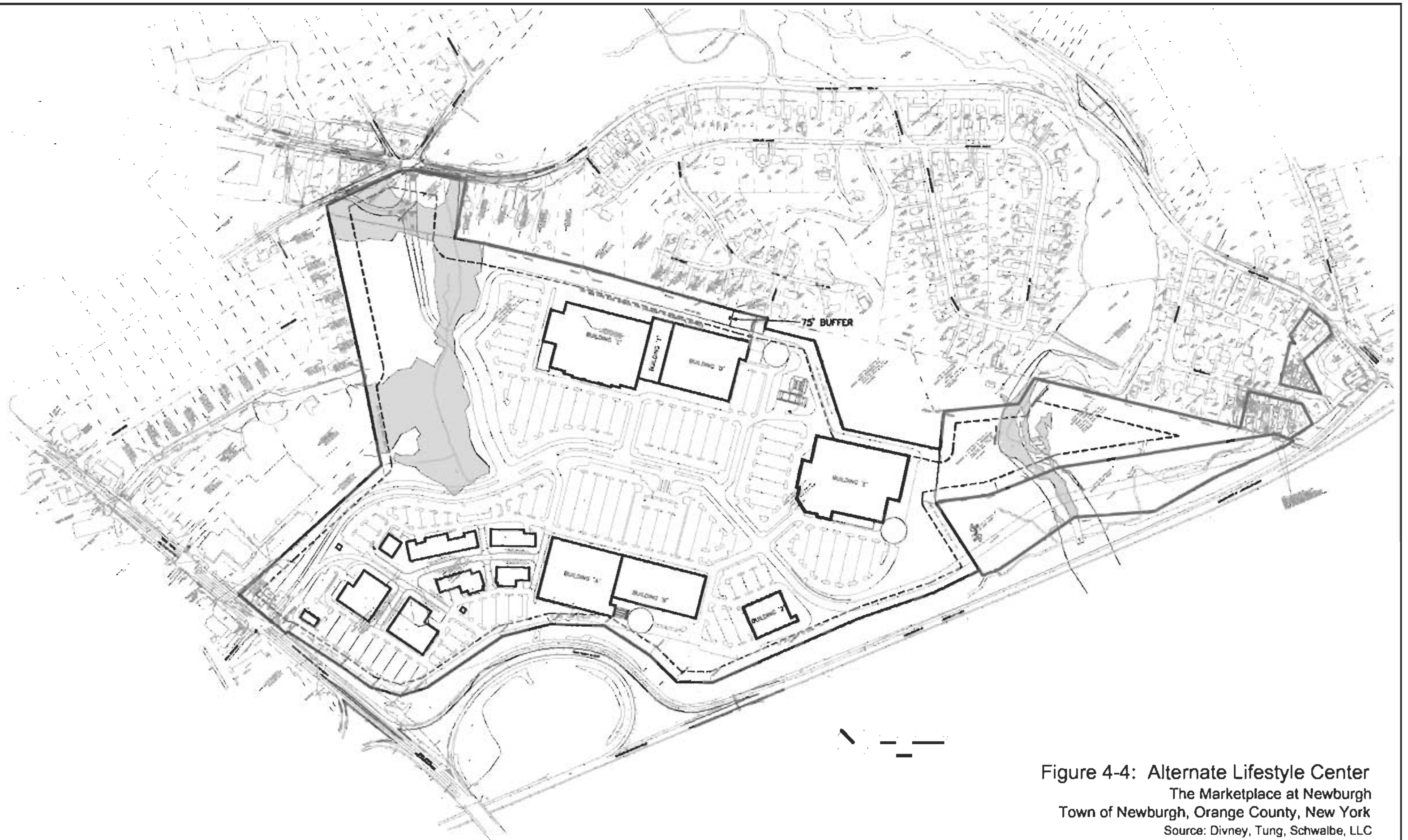


Figure 4-4: Alternate Lifestyle Center  
The Marketplace at Newburgh  
Town of Newburgh, Orange County, New York  
Source: Divney, Tung, Schwalbe, LLC  
Date: 11-23-05  
Scale: 1 inch = 400 feet



and 4.3, are incorporated by reference. This section addresses changes associated with the Alternate Lifestyle Center arrangement only.

Soils and Topography: This alternative would result in impacts similar to that of the proposed development. There would still be construction of access roads, retail buildings, and associated parking. An equal amount of disturbance is proposed.

Wetlands: This alternate lifestyle center layout would result in the same disturbances to on-site wetlands as the proposed action.

Terrestrial and Aquatic Ecology: The proposed action and this alternative would result in the same impacts to terrestrial and aquatic ecology.

Water Resources: There would be the same impacts to water resources with this alternative lifestyle center layout as with the proposed action. The same post-development stormwater management facilities would be constructed.

Zoning and Land Use: The lifestyle center alternate would still be consistent with the commercial land uses located along Route 300 as with the proposed action. This alternative would also comply with all Town zoning regulations.

Traffic and Transportation: There would be no change to the off-site traffic impacts and proposed traffic improvements under this alternative compared with the proposed action. The internal traffic pattern and pedestrian thoroughfares are more efficient and conducive to the use.

Community Services and Socioeconomics: The alternate lifestyle center design proposes a similar amount of commercial space, thus the same positive economic benefits would result. Demand for community services would be the same as the proposed action.

Noise: Noise effects of the alternative lifestyle center would be the same as the proposed action.

Air Quality: This alternative would have the same air quality effects as the proposed action.

Visual Resources: Visually, the alternative design creates more of a main street vista by having a longer stretch of small shops visible from the main thoroughfare. Extended view corridors are created to promote the destination as a community center and a place to socialize. Backs of stores and loading areas are more properly screened. Parking is located in more accessible areas, but less visible to the main street.



**5.0 ADVERSE ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROJECT IS IMPLEMENTED**

The project would result in adverse environmental impacts that cannot be avoided. Although these impacts cannot be avoided, many have been mitigated as noted in preceding chapters of the DEIS. Some impacts will be temporary or short-term in nature and associated with the construction phase, while long-term impacts would be associated with long-term occupancy of the Marketplace.

**Short-Term Effects**

- The presence of construction and delivery vehicles on the site and on surrounding roads;
- the localized increase in noise levels due to operation of construction vehicles and equipment; and
- the increased susceptibility to erosion as vegetation is removed. A description of the potential erosion and the proposed erosion control plan is provided in Section 3.1 of this DEIS.

**Long-Term Effects**

- Loss of vegetation and woodland, and associated wildlife habitat;
- loss of non-regulated isolated wetlands;
- the alteration of approximately 108 acres of existing topography to accommodate roads, buildings, driveways and development areas and associated loss of topsoil; and
- increased traffic on area roads.

**6.0 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

The proposed plan would commit approximately 108 acres of land to commercial use for the construction of approximately 850,000 square feet of retail space and ancillary facilities. Once committed to commercial use, the site would be unavailable for other uses for the foreseeable future.

The finite resources that would be irretrievably committed by the proposed action would be materials and energy required to construct and maintain the subdivision upon completion. Construction would involve the commitment of resources including concrete, asphalt, steel, lumber, paint products, and other building materials.

The operation of construction equipment would result in consumption of fossil fuels and other finite energy sources. When completed, the retail space would require electricity and the use of fossil fuels either directly as heating fuel or indirectly as electricity.

The construction phase of the project would require a substantial commitment of manpower, approximately 900 person years of employment.

## **7.0 GROWTH-INDUCING ASPECTS**

The project site and its immediate environs are presently served by municipal water (Consolidated Water District) and sewer (Crossroads Sewer District). Therefore, there would be no extension of water or sewer service to this area in a manner that would induce additional growth.

As noted below, the project will promote increased construction employment and, on a cumulative basis, an increased long term demand for goods and services that will have a steady multiplier effect in the Newburgh area.

### *Short-term Employment*

As noted in Section 3.7 of this DEIS, the proposed project would generate approximately 900 person years of construction employment.

A portion of this employment will come from the Town of Newburgh and the surrounding northeastern Orange County area. The majority of construction employees are likely to come from areas throughout Orange County. These construction employees will be expected to expend income on food, convenience shopping, gas purchasers, etc., in the immediate vicinity of the project site, increasing sales among local area stores.

### *Long-term Employment*

As described in Section 3.7 of the DEIS, it is estimated that the proposed project would result in the addition of one employee per 500 square feet of gross leasable area. Assuming 95 percent of the shopping center space is leasable, the shopping center would employ approximately 1,600 persons.

The Marketplace of Newburgh would create job opportunities in Orange County, generating demand for approximately 1,600 positions in a number of job categories, including but not limited to sales, management, administration, accounting services, security and maintenance. These jobs would represent a sizable increase in employment in the Town of Newburgh and Orange County.

Based on New York State Department of Labor Statistics for 2004 average annual retail wages, it is expected that the Marketplace would generate approximately \$42,438,400 in annual wages. A percentage of the wages expended by persons employed at the Marketplace would be expected to increase the retail sales at the Marketplace and other retail centers in Newburgh.

## **8.0 EFFECTS ON THE USE AND CONSERVATION OF ENERGY RESOURCES**

Short-term and long-term energy consumption is anticipated. Short-term energy consumption would occur during construction of the proposed project. Energy would be consumed to power equipment and construction vehicles.

Once constructed, the 850,000 square feet of commercial retail space would place demand on various energy sources. In a commercial building, energy is consumed for space heating, air-conditioning, water heating, and lighting. Natural gas and electricity are the predominant fuel sources for retail uses. According to data published in the 1995 Commercial Buildings Energy Consumption Survey (Source: U.S. Department of Energy), retail space consumes approximately 61,700 BTUs per square foot annually. It is expected that 850,000 square feet of retail space would expend 52.4 million BTU<sup>1</sup> of energy annually.

It is unknown what specific energy conservation design measures would be used as the specific design of buildings will be tenant driven. Regardless, energy conservation is mandated at the state level. The design and plans for commercial buildings must comply with the New York State Energy Conservation Construction Code. The code specifies basic requirements that are mandatory for commercial buildings. Requirements apply to the building envelope, mechanical systems, and lighting.

With regard to the design of building envelopes, the NYS Energy code requires that:

- insulation R-values and glazing and door U-factors be certified by the National Fenestration Rating Council (NFRC) or by using default values found in tables published in the Code.
- vapor retarders be installed in nonvented framed ceiling, wall, and floor areas.
- insulation levels for walls, roofs, and below-grade walls and glazing areas, and U-factors for windows and skylights meet or exceed minimum efficiency levels.
- air leakage be limited through the building envelope.

The NYS Energy Code also requires that water and air cooling and heating mechanical systems and equipment comply with code, and compliance is dependent on the type of mechanicals proposed.

In terms of lighting standards, the NYS Energy Code requires:

- manual or automatic controls or switches that allow occupants to dim lights and turn them on or off when appropriate. The Code identifies control, switching, and wiring requirements that apply to all buildings.
- total connected loads for indoor lighting systems that do not exceed power allowances for a building. The Code demonstrates how to comply with interior-lighting power limits.
- energy-efficient exterior lighting. The Code specifies criteria for complying with exterior-lighting requirements.

The proposed project would be required to comply with the requirements of the NYS Energy Conservation Construction Code.

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<sup>1</sup> BTU, or British Thermal Unit, is a unit of heat equal to the amount of heat required to raise one pound of water one degree Fahrenheit at one atmosphere pressure; equivalent to 251.997 calories.

**9.0 SOURCES**

For ease of reference, sources are referenced in the text of the DEIS or as footnotes.